

## ESGE Days 2020



**Datum/Venue:**  
23 – 25 April 2020, Dublin, Ireland

**Chairman:**  
Mario Dinis- Ribeiro (Portugal)

## Welcome message

Dear colleagues

We were thrilled to receive so many excellent abstract submissions for ESGE Days 2020. The record number of 1,283 and diversity of abstract topics highlight once again how rapidly our field of endoscopy is developing and evolving. It is this rate of change and exponential growth which was one of the initial impetus for our congress series. It was and still is clear that the time for an endoscopy focused congress in Europe has arrived.

Unfortunately, due to the unique Covid-19 pandemic it was necessary to cancel ESGE Days 2020. However we wanted to ensure that the authors of all our accepted abstracts still had the opportunity to share their research findings with a wide audience. We hope that you will find the ESGE Days 2020 abstract edition informative and useful. We would encourage you to be proactive and broaden your network of contacts as you would have done in person in Dublin during ESGE Days 2020. If a study is particularly interesting to you or perhaps you would like to know more about getting involved – why not reach out and make contact?

Thanks to all of our abstract authors and we look forward to receiving even more cutting edge submissions when we open the call for ESGE Days 2021!

Best wishes

Mário Dinis-Ribeiro  
ESGE President



► Mário Dinis-Ribeiro  
ESGE President

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The abstract issue status is as at February 4, 2020.  
Final changes are available on the ESGE Days 2020 App and  
online at [www.esgedays.org](http://www.esgedays.org).

## ESGE Days 2020 oral presentations

Thursday, April 23, 2020

08:30 – 10:00

Large colonic polyps: Slice and dice

Ecoem Room

**OP1 PROTECTIVE ROLE OF UNDERWATER ENDOSCOPIC MUCOSAL RESECTION AGAINST THE THERMAL INJURY. A RANDOMIZED CONTROL TRIAL AND CROSS-SECTIONAL ANALYSIS**

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DOI 10.1055/s-0040-1704022

**Aims** Thermal injury is the corner stone of the delayed adverse events in EMR, however the strategy to downplay this fact has been scarce assessed. The role of immersion seems to be a suitable way to do it but this matter has not been tested so far.

The end-point of the study was to compare the effect of diathermy of CEMR and UEMR and its aftermath in terms of: scar appearance, safety (adverse events) and thermal artefact in histological analysis.

**Methods** Randomized and multicenter control trial of consecutive lesions larger than 2 cm and previously treated lesions was performed. Lesions were randomized using the REDCAP platform. A cross sectional study was done focused on technical aspects related to diathermy effect.

**Results** A total of 216 lesions (33,59 mm in size (10-90 mm)) were enrolled (109 in the CEMR group and 107 in the UEMR group). There was no difference in size (32.42 mm CEMR vs. 34.79 mm UEMR;  $p=0,24$ ) and location (proximal colon 63,4% CEMR vs.57,9% UEMR;  $p=0.11$ ). The procedures were performed in the same way (Piecemeal manner 57,4% CEMR vs.59% UEMR; $p=0.38$ ) with equivalent snares (braided type in 82.6% CEMR vs. 75% UEMR;  $p=0.28$ ). Regarding the scar appearance, there were no differences in global view with Sydney  $\geq 2$  in 17% CEMRvs.14% UEMR; $p=0.58$ ), cut vessels (12.9% CEMR vs. 19% UEMR;  $p=0.22$ ), however Cherry spot sign was almost three-fold higher in CEMR (27.7%vs.10.4%;  $p=0.001$ ), which traduced a higher delayed bleeding rate in the CEMR group (9.2% vs.5.6%;  $p=0.23$ ). There were no delayed perforations in both groups. Concerning the macroscopic thermal effect in the specimens, they were significantly damaged more often with CEMR (5.6% vs.0%;  $p=0.05$ ).

**Conclusions** UEMR seems to play a protective role toward diathermy damage, which gives it a better safety profile comparing to CEMR, even optimizing the quality of histological assessment.

**OP2 PROPHYLACTIC ANTIBIOTICS IN THE PREVENTION OF INFECTION IN PATIENTS UNDERGOING ENDOSCOPIC RESECTION OF COLORECTAL LESIONS: A META-ANALYSIS**

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DOI 10.1055/s-0040-1704023

**Aims** Larger colorectal lesions tend to have a higher risk of infection after endoscopic mucosal resection (EMR) or endoscopic submucosal dissection (ESD), possibly because of the larger wound areas. There have been conflicting studies on prophylactic antibiotics in the prevention of infection in patients who underwent EMR or ESD.

**Methods** A comprehensive literature search from the PubMed Central, Embase, Cochrane Library, and Ovid was performed with the following search terms: prophylaxis, antibiotics, EMR, and ESD. Four studies were selected and validated using the Jadad scale. Trial results were combined under a fixed-effects model. The Cochrane Review Manager Software version 5.0 was used for all analyses. The primary outcome of study was prevention of post-procedural infection as an adverse clinical outcome.

**Results** Four trials comprising of 850 patients met the inclusion criteria. Three studies were prospective randomized controlled trials while one was a retrospective case control. In the fixed effect model, it showed a statistically significant decrease in the infection rates ( $p<0.00001$ ) among patients who were given antibiotic prophylaxis compared to those without (2.9% vs. 26.7% infection rate; OR 0.21, 95% CI: 0.11-0.38). The four trials showed moderate heterogeneity ( $I^2=36\%$ ) since the study by Muro (2015) was of retrospective method. Reconstructing the forest plot analyzing only the prospective studies minimized heterogeneity ( $I^2=0\%$ ).

**Conclusions** Prophylactic antibiotics given pre- and post-endoscopic resection have shown favorable outcomes in the prevention of infection post-procedure. Nevertheless, further studies on the optimal antibiotic drug class, dosage and duration is recommended.

**OP4 LONG-TERM OUTCOMES AFTER UNDERWATER ENDOSCOPIC MUCOSAL RESECTION VERSUS ENDOSCOPIC SUBMUCOSAL DISSECTION FOR 20-30 MM SIZED COLORECTAL LESIONS: A PROPENSITY SCORE-MATCHED STUDY**

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DOI 10.1055/s-0040-1704025

**Aims** Endoscopic submucosal dissection (ESD) has been widely performed for large colorectal polyps in Japan. On the other hand, underwater endoscopic mucosal resection (UEMR) can be an alternative promising endoscopic resection (ER) method for large colorectal lesions. However, there is no direct comparison between ESD and UEMR for large colorectal lesion. In this study, we aimed to evaluate the efficiency of UEMR for 20-30 mm sized colorectal lesions, compared with ESD.

**Methods** This was a single-center retrospective observational study. Patients who underwent ER for 20-30 mm sized sessile colorectal lesions at our institution were enrolled. Data were systematically retrieved using endoscopic database and medical charts from November 2014 to February 2019. The main outcome measurement was incidence of local recurrence, which is defined as a lesion that was accompanied with post-ER scar endoscopically and proved pathologically. We performed propensity score matching (PSM) to control and reduce the selection bias

between the UEMR and ESD groups. Therapeutic and long-term outcomes were evaluated between the groups.

**Results** 76 UEMR and 185 ESD were performed for sessile 20-30 mm sized lesions during the study period. After PSM of the two groups, 59 lesions in each group were compared, and their demographic and tumor characteristics were similar. Median procedure time with UEMR was significantly shorter than that with ESD (6 min vs 57 min,  $p < 0.001$ ). En bloc resection rate with UEMR was significantly lower than that with ESD (61.0% vs 98.3%,  $p < 0.001$ ). During median follow-up period of 11 and 13 months for UEMR and ESD, there was no significant difference in local recurrences rate between UEMR and ESD (0% versus 0%,  $p = 1.00$ ).

**Conclusions** UEMR for 20-30 mm sized colorectal lesions can be comparable to ESD in terms of long-term outcomes with shorter procedure time, regardless of lower en bloc resection rate.

## OP5 UNDERWATER- VERSUS CONVENTIONAL ENDOSCOPIC MUCOSAL RESECTION OF LARGE SESSILE OR FLAT COLONIC POLYPS: PRELIMINARY RESULTS OF A PROSPECTIVE RANDOMIZED CONTROLLED TRIAL

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**DOI** 10.1055/s-0040-1704026

**Aims** Conventional endoscopic mucosal resection (CEMR) with submucosal injection is the current standard for the resection of large, non-malignant colonic polyps. Underwater EMR (UWEMR) is a novel technique and has been shown to be more effective than CEMR for colonic polyps up to 20 mm in size. In this study, we present preliminary results of a randomized, controlled trial to demonstrate the efficacy, safety and feasibility of UWEMR for large sessile or flat colonic polyps between 20 mm and 40 mm.

**Methods** Patients with sessile or flat colonic lesions between 20 and 40 mm in size were randomly assigned to UWEMR or CEMR. For this preliminary paper, we analyzed the outcome of 58 colonic lesions in the UWEMR group and 59 in the CEMR group as regards en bloc resection rate / number of resected pieces, complication rate and resection time.

**Results** Total en bloc resection rates were 27,6% in the UWEMR group vs 18,6% in the CEMR group ( $P = .2792$ ). In case of piecemeal resection, UWEMR was performed with significantly fewer pieces compared to CEMR (2 - 3 pieces: 69% UWEMR vs 37,5% CEMR) ( $P = .0035$ ). Mean resection time was 12.5 minutes for UWEMR and 18.0 minutes for CEMR ( $p = .481$ ). Bleeding rates were similar in both groups (15,5% UWEMR vs 16,9% CEMR) ( $P = 1.0$ ) and no perforation occurred in either groups.

**Conclusions** UWEMR is safe and feasible even for large colonic lesions with a trend towards a higher en bloc resection rate and a faster resection time as compared to CEMR. There were significantly fewer resected pieces in piecemeal UWEMR. Follow-up data on R0 resection as well as recurrence rates after 6 and 12 months will be presented subsequently.

## OP6 COMPARISON BETWEEN UNDERWATER ENDOSCOPIC MUCOSAL RESECTION AND ENDOSCOPIC SUBMUCOSAL DISSECTION FOR RECURRENT COLORECTAL NEOPLASMS AFTER ENDOSCOPIC REMOVAL: A PROPENSITY SCORE-MATCHED STUDY

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**DOI** 10.1055/s-0040-1704027

**Aims** Locally recurrent colorectal neoplasms (LRCN) after endoscopic removal (ER) are difficult to treat with conventional ER because of severe fibrosis. Endoscopic submucosal dissection (ESD) and Underwater endoscopic mucosal resection (UEMR) are reportedly effective. We aimed to investigate appropriate indications of these procedures.

**Methods** This was a single-center retrospective observational study. Patients who underwent UEMR or ESD for LRCN after ER were enrolled. Data were systematically retrieved from October 2013 to February 2019. Propensity score matching (PSM) between the UEMR and ESD groups were performed. Clinical characteristics, treatment and long-term outcomes between the two procedures were compared.

**Results** 30 UEMR and 21 ESD were performed for LRCN after ER. Median (range) diameter of the lesion in UEMR was 8 (2-22) and 15 (2-58) mm in ESD. Median procedure time in UEMR was significantly shorter than that in ESD [4 (2-15) vs. 70 (17-193) min,  $p < 0.01$ ]. En bloc and R0 resection rate in ESD were significantly higher than those in EMR (73% vs 100%, 41% vs 81%, respectively). Prevalence of cancer (intramucosal or more) was 13% in UEMR and 57% in ESD. No complication occurred in UEMR, but 2 (10%) delayed perforation in ESD. Median hospitalization period in UEMR was significantly shorter in that in ESD [3 (2-9) vs. 7(6-14) days,  $p < 0.01$ ], and 12 cases (40%) in UEMR were performed without hospitalization but no in ESD. There was no recurrence after treatment in both groups during median follow-up of 12 and 24 months, respectively. After PSM extracting 11 cases in each group, both procedure time and hospitalization period were significantly shorter in UEMR than in ESD.

**Conclusions** Long-term outcomes were comparable between UEMR and ESD, although en bloc and R0 resection rate were better with ESD. According to the background difference, UEMR would be a useful procedure for small LRCN after ER.

## OP7V UNDERWATER ENDOSCOPIC RESECTION OF A LST POLYP WITH CIRCUMFERENTIAL INVOLVEMENT OF ILEOCECAL VALVE WITH ILEUM EXTENSION

**Authors** Luna D, Antonio Colan Hernandez J<sup>1</sup>, Marin I<sup>1</sup>, Caballero EN<sup>1</sup>, De Vega VM<sup>1</sup>, Domenech E<sup>1</sup>, Iborra I<sup>1</sup>, Aguilar A<sup>1</sup>, Galindo M<sup>1</sup>, Uchima H<sup>1</sup>

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**DOI** 10.1055/s-0040-1704028

**Clinical case** A 30mm NG-LST polyp, with circumferential involvement of ileocecal valve.

**Endoscopic findings** NBI-near focus and crystal violet chromoendoscopy showing JNET 2A and Kudo III-L. Underwater endoscopic resection was planned. Air aspiration and distilled water instillation until completely filling of the area. EMR with rounded 25mm and 15mm snare (pulse slow-cut 70W mode, effect 2)(ESG 300,Olympus).Piecemeal in 2 major fragments and few small fragments, following a systematic and circumferential approach. Complete resection is achieved,with final inspection of scar and terminal ileum without lesions.

**Conclusions** Underwater EMR is useful for complex resections such as NG-LST with circumferential involvement of ileocecal valve.

## OP8V UNDERWATER EMR FOR ADENOMATOUS LESION WITH DEEP EXTENSION INTO THE APPENDICEAL ORIFICE (AO)

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**DOI** 10.1055/s-0040-1704029

Lesions with extension into the AO are often challenging for EMR.

When the involvement is deep, surgery is usually the first recommendation, however in some cases of deep involvement an endoscopic treatment can be performed.

We present the case of a lesion with deep extension into the AO resected by “underwater” EMR (video).

UEMR was performed with a 15mm rounded snare.

To complete the resection of the deep component, suction of the water and the tissue were performed.

Time of the procedure until specimen retrieval was 24 minutes. Patient was discharged after 2 hours with no complications. Histology showed LGD adenoma.

## OP9V UNROOFING TECHNIQUE: LARGE ULCERATED COLONIC LIPOMA MIMICKING MALIGNANCY

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**DOI** 10.1055/s-0040-1704030

A 50-year-old man presented with abdominal pain and intermittent rectorrhagia. Abdominal computed tomography showed a homogenous low-density mass measuring 32 x35mm at descending colon. A colonoscopy revealed a 35mm ulcerated mass. We performed an unroofing resection with a 20 mm electrocautery snare (SD-230U-20, Olympus). Fat tissue was observed extruding from the cut surface. It was subsequently extracted from the open surface with a cold snare. Preventive hemostasis was performed by clipping with a Padlock Clip and conventional endoclips. Histopathological examination revealed an adipose tissue. There were no procedure-related complications. The unroofing technique is suitable for the treatment of large lipomas.

Thursday, April 23, 2020

10:30 – 12:00

Colorectal Cancer (CRC) Screening  
(WEO-ESGE joint session)

Ecocem Room

## OP10 POST-COLONOSCOPY COLORECTAL CANCER IN LYNCH SYNDROME IS ASSOCIATED WITH QUALITY ISSUES DURING SURVEILLANCE

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**DOI** 10.1055/s-0040-1704031

**Aims** To assess the effect of quality endoscopic factors on the development of PCCRC during surveillance in LS mutation carriers.

**Methods** Multicenter study with 25 high-risk CRC clinics from Spain and 1 from The Netherlands. Demographic, genetics, cancer history, and surveillance protocols from patients LS carriers of verified pathogenic mutations (n=1,746) have been prospectively collected between 2015- 2019. For the current analysis, we focused on healthy-carriers(HC) defined as carriers without CRC prior or in the index colonoscopy. To assess the effect of colonoscopy on PCCRC incidence we evaluated the report of every surveillance colonoscopy (n=3,284). We compared colonoscopies previous to PCCRC with colonoscopies of carriers without cancer. Quality colonoscopy parameters (completeness, bowel-preparation, scope definition and enhancement techniques), time-intervals and findings from a previous colonoscopy were analyzed. Multivariate logistic-regression was performed to identify CRC risk factors.

**Results** We included 893 HC, 596(63.7%) female, with a median age of 50.5 ±14.8 years, a median colonoscopy follow-up of 6.3±4.2 years and 4.8±2.7 colonoscopies. The distribution per gene was: 285(31.9%) *MLH1*, 316(35.4%) *MSH2*, 212(23.7%) *MSH6* and 80(9%) *PMS2* carriers. During surveillance 48 (5.4%) PCCRC were diagnosed [17(35.4%) *MLH1*, 24(50%) *MSH2*, 6(12.5%) *MSH6* and 1(2.1%) *PMS2*]. The mean age at diagnosis was 51.1±10.6 years, the mean follow-up 5.8±5.5 years, 32(66.7%). When analyzing quality colonoscopy indicators, a previous incomplete colonoscopy and previous colonoscopy performed with standard definition appeared as independent risk factors of PCCRC [OR=6.7(95%CI 1.4-33); p0.018 and OR=5.9(95%CI 1.41-25); p0.015]. Besides, an interval between colonoscopies of more than 36 months, or an advanced adenoma in the previous colonoscopy increased more than 4 times the risk of PCCRC [OR=4.1 (95%CI 1.7-9.8); p0.002 and OR=4.16 (95%CI 1.6-10.6); p0.003]. **Conclusions** PCCRC incidence is associated with quality issues in LS carriers under surveillance colonoscopy. High quality colonoscopy and appropriate interval (< 36 months) should be strongly advised. Patients with an advanced adenoma may benefit of shorter interval between colonoscopies.

## OP11 IMPACT OF LESION PHENOTYPE ON COLORECTAL CANCER MORTALITY AND OVERALL MORTALITY: INSIGHTS FROM A NATIONWIDE SCREENING COLONOSCOPY PROGRAM

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**DOI** 10.1055/s-0040-1704032

**Aims** The long-term risk of colorectal cancer (CRC) mortality and overall mortality after screening colonoscopy is poorly investigated. Most studies analyzed mixed cohorts of screening individuals, and symptomatic or individuals with positive fecal immunohistochemical testing.

The aim of this study was to analyze CRC mortality and overall mortality after screening colonoscopy by lesion phenotype.

**Methods** Screening colonoscopies performed within the quality assurance program in Austria between 11/2007 and 06/2018 were matched with a national mortality register. The following lesion phenotypes were defined: 1) negative colonoscopy, 2) low-risk adenoma, 3) high-risk adenoma, 4) hyperplastic polyps, and 5) serrated lesions.

Age and sex adjusted Cox regression analyses were used to analyze the association between lesion phenotypes, CRC mortality and overall mortality.

**Results** 280,291 screening colonoscopies were included in the study. 7,311 deaths of any cause occurred after 55±35.6 months of follow-up, 4,730 men and 2,581 women. Overall mortality rates, adjusted for age and sex, were significantly higher for individuals with high-risk adenomas (HR 1.6, 95%CI 1.5-1.7,  $p < 0.01$ ), low-risk adenomas (HR 1.1, 95%CI 1.0-1.7,  $p = 0.006$ ), and hyperplastic polyps (HR 1.1, 95%CI 1.0-1.2,  $p = 0.004$ ), but not for serrated lesions (HR 1.2, 95%CI 1.0-1.5,  $p = 0.083$ ), compared to negative colonoscopy.

Among a total of 232 CRC deaths (ICD 10: C19-21), 156 were observed in men and 76 in women. High-risk adenomas (HR 8.9, 95%CI 6.5-12.1,  $p < 0.001$ ) and serrated lesions (HR 4.3, 95%CI 1.9-10.0,  $p = 0.001$ ), but not for low-risk lesions (HR 1.3, 95%CI 0.8-2.1,  $p = 0.350$ ) and hyperplastic polyps (HR 1.5, 95%CI 0.9-2.4,  $p = 0.138$ ) were at higher risk for CRC death as compared to negative colonoscopy.

**Conclusions** In individuals undergoing colonoscopy, the lesion phenotype is significantly associated with both CRC-related and all-cause mortality.

Thursday, April 23, 2020

12:20 – 13:00

President's opening session 1

Auditorium

## OP12 RECURRENT NEOPLASIA AFTER ENDOSCOPIC TREATMENT FOR BARRETT'S NEOPLASIA IS RARE: RESULTS FROM A NATIONWIDE COHORT INCLUDING ALL 1,154 PATIENTS TREATED IN THE NETHERLANDS FROM 2008-2018

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DOI 10.1055/s-0040-1704033

**Aims** Radiofrequency ablation(RFA) +/- endoscopic resection(ER) is the standard of care for treatment of Barrett's esophagus with early neoplasia(BE-neoplasia). We report outcomes for all patients treated in the Netherlands(NL) from 2008-2018, with uniform treatment and follow-up in centralized setting.

**Methods** Endoscopic therapy for BE-neoplasia in NL is centralized in 9 expert centers with specifically trained endoscopists&pathologists, a joint protocol and a uniform database.

Patients with low/high-grade dysplasia(LGD/HGD) or low-risk adenocarcinoma (EAC) had visible lesions removed by ER, followed by RFA until complete remission of intestinal metaplasia(CR-IM).

FU with HD-endoscopy was initially done every 3months in year-1, followed by yearly endoscopies until year-5, then every 2-3 years. In 2015, endoscopies within year-1 were abandoned. Initially, 4Q-random biopsies(RBx) were obtained from neosquamous epithelium(NSE) and cardia at every FU. These were abandoned in 2013 and 2016, resp.

**Results** 1,154 patients with median C2M4-BE and LGD(27%), HGD(31%) or EAC(42%) achieved CR-IM. Median FU was 4 (IQR 2-6)years with 4 endoscopies per patient. 370 patients had FU >5years and 112 >8years. 2% was lost to follow-up. 1,114 (97%)patients had sustained CR of neoplasia(SCR-N). 38(3%) developed recurrent neoplasia(14-LGD; 7-HGD; 17-EAC), median 30months after CR-IM. 33/38(87%) were successfully managed endoscopically, 5(0.4% of all pts) progressed to advanced cancer. At baseline, these cases were identified as highly complicated(multifocal HGD/EAC and/or severe reflux stenosis). Overall annual recurrence risk was 0.81%, with a relatively low risk within year-1 (0.18%) and >year-5(0.37%). All HGD/EAC recurrences were detected in targeted Bx of visible abnormalities. None of the 13,184 NSE-RBx contributed to neoplasia detection. 9,746 cardia-RBx detected LGD in 9(0.8%) and IM in 124 (11%) patients; none of which progressed to HGD/EAC.

**Conclusions** In a setting of centralized care, the 2-step approach of ER+RFA has remarkably low recurrence rates after CR-IM. Our data support more lenient FU intervals, with emphasis on careful endoscopic inspection whilst RBx biopsies can be abandoned.

## OP13 EFFICACY OF EARLY ERCP IN PRIMARY AND SECONDARY DISTAL MALIGNANT BILIARY OBSTRUCTION

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DOI 10.1055/s-0040-1704034

**Aims** Early endoscopic retrograde cholangiopancreatography (ERCP) in patients with acute cholangitis, mainly from biliary stones, is known to improve outcomes. Currently, there is a lack of studies regarding optimal timing of ERCP in patients with malignant biliary obstruction (MBO).

**Methods** From January 2005 to June 2018, 1872 patients who visited emergency room (ER) and underwent ERCP for suspected biliary obstruction at Seoul National University Hospital were analyzed. In total, 567 patients with distal MBO were included and further classified as primary and secondary distal MBO groups, according to the tumor origin and status. Early ERCP was defined as ERCP performed within 48 hours after ER arrival. The primary outcomes were 30-day and 180-day mortality in the overall cohort. Secondary outcomes were differences in 30-day and 180-day mortality between patients with primary and secondary distal MBO.

**Results** ERCP was performed within 48 hours of ER arrival in 477 (84.1%) patients. Biliary drainage via ERCP was successful in 444 patients (78.3%), and clinical success rate was 90.8% (403/444). In total cohort, 30-day mortality (2.1% and 12.7%;  $P < 0.001$ ) and 180-day mortality (36.5% and 50.8%;  $P = 0.043$ ) were significantly lower in patients who underwent ERCP within 48 hours than those who did not. In primary distal MBO group, there was positive tendency toward ERCP within 48 hours in 30-day mortality (1.4% vs 7.1%;  $P = 0.066$ ) and 180-day mortality (27.2% vs 42.9%;  $P = 0.057$ ). In patients with secondary distal MBO, 30-day mortality was significantly lower in patients who underwent ERCP within 48 hours than those who did not (4.3% vs 23.8%;  $P = 0.010$ ), while there was no significant difference in 180-day mortality (64.9% vs 66.7%;  $P > 0.999$ ).

**Conclusions** Early ERCP clearly improves clinical outcomes in distal MBO patients regardless of the tumor origin, especially short-term outcomes including 30-day mortality.

## OP14 REAL-TIME COMPUTER AIDED DETECTION OF COLORECTAL NEOPLASIA AT COLONOSCOPY ACCORDING TO THE INDICATION: A RANDOMIZED CLINICAL TRIAL

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**DOI** 10.1055/s-0040-1704035

**Aims** One fourth of colorectal neoplasia is missed at colonoscopy, representing the main cause of interval Colorectal-Cancer(CRC). Deep-learning (DL) systems allow Computer-Aided Polyp-Detection (CADE) with high-accuracy in retrospective studies. We performed a multicenter Randomized clinical trial (RCT) of 700 patients who underwent colonoscopy for: gastrointestinal-symptoms (23%), fecal immunochemical test (29.6%), primary screening (22%), postpolypectomy-surveillance (23.4). Aim was to assess safety and efficacy of CADE system in improving lesion-detection.

**Methods** Consecutive 40-to 80 years old subjects undergoing colonoscopy. Patients were randomized 1:1 between High-Definition CADE-colonoscopy(GI-Genius Medtronic) and control (standard-HD). A minimum Withdrawal Time (WT) of 6 minutes was required. Study end-points were Adenoma Detection Rate (ADR) and Adenomas Per Colonoscopy (APC).

**Results** We included 685/700 randomized patients in the final analysis (age: 61.32 ± 10.2 y.o.; gender M/F: 337/348). Considering the whole sample, ADR was statistically significantly higher in the CADE-group (194/341, 56.9%) than in the control group (141/344, 40.91%; OR:1.9; 95% CI:1.4 to 2.57; p< 0.001), as well as APC (1.13±1.63 vs 0.73±1.12; OR: 2.1; 95% CI: 1.6 to 2.72; p< 0.001).

We studied the two groups within each indication: symptomatic: ADR(47.36% vs 31.76%; OR:1.9; 95%CI: 1.02 to 3.67; p=0.05), APC(0.76±1.06vs0.52±0.11; OR 1.91; 95% CI:1.1 to 3.3; p=0.04). FIT+: ADR(61.76% vs 44.76%; OR 1.99; 95% CI:1.14 to 3.47; p=0.01), APC(1.62±2.3vs0.9±1.39; OR 2.6; 95%CI 1.6 to 4.17; p=0.008). Primary screening: ADR(44.16% vs 32.89%; OR 1.6; 95%CI: 0.8 to 3.1); APC(0.7±0.11 vs 0.48±0.82; OR 1.7; 95% CI: 1 to 3.1; p=0.15). Surveillance ADR(70.93% vs 55.81%; OR: 1.5; 95%CI: 1 to 2.92; p=0.05); APC(1.29 ±1.29 vs 0.99±1.4; OR 1.72; 95% CI: 1 to 3.16; p=0.02). No difference in withdrawal time (CADE: 417±101sec vs control: 435±149; p=0.1) was observed.

**Conclusions** We showed the safety and efficacy of integrating CADE in real-time colonoscopy in terms of substantial improvement of ADR and APC also within each single indication.

## OP15 AGGRESSIVE HYDRATION VERSUS HIGH-DOSE RECTAL INDOMETHACIN IN THE PREVENTION OF POST-ENDOSCOPIC RETROGRADE CHOLANGIO-PANCREATOGRAPHIC PANCREATITIS (AHRI-PEP)

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**DOI** 10.1055/s-0040-1704036

**Aims** To compare vigorous peri-procedural hydration (vHR) with Lactated Ringer's solution Ringer Lactate (LR) versus post-procedure rectal administration of non-steroidal anti-inflammatory drugs (NSAIDs; Indomethacin 100mg).

**Methods** A prospective, randomized, open-label, non-inferiority, parallel-assigned, equal-allocation, controlled clinical trial (*ClinicalTrials.gov* ID: NCT03629600). Assuming PEP of 9% in the Indomethacin arm and non-inferiority margin of 4%, we calculated sample size of 171 patients in each arm for 80% power and  $\alpha$ -error 5% (nMaster Biostatistics2, CMC, Vellore, India). Consecutive adults referred for ERCP, satisfying pre-defined inclusion criteria, were enrolled from October, 2017 to February, 2018. Patients recruited to vHR received intravenous LR (COMPOUND SODIUM LACTATE INJECTION I. P., Inven Pharmaceutical, MP,India) @3mLkg<sup>-1</sup>hr<sup>-1</sup> during the procedure, with 20cc/kg bolus immediately afterward, and then @3 mLkg<sup>-1</sup>hr<sup>-1</sup> for another eight hours. Patients randomized to rectal Indomethacin received a per-rectal suppository (Indomethacin Suppository 100MgB.P., Galen Pharmaceutical, Gujrat,INDIA) immediately after completion of ERCP. The primary outcome was incidence of post-ERCP Pancreatitis (PEP) as defined by Cotton's criteria. Secondary outcomes were: 1) incidence of post-ERCP pain; 2) Severity of PEP; 3) Clinical volume overload; 4) incidence and severity of other post-ERCP complications; and 7) death within seven days. Fisher's exact test and Student t test were calculated.

**Results** 352/521 patients were randomized, 178 patients received vHR and 174 patients per-rectal Indomethacin. Baseline details and ERCP outcomes were not different between two groups. Precutting was done in 104(29.5%), inadvertent PD-cannulation in 58(16.5%), mechanical lithotripsy in 11(3.1%). None lost to follow-up. PEP occurred in 6(1.7%) overall, with 1(0.6%) in hydration arm and 5(2.9%) in indomethacin arm (p=0.094); absolute risk reduction 2.3%(95%CI: -0.3%to5%). Three patients developed severe PEP, all in the indomethacin arm. There was no statistically significant difference in between the two groups regarding the secondary outcomes.

**Conclusions** Vigorous peri-procedural hydration LR is non-inferior to post-procedure rectal Indomethacin for prevention of PEP.

## OP16 EUS-GUIDED RADIOFREQUENCY ABLATION MID-TERM RESULTS (MORE THAN TWO YEARS FOLLOW-UP) FOR PANCREATIC NEUROENDOCRINE TUMOR AND PANCREATIC CYSTIC NEOPLASMS

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**DOI** 10.1055/s-0040-1704037

**Aims** Recent management with EUS-guided RFA for pancreatic NET and IPMN was recently investigated in a multicenter prospective study, The results were provided at one year-follow-up. We decided to extent the follow-up to at least two years. The primary endpoint of the study was the efficacy of EUS-RFA and the recurrence was the secondary endpoint.

**Methods** 30 patients were included, with NET less than 2 cm or branch duct IPMN with worrisome features or mucinous cystadenoma. EUS RFA was performed with a cooled 18G needle (Starmed-Taewong, Korea). The patients were prospectively followed at least 2 years.

**Results** The mean duration of the follow-up was 33 months (25-48). We included 12 patients with an average NET size of 13.4 mm (10 to 20 mm) and 17 patients with a cystic tumor (16 IPMN, 1 CM) with an average size of 29.1 mm (9 to 60 mm). 2 deaths occurred during the follow-up: the first due to HCC and the second due to a stroke. There was no delayed complications (including pancreatic ductal stenosis, peripancreatic collection or vascular complication).

At the end of the follow-up, 13 out of 14 NET (in 12 patients) were in complete response. A non responder patient received a second session of RFA. For cystic tumors, 11 patients were in complete response, 1 patient continued to have a lesion whose diameter was reduced by more than 50%. Of the 5 patients considered as treatment failure, 2 had no change in size, 2 received a second session of RFA and one died of HCC.

No recurrence happened among patients with an initial wall nodule or wall thickening.

**Conclusions** Pancreatic EUS-RFA for NET or cystic tumors showed excellent results with a follow-up of more than 2 years, without delayed complication or recurrence after complete response. This data should be evaluated with a longer follow-up.

Thursday, April 23, 2020  
Colorectal Cancer (CRC) Screening  
(WEO-ESGE joint session)

14:30 – 16:00  
Liffey Hall 2

### OP17 HIGH INCIDENCE OF SERRATED LESIONS AND SERRATED POLYPOSIS SYNDROME IN A FIT POSITIVE SCREENING POPULATION

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DOI 10.1055/s-0040-1704038

**Aims** To determine the incidence of serrated lesions in a non-academic hospital with special interest in serrated neoplasia.

**Methods** Prospectively collected FIT positive screening cohort from August 2018 until November 2019 were studied to assess serrated lesions and serrated polyposis syndrome.

**Results** We performed 222 screening colonoscopies after a positive FIT in which we found 304 SSL with at least one SSL in 98 patients (44,14%). Of these, 25 were advanced SSL (>10mm or with dysplasia) in 14 patients (6,31%) and 53 clinically relevant SSL (advanced SSL or >5mm and proximal to splenic flexure) in 28 patients (12,61%).

5 patients (2,25%) were diagnosed of serrated polyposis syndrome in the screening colonoscopy. All of them met criterion I of the 2019 WHO classification.

**Conclusions** In a center with special interest in serrated neoplasia, the incidence of serrated lesions (15,1-19,5%), advanced SSL (1,3-1,6%), clinically relevant SSL (2,1-7,9%) and SPS (0,03-0,5%), is greater than the incidence published until now.

Thursday, April 23, 2020  
President's opening session 3

16:30 – 18:00  
Auditorium

### OP18 MULTICENTER PROSPECTIVE RANDOMIZED STUDY TO COMPARE ENDOSCOPIC TREATMENT OF STRICTURES IN CROHN'S DISEASE (CD): SELF-EXPANDING METAL STENTS (SEMS) VS ENDOSCOPIC BALLOON DILATION (EBD). PROTDILAT STUDY

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DOI 10.1055/s-0040-1704039

**Aims: Introduction** EBD is the established endoscopic treatment for short strictures in CD. SEMS have been used for endoscopic treatment in patients that failed to dilate.

**Aims** 1). Efficacy and safety of endoscopic treatment (SEMSvs.EBD) in CD patients with stenosis; 2). Comparative cost study.

**Methods** Randomized, prospective, multicenter clinical trial of CD patients and obstructive symptoms with stenosis < 10cm and refractory to medical treatment. We exclude patients with stenosis previously treated with SEMS and/or EBD in the previous year and with stenosis not accessible to colonoscopy. The efficacy of the endoscopic treatment was defined by the percentage of patients free of a new therapeutic intervention (EBD,SEMS or surgery) due to symptomatic recurrence at one year of follow-up. A direct cost study was done.

**Results** 99 patients were randomized (19 excluded because they did not fulfil the inclusion criteria). Eighty patients, 39 women, with a median age of 45 (IQR:38-54.7) were finally included. The primary treatment was 39SEMS and 41EBD for ITT analysis. Success rate of EBD and SEMS was 80.5% and 51.3%, respectively (AdjustedOR,3.6;95%CI,1.3-10.2;p=0.013). In a subanalysis of patients with strictures >3cm differences between the 2 endoscopic procedures disappeared (EBD:66.7%vs.SEMS:63.6%). The length of the stricture (OR,1.01;95%CI,1.01-1.15;p=0.028) and the initial obstructive symptoms score of the patient (OR,2.91;95%CI,1.23-6.89;p=0.015) were the only factors related with the therapeutic success of EBD. A 6.3% adverse events were reported. The average cost for EBD patient was 893.27 euros (average 1.5dilatations) and for SEMS patients was 1,942.16 euros.

**Conclusions** EBD is more effective than SEMS for CD strictures, with a good safety profile of both treatments. EBD is more cost-effective than SEMS. The length of the stricture and the initial obstructive symptoms of the patient are the only factors related to EBD success. The clinical scenario in which SEMS could be useful is strictures >3 cm. ClinicalTrials.gov NCT 02395354.

### OP19 EUS-FNB WITH VERSUS WITHOUT ROSE: INTERIM ANALYSIS OF AN INTERNATIONAL RANDOMIZED NON-INFERIORITY STUDY

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Medicine, Department of Gastroenterology and Hepatology, Osakasayama, Japan; **9** University Medical Centre, Department of Gastroenterology and Hepatology, Erasmus MC, Rotterdam, Netherlands; **10** University of Virginia Health System, Division of Gastroenterology and Hepatology, Charlottesville, United States of America; **11** Hospital Clínic Barcelona, IDIBAPS, University of Barcelona, Gastrointestinal Department, Barcelona, Spain; **12** Unit of Gastrointestinal Endoscopy, Karolinska University Hospital and Karolinska Institute, Department of Upper GI Diseases, Stockholm, Sweden; **13** Tokyo Medical University, Department of Gastroenterology and Hepatology, Tokyo, Japan; **14** University Hospital of Santiago de Compostela, Department of Gastroenterology and Hepatology, Santiago de Compostela, Spain; **15** G.B. Rossi University Hospital, Department of Diagnostics and Public Health, Verona, Italy; **16** Fondazione Policlinico Universitario A. Gemelli IRCCS, Università Cattolica del Sacro Cuore, Centre for Endoscopic Research Therapeutics and Training (CERTT), Digestive Endoscopy Unit, Roma, Italy  
DOI 10.1055/s-0040-1704040

**Aims** To assess if the need of rapid on-site evaluation (ROSE) during EUS-FNB of solid pancreatic lesions (SPLs) can be overcome by the high diagnostic accuracy of new devices.

**Methods** Randomized non-inferiority study comparing EUS-FNB+ROSE vs. EUS-FNB alone in patients with SPLs. The procedures were done using one of the available FNB needles (SharkCore22G, Acquire22G, ProCore20G) with 3 needle passes performed and the touch imprint cytology technique (TIC) utilized for ROSE. In the ROSE arm when adequacy with TIC was reached, additional passes up to an overall of 3 were performed for histological evaluation. Samples suspicious for malignancy were considered false negative when final diagnosis of malignancy was ascertained. Diagnostic accuracy was measured against definitive surgical pathology or after a clinical course of at least six months congruent with the diagnosis. Secondary endpoints included: safety, presence of tissue core, quality of specimens and time of the sampling procedure.

**Results** We completed the enrollment of the whole 800 patients needed to finish the study. At present, 327 patients have completed the follow-up (193 males, mean age 66.6±11). Patients' and lesions' characteristics in the two arms were similar. Comparable diagnostic accuracies were obtained with or without ROSE [90.3% (95% CI 84.7-94.4) vs 91.3% (95% CI 85.9-95.2), respectively]. Safety, presence of tissue core, and sample quality of histological specimens were similar in the two groups. The mean time of the sampling procedure was significantly longer in the ROSE group (16.1±7.2 vs 11.5±6.0 minutes,  $p < 0.0001$ ). Significantly higher rate of tissue core procurement was obtained using the end-cutting needles than the side-fenestrated needle (48.9% vs 75% vs 69.7% using Procore 20G, SharkCore 22G, and Acquire 22G, respectively,  $p < 0.0001$ ).

**Conclusions** Our preliminary results show that ROSE is not associated with better accuracy of EUS-FNB alone and its utilization increases the duration of the procedure.

## OP20 ENVIRONMENTAL IMPACT OF DISPOSABLE ENDOSCOPIC EQUIPMENT AND ENDOSCOPES - A VOLUMETRIC ANALYSIS

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DOI 10.1055/s-0040-1704041

**Aims** Health care's climate footprint contributes 5% to Europe's greenhouse gas emissions (8% in the US). We aimed to quantify the environmental impact of single use endoscopic devices and materials.

► **Tab. 1** Waste generated during endoscopic procedures.

	Low volume center	Medium volume center	High volume center	U.S.
Endoscopies/year, n	1500	6000	13000	20 million
Waste/procedure, mean	0.02 m <sup>3</sup>	0.04 m <sup>3</sup>	0.03 m <sup>3</sup>	0.03 m <sup>3</sup>
Waste/year	28 m <sup>3</sup>	227 m <sup>3</sup>	390 m <sup>3</sup>	532918 m <sup>3</sup>
Waste/year that would fill single-family houses, n (range)	0.1	0.4	0.7	980 (696-1393)

**Methods** We documented the daily volume of disposable material used during endoscopic procedures at a small, medium and large size hospital. We estimated the volume of non-recycled waste (landfill) and calculated its volume per endoscopy, per annum for each center, and extrapolated it to the annual procedure volume in the US (20 Million), using low and high waste estimates as minimum and maximum ranges.

**Results** The volume of endoscopic waste filled annually between 375 and 5151 trash bags (114 L) occupying 28 to 390 m<sup>3</sup> between the low and high-volume centers. Nationally, endoscopic procedures would produce 532918 m<sup>3</sup> waste per year in the US, which would fill 980 single-family houses. If all colonoscopies and ERCPs were performed with single use endoscopes, it would add 100682 m<sup>3</sup>, and fill 185 single-family houses per year (180 with colonoscopes, 5 with duodenoscopes). Combined the total disposable material would take up 633600 m<sup>3</sup> or fill 1165 single family houses (range 881 to 1578).

**Conclusions** Although limited, this is a first quantitative assessment of the environmental impact of single use material and devices used in endoscopy, showing large amount of waste produced annually. We need to better quantify the environmental impact of endoscopic procedures and waste, which will ultimately affect human health. Any cost-benefit analysis should also consider potential environmental harms.

Thursday, April 23, 2020

ERCP for biliary stones

16:30 – 18:00

Liffey Hall 2

## OP21 THE NATIONAL PERFORMANCE IN THE MANAGEMENT OF COMMON BILE DUCT STONES IN ENGLAND

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DOI 10.1055/s-0040-1704042

**Aims** Common Bile Duct Stones (CBDS) is a common indication for ERCP. There are British Society of Gastroenterology endorsed national standards for clearance rates with the expectation that 75% or more of initial ERCPs for CBDS

should result in stone clearance(1). This paper will examine the NHS data set from all trusts in England to assess the treatment of CBDS.

**Methods** Using ICD-10 codes defined by an accredited clinical coder we examined the Hospital Episode Statistics (HES) data from England from 2013/4 to 2018/9 and selected those who had their initial bile duct stones presentations in 2015/6 to 2016/7. We followed this cohort of patients throughout the period of time from their presentation to the end of 2019 financial year and assessed how many ERCPS each patient underwent. We therefore had 2 years of patients with a primary diagnosis of bile duct stones with at least 2 years of follow up. All data is limited to NHS hospitals.

**Results** Over the 4 year follow up period 86,602 of the 183,503 ERCPS (47.2%) done were for CBDS. Within the 2015/6 to 2016/7 cohort was made of 37,468 patients who needed 55,556 ERCPS. 26,146 had only 1 ERCP, which, at best, represents a CBDS clearance rate at first ERCP of 69.8%. In addition, the remaining 11,322 (30.2%) patients required 29,410 ERCPS, demonstrating that 52.9% of ERCPS undertaken for those who had an initial CBDS presentation between 2015/16 and 2016/17 were repeat procedures. There is a significant regional as well as trust variation in those needing more than 1 ERCP for CBDS.

**Conclusions** We are falling below the minimum standards required for stone clearance at ERCP, leading to findings that more than 50% of ERCPS for CBDS are repeat procedures. The reasons for this require further study, but the burden of cost is significant

### OP23 DISTAL BILIARY STENT MIGRATION IN PATIENTS WITH IRRETRIEVABLE COMMON BILE DUCT STONES: A RETROSPECTIVE COMPARISON BETWEEN STRAIGHT AND DOUBLE-PIGTAIL STENTS

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**Institute** 1 Venizeleio General Hospital, Department of Gastroenterology, Heraklion, Greece; 2 Konstantopouleio General Hospital, Department of Gastroenterology, Athens, Greece; 3 Biostatistics Lab, School of Medicine, University of Crete, Department of Social Medicine, Heraklion, Greece

DOI 10.1055/s-0040-1704043

**Aims** Migration of biliary stents is a well-documented problem. Different types of plastic stents (straight or double-pigtail) are used for biliary drainage in patients with irretrievable common bile duct stones (ICBDS). Due to their physical characteristics, double-pigtail stents are expected to migrate less frequently; however, comparisons remain scarce. We aimed to compare the distal migration rate between patients who received either straight or double-pigtail stents in the biliary drainage of ICBDS.

**Methods** Consecutive patients with ICBDS who received plastic biliary stents at the Venizeleio General Hospital between 2009 and 2019 were retrospectively reviewed. Distal migration was confirmed on follow-up endoscopy when the stent was no longer present at the papillary orifice nor fluoroscopically visible in the bile duct.

**Results** Among 4524 ERCPS, a total of 618 biliary plastic stent placement procedures (410 patients) were performed for ICBDS: 289 (46.8%) with a straight stent (Group A) and 329 (53.2%) with a double-pigtail stent (Group B). No significant differences were observed between the two groups concerning age, gender, bile duct diameter, placement of single vs multiple biliary stents, as well as use of endoscopic sphincterotomy and balloon sphincteroplasty. The median time period of repeated endoscopy was 7 months (IQR 4-12 months). The rate of distal stent migration was 17.3% (50/289) in group A and 27.4% (90/329) in group B (p=0.003). By Kaplan-Meier analysis, freedom from distal stent migration was 91.6% and 82.7% at 6 months, 78.6% and 72.3% at 12 months, and 73% and 55% at 18 months, for groups A and B respectively (P=0.004, log-rank).

**Conclusions** Contrary to common perception, pigtail stents are more likely to migrate distally compared with straight stents in patients with ICBDS.

### OP24 EFFICACY AND SAFETY OF DILATION-ASSISTED STONE EXTRACTION (DASE) AFTER ENDOSCOPIC SPHINCTEROTOMY (EST) FOR DIFFICULT BILIARY STONES: DATA FROM A SERIES IN A SINGLE REFERRAL CENTER

**Authors** Scimeca D<sup>1</sup>, Mastro ML<sup>1</sup>, Mocciaro F<sup>1</sup>, Bonaccorso A<sup>1</sup>, Conte E<sup>1</sup>, Russo G<sup>1</sup>, Mitri RD<sup>1</sup>

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DOI 10.1055/s-0040-1704044

**Aims** Endoscopic Sphincterotomy (EST) may not be effective for treating "difficult" common bile duct (CBD) stones or cases of complex bile duct access. Performing Dilation-Assisted Stone Extraction (DASE) after EST enhances technical success in stones extraction.

This study was designed to evaluate efficacy and safety of DASE associated to EST in "naïve" papilla and DASE in patients previously treated with EST.

**Methods** From January 2014 to September 2019 we collected data on 87 patients treated with DASE in our referral center. Technical success was obtained when the balloon was placed through the papilla and inflated until final diameter for an adequate time (>30 seconds) and stones were completely removed.

**Results** Forty-two males (48.3%) and 45 females (51.7%) were enrolled. Mean age was 72.5±12.1 years. Fifty-four patients (62.1%) were "naïve", while 33 (37.9%) previously underwent EST.

Indications to DASE were: difficult CBD stones in 53 cases (60.9%), periampullary diverticulum in 15 (17.2%), difficult CBD cannulation in 11 (12.7%), altered anatomy in 5 (5.8%), others in 3 (3.4%). Technical success was achieved in 84 patients (96.6%).

Complications occurred in 21 cases (24.1%): 12/21 (57.1%) were intraprocedural, 7/21 (33.3%) were early (< 24h) and 2/21 (9.6%) were tardive (>24h). Complications were: 14 bleedings (66.7%), 6 post-ERCP pancreatitis (28.5%), 1 leak (4.8%). The leakage was immediately treated positioning metallic covered biliary stent. All the post-ERCP pancreatitis were clinically managed. Among the bleedings, in 7 cases (50.0%) no intervention was required; 6 cases (42.9%) were endoscopically managed; only 1 patient (7.1%) underwent interventional radiology. At univariable analysis, only previous EST was related to higher risk of complications (p=0.01).

**Conclusions** DASE associated to EST could be considered an alternative, safe and valid technique in difficult cases of biliary stones, in which EST alone would not be effective. Complication rate was quite low and corresponds to that previously reported in literature.

### OP25 ENDOSCOPIC TREATMENT OF PATIENTS WITH «DIFFICULT» BILE DUCT STONE DISEASE

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DOI 10.1055/s-0040-1704045

**Aims** To estimate the possibility of mechanical lithotripsy (ML), endoscopic balloon dilation (BD) of post endoscopic sphincterotomy area (post-ERCP area) or combination of these methods in treatment of «difficult» common bile duct stones.

**Methods** Retrospective single center study of endoscopic management of difficult bile duct stones was held at the Pirogov Russian Medical University at the Moscow City Hospital #31 from January 2013 to July 2019.

There were 1356 cases of common bile duct stones including 247 (18,2%) cases of «difficult» bile stone disease. There were less than 3 stones in 167 cases

(67,6%). Mean size of the largest stone was 16,9 ±5,5 mm. Mean balloon size used for BD was 14,21±3,1 mm (10-20 mm).

**Results** General success rate was 93,5% (231). Complete clearance after index procedure was achieved in 224 (90,7%) cases. General complication rate was 3,2%, mortality rate - 1,6%.

ML was carried out in 23,5% (58) of cases, success after first procedure was achieved in 87,9%(51) of cases. Complication rate was 6,9%. Complications included 1 case of perforation, 3 case of post-ERCP pancreatitis. Mortality rate - 3,5%.

BD was performed in 49,8% (123) of cases, success rate after index procedure was 92,7% (114). Complication rate was 3,3%. Complications after BD included 2 cases of post-EPT bleeding, 1 case of perforation, 1 case of post-ERCP pancreatitis. Mortality rate was 0,81% (one death).

In cases of BD failure, it was combined with ML (66, 26,7%). Success rate after index procedure was 89,4% (59).

Complication rate was 3% (2). Mortality rate - 1,5% (1).

**Conclusions** Balloon dilation of the post-ERCP area in treatment of «difficult» common bile duct stones is more effective and less traumatic procedure than ML. In cases, when BD of post-ERCP area is unsuccessful, combination of BD with ML may help to achieve total common bile duct clearance with comparable complication level.

## OP26 RISK FACTORS FOR SUCCESS AND COMPLICATIONS AFTER ENDOSCOPIC SPHINCTEROTOMY FOR BILE DUCT STONES: A 17- YEAR EXPERIENCE WITH 2137 CASES

**Authors** Sanmartin IDA<sup>1</sup>, Pereira Lima JC<sup>2</sup>, Pereira Lima G<sup>3</sup>, Avila IA<sup>4</sup>

**Institute** 1 Hospital Santa Casa de Misericordia de Porto Alegre, Gastroenterology and Endoscopy, Porto Alegre, Brazil; 2 Universidade federal de Ciências da Saúde de Porto Alegre, Endoscopy, Porto Alegre, Brazil; 3 Hospital Santa Casa de Misericordia de Porto Alegre, Porto Alegre, Brazil; 4 Hospital Santa Inés, Cuenca, Ecuador  
DOI 10.1055/s-0040-1704046

**Aims** Risk factors for post-ERCP complications are well-studied. However, risk factors for complications and success after endoscopic sphincterotomy for stone management, the main indication of ERCP, are poorly-determined. The aim of this study is to verify risk factors for mortality, complications and success after sphincterotomy (EST)with attempted stone retrieval.

**Methods** A multivariate analysis was carried out in a prospectively collected dataset of ERCPs performed from 1997 to 2013.

**Results** A total of 5226 ERCPs were performed in 17 years, of which 2137 were in patients with bile duct stones (1458 women and 679 men; mean age = 57 years) who underwent EST with attempted stone removal. There were 171 (8%) complications- acute pancreatitis in 87 (4.1%), bleeding, 48 (2.2%), cholangitis in 21. (1%), perforation in 7 (0.3%) and other complications in 8 (0.4%) cases, with mortality rate of 0.6%. Successful stone(s) removal was obtained in 2028 patients (94.9%). At clinical presentation, 6,5% (138) had cholangitis, 9,5% had acute pancreatitis (203). Pre-cut was performed in 191 cases (9.4%). On multivariate analysis, procedure-related mortality was associated with age > 60 yr. (1 vs. 0.2%), cholangitis (4.3 vs.0.3%) and EST-related complications (5.8 vs. 0.2%). Complications were associated with unsuccessful stone removal (13.4 vs. 7.5%) and difficult cannulation (13.9 vs. 5.4%). An unsuccessful EST was independently related to difficult cannulation(86.2 vs. 98.7%), precutting (79.4 vs. 96.4%) and pos-EST complications (86.5 vs. 95.6%).

**Conclusions** The main risk factors for complications after EST with attempted stone removal are delayed bile duct cannulation and failed stone retrieval. EST-associated mortality is higher in older patients, those who presented with an EST-related complication or those who presented initially with cholangitis. Difficult cannulation, EST-related complications and pre-cut were associated with an unsuccessful procedure. In this series, outpatient EST with attempted stone retrieval showed to be as safe as performing the procedure in hospitalized patients.

## OP27 THE NEED FOR LAPAROSCOPIC CHOLECYSTECTOMY IN THE PATIENT WITHOUT GB STONE AFTER CBD STONE CLEARANCE

**Authors** Shin DW<sup>1</sup>, Lee JW<sup>1</sup>, Jang WY<sup>1</sup>, Kim HJ<sup>1</sup>, Shin KI<sup>1</sup>, Lee SY<sup>1</sup>, Cho KB<sup>1</sup>  
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DOI 10.1055/s-0040-1704047

**Aims** Cholecystectomy after endoscopic removal of the common bile duct stones is generally recommended to prevent recurrence of biliary complications. The rate of following these recommendation is low. The aim of this study was to evaluate the need for laparoscopic cholecystectomy in the patient without GB stone after CBD stone clearance.

**Methods** From January 2009 to December 2018, we retrospectively analyzed 2150 patients with EST and CBD stone removal at Keimyung University Hospital. We excluded 808 patients who were followed for less than 3 months. 1342 patients were enrolled in this study. We divided the patient into four groups according to GB status. 342 patients had previously undergone cholecystectomy (Group A), 465 had a calculous GB and underwent cholecystectomy after EST (Group B), 243 had a calculous GB in situ (Group C), and 292 had an acalculous GB in situ (Group D). Long term complications, including recurrence of CBD and cholecystitis were evaluated.

**Results** During the median follow up of 37 months (range 3-128months) total biliary complication occurred in 250 patients (25%). The rate of CBD stone recurrence rate was higher in Group C (23.0%) than in Group B(16.8%) (p=0.043). Cumulative total biliary complication rate was higher in Group C (46.1%) than Group D (20.5%) (p< 0.001). Cholecystitis occurred more frequently in Group C (22.9%) than in Group D (2.4%) (p< 0.001). There was no significant difference in the rate of recurrent CBD stone between Group B (16.8%) and Group D (18.2%) (p=0.626) and rate of total biliary complication between Group B (16.8%) and Group D (20.5%) (p=0.191).

**Conclusions** No significant difference in CBD stone recurrence rate and total biliary complication between cholecystectomy group and acalculous GB in situ group. Cholecystitis is more common in patients with GB stone. Patients without GB stone do not require unconditional preventive cholecystectomy.

## OP28V WHEN NATURE TRIES TO FIND ITS WAY: AN UNUSUAL CASE OF CHOLEDOCHO-DUODENAL FISTULA COMPLICATING A “DIFFICULT” CHOLEDOCHOLITHIASIS

**Authors** Mitri RD<sup>1</sup>, Scimeca D<sup>1</sup>, Bonaccorso A<sup>1</sup>, Mastro ML<sup>1</sup>, Conte E<sup>1</sup>, Russo G<sup>1</sup>, Mocciano F<sup>1</sup>

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DOI 10.1055/s-0040-1704048

During ERCP for choledocholithiasis, we found a bulging near the major papilla, with an orifice draining bile, suspected for biliary fistula. Contrast-medium injection through the orifice showed a stone impacted behind the duodenal wall, in a false lumen communicating with CBD by fistulous tract; CBD was occupied by multiple large stones.

After precutting the sclerotic and “uninhabited” papilla, CBD cannulation confirmed “difficult” choledocholithiasis with fistula in the distal tract. Using DASE technique, complete CBD toilette with balloon was made. Fistulous orifice was enlarged using a cutting needle, with expulsion of the stone impacted. Cutting gap was repaired positioning two endoclips.

## OP29V POST-CHOLECYSTECTOMY CLIP AS A NIDUS FOR COMMON BILE DUCT STONE FORMATION

**Authors** Miguel I<sup>1</sup>, Pijoan E<sup>1</sup>, Torres N<sup>1</sup>, Bazaga S<sup>1</sup>, Torres G<sup>1</sup>, Zaragoza N<sup>1</sup>, Miñana J M<sup>a1</sup>, Garreta J<sup>1</sup>, Reñe J M<sup>a1</sup>, Gonzalez-Huix F<sup>1</sup>

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DOI 10.1055/s-0040-1704049

86-year-old woman who underwent cholecystectomy and ERCP for choledocholithiasis performing sphincterotomy and stone extraction. She presented to our center for epigastric pain without infection signs, finding common bile duct (CBD) dilatation and choledocholithiasis in MR-cholangiopancreatography. ERCP was performed, finding dilatation of common bile duct (15-17mm) and a 12-15mm stone with radiopaque content like surgical clips, being unable to define if it was in CBD or cystic duct. After failed attempt of standard stone extraction, an endoscopic papillary large-balloon dilatation was performed and stone removed with balloon catheter. Stone was recovered and analysed, confirming the presence of a surgical clip inside.

Friday, April 24, 2020  
Endoscopy in flames

08:30 – 10:30  
Liffey Hall 1

### OP30 THE FIRST REAL-LIFE MULTICENTRE, PROSPECTIVE VALIDATION STUDY OF THE ELECTRONIC CHROMOENDOSCOPY SCORING SYSTEM (PICASSO-THE PADDINGTON INTERNATIONAL VIRTUAL CHROMOENDOSCOPY SCORE) AND ITS OUTCOME IN ULCERATIVE COLITIS

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DOI 10.1055/s-0040-1704050

**Aims** Mucosal healing is an important goal in the treatment of ulcerative colitis (UC). The newly published PICaSSO score characterises subtle mucosal and vascular changes and defines mucosal healing. We aimed to validate in real-life the PICaSSO score and assess its ability to predict relapse.

**Methods** Patients with UC were prospectively recruited from 11 international centres. Participating endoscopists experienced in IBD received training on PICaSSO before starting the study. The rectum and sigmoid were examined using iScan 1,2&3 (Pentax, Japan) and inflammatory activity was assessed using UCEIS and PICaSSO. Biopsies were taken for histological assessment using Roberts Histological Index (RHI) and Nancy. Follow up data was obtained at 12 months.

**Results** A total of 278 patients were recruited. The diagnostic performance in predicting histologic healing is shown in table 1. When using PICaSSO score of  $\leq 3$  for mucosal and vascular architecture the AUROC to predict healing by RHI is 0.79 (95% CI 0.74-0.85) and 0.73 (95% CI 0.68-0.80) respectively and when using the Nancy score the AUROC is 0.78 (95% CI 0.72-0.84) and 0.77 (0.71-0.84). A total PICaSSO score of  $\leq 8$  and UCEIS score of  $\leq 1$  predicts remission at 12 months with an AUROC of 0.73 (0.65-0.80) and 0.71 (0.64-0.79). Kaplan-Meier curve shows favourable survival probability without relapse with a PICASSO score of  $\leq 8$ .

**Conclusions** This real-life validation study shows the PICaSSO score can predict accurately histological healing and long-term remission and can be a useful tool in the management of UC.

### OP31 SESSILE SERRATED LESIONS IN INFLAMMATORY BOWEL DISEASE - A RETROSPECTIVE STUDY IN A TERTIARY CENTRE

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**Aims** Sessile serrated lesions (SSLs) are increasingly recognised at colonoscopy. However, their significance in inflammatory bowel disease (IBD) is unclear. We examined the clinicopathological features and outcome of IBD patients with SSLs.

**Methods** Patients undergoing IBD surveillance colonoscopy from November 2008-2018 were identified. Patients with polyposis syndromes and previous colorectal surgery were excluded. 1003 patients were included. Demographics and procedural data including histology reports were reviewed.

**Results** Forty-eight patients with IBD had 61 SSLs (ulcerative colitis n=46, Crohn's colitis n=2). Twenty-six patients (54%) were female. The median age at identification of index SSL was 63 years (range 26-81). Thirty-one (65%) patients had pancolitis. Thirty-eight (62%) SSLs were in the right colon and 13 (21%) were found outside an area of previously inflamed bowel. Thirty-six patients (75%) had no previous history of dysplasia.

The median SSL size was 8mm (range 2-37mm) and 49 (80%) had Paris IIa morphology. Dysplasia was present in 17 (28%) SSLs. SSLs with dysplasia were significantly larger than SSLs without dysplasia (mean size 14mm v 8mm,  $p = 0.003$ ). Fifty-nine SSLs were endoscopically resected with no reported adverse events: cold biopsy (4), cold snare (37), EMR (15), ESD (3). Twelve SSLs with dysplasia (71%) were endoscopically resected en-bloc.

► **Tab. 1** Sensitivity (a), specificity (b) and accuracy (c) in predicting histological healing

Endoscopic score	RHI ( $\leq 3$ ) (95%CI)	Nancy ( $\leq 1$ ) (95%CI)
PICaSSO total score ( $\leq 8$ ) a, b, c	94.6%(71.9-97.6), 57.7%(32.7-66.9), 79.9%(70.0-93.5)	78.8%(37.4-86.6), 64.8%(28.5-73.6), 67.6%(63.3-71.2)
PICaSSO Mucosal architecture ( $\leq 3$ ) a, b, c	93.4%(81.8-97.6), 56.8%(41.4-66.7), 78.8%(72.4-82.7)	97.1%(56.5-99.4), 63.9%(35.6-73.1), 84.2%(72.9-88.0)
PICaSSO Vascular Architecture ( $\leq 3$ ) a, b, c	74.9%(51.2-84.5), 65.8%(55.1-74.2), 71.2%(67.0-74.6)	78.8%(37.4-86.6), 73.1%(61.8-80.6), 76.6%(72.0-79.6)
UCEIS Score ( $\leq 1$ ) a, b, c	91.6%(77.6-95.8), 60.4%(45.0-68.5), 79.1%(73.3-82.6)	93.5%(57.8-97.8), 64.8%(53.1-73.1), 82.3%(77.9-85.6)

Twelve patients (25%) had synchronous dysplasia, two of which underwent colectomy due to high grade dysplasia and adenocarcinoma respectively. Follow up endoscopic data was available for 29 patients over a median (IQR) duration of 3 years (2-4), with metachronous dysplasia occurring in 12 patients (41%), of which eight were multifocal.

**Conclusions** Rates of dysplasia in IBD SSLs are higher in our cohort than reported in sporadic SSLs/serrated polyposis. High rates of metachronous dysplasia were seen in IBD patients with SSLs. Further studies are required to investigate if SSLs in IBD are associated with increased risk of advanced neoplasia.

## OP32 THE ASSOCIATION OF ANTI-TUMOR NECROSIS FACTOR THERAPY AND COLECTOMY WITH PANCREATIC ADENOCARCINOMA IN ULCERATIVE COLITIS: FINDINGS OF A NATIONWIDE EPIDEMIOLOGICAL STUDY

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DOI 10.1055/s-0040-1704052

**Aims** Previous studies have reported an increased rate of pancreatic adenocarcinoma (PAC) in ulcerative colitis (UC). The pathophysiology remains unclear. We sought to evaluate the epidemiology of PAC in UC in a large database.

**Methods** A database (Explorys), consisting of electronic records from 26 US healthcare systems, was surveyed. Patients with new Systematized Nomenclature of Medicine-Clinical Terms diagnosis of PAC after UC diagnosis were identified (1999-2019). Gender-, race-, age-distributions and associations were described using multivariate analysis.

**Results** Of the 64,151,840 in the database, 155,900 (0.24%) with UC and 52,880 (0.08%) with PAC were identified. Within the UC cohort, 270 (0.17%) developed new diagnosis of PAC. Patients with UC were more likely to develop PAC when compared to patients without IBD [OR: 2.11; 95% CI: 1.87 to 2.38; p< 0.0001]. Seventy (25.93%) patients underwent colectomy with 40 prior to PAC. Multivariate analysis is presented in table. In univariate analysis, UC patients with PAC were more likely to have a history cholangitis [OR: 6.29; 95% CI: 4.79 to 8.27; p< 0.0001], c.difficile [OR: 2.61; 95% CI: 1.87 to 3.66; p< 0.0001], beta-lactam [OR: 5.77; 95% CI: 4.40 to 7.58; p< 0.0001], cephalosporins [OR: 3.26; 95% CI: 2.53 to 4.20; p< 0.0001] and quinolones exposure [OR: 5.14; 95% CI: 3.92 to 6.75; p< 0.0001].

**Conclusions** We found that patients with UC were two times more likely to develop PAC. UC patients exposed to colectomy and anti-TNF were more likely to develop PAC. The associations between PAC and UC are likely related to disease severity and microbiome changes.

► **Tab. 1** Multivariate regression model with pancreatic adenocarcinoma as outcome amongst ulcerative colitis patients.

	Odds ratio [95% CI]		Odds ratio [95% CI]
Age >65	3.55 [3.15-4.00]	Acute pancreatitis	4.44 [3.78-5.21]
Male gender	1.28 [1.14-1.44]	Chronic pancreatitis	5.73 [4.77-6.86]
Non-Caucasian	2.97 [2.60-3.39]	Anti-TNF therapy	1.58 [1.34-1.85]
Smoking/alcohol	1.59 [1.39-1.81]	Colectomy	3.23 [2.77-3.77]

## OP33 COMPARISON OF ENDOSCOPIC HEALING, MUCOSAL BARRIER HEALING AND HISTOLOGIC HEALING FOR THE PREDICTION OF MAJOR CLINICAL EVENTS IN PATIENTS WITH INFLAMMATORY BOWEL DISEASES

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DOI 10.1055/s-0040-1704053

**Aims** Probe-based confocal laser endomicroscopy (pCLE) enables microscopic imaging during ongoing endoscopy and can visualize mucosal barrier dysfunction (MBD) in IBD patients. Herein, we compared the prognostic value of endoscopic healing, mucosal barrier healing by pCLE and histologic healing for the prediction of major clinical events (MCE) in IBD patients.

**Methods** 180 IBD patients in clinical and endoscopic remission were prospectively enrolled. At study inclusion, HD WLE was performed to assess endoscopic disease activity and MBD was assessed by pCLE. In parallel, biopsies from each colonic segment were obtained for histopathologic scoring using established scores. Patients were followed-up for at least 12 months during which major clinical events (MCE: IBD-related hospitalization, need for surgery, need for initiation of systemic corticosteroids, immunosuppressants or biologics, escalation of existing biologic therapy) were recorded.

**Results** At the time of abstract submission, 104 IBD patients (38 UC, 68 CD) had finished follow-up of 12 months. In CD, assessment of MBD by pCLE exhibited an overall accuracy for predicting MCE of 84% with sensitivity, specificity, positive and negative prediction of 88%, 83%, 95% and 65%, respectively. Endoscopic healing and histologic healing were less accurate, less sensitive and also less specific in predicting MCE in CD patients (Endoscopic healing: accuracy: 55%, sensitivity: 39%, specificity: 71%; histologic healing: accuracy: 50%, sensitivity: 36%, specificity: 78%). Likewise, in UC, with an accuracy of 80%, a sensitivity of 88% and a NPV of 95%, assessing MBD by pCLE had a higher diagnostic performance for the prediction of MCE as compared to endoscopic and histologic healing (Endoscopic healing: accuracy: 71%, sensitivity: 65%, NPV: 68%; histologic healing: accuracy: 72%, sensitivity: 67%, NPV: 67%).

**Conclusions** By assessing MBD in vivo, pCLE allows predicting MCE in IBD patients in clinical endoscopic remission with high sensitivity and seems to outcompete endoscopic and histologic healing in predicting longterm outcome.

## OP34 INTRALESIONAL INJECTION OF ADALIMUMAB IN INTESTINAL STRICTURES OF PATIENTS WITH CROHN'S DISEASE: A RANDOMIZED, MULTICENTER, PROSPECTIVE CLINICAL TRIAL

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DOI 10.1055/s-0040-1704054

**Aims** Intestinal strictures in patients with Crohn's disease (CD) represent a challenge due to their low response rate to medical therapy and high recurrence after endoscopic or surgical treatment. The intralesional injection of anti-TNF drugs is an option not fully investigated.

The primary endpoint was to evaluate response rate to endoscopic dilation (ED) and intralesional injection of adalimumab (ADA) or placebo in patients with CD and intestinal strictures. The secondary endpoint was to evaluate serum ADA levels and anti-ADA antibodies concentration in our cohort.

**Methods** A multicenter clinical trial was conducted in 14 hospitals. Patients with CD and intestinal strictures amenable to ED without previous anti-TNF treatment were enrolled. Patients were randomized to placebo or intralesional ADA, associated to ED and received a 52-week clinical follow-up. A second endoscopy was performed at week 8; the passage of the endoscope through the stricture was considered endoscopic response to treatment.

**Results** Of 102 patients enrolled, 26 met the inclusion criteria and 5 of them were screening failure. Twenty-one patients were finally included in the analysis (43% females; mean age 49.8±12.9 years). After randomization, 9 patients received intralesional placebo + ED and 12 patients intralesional ADA + ED resulting in an endoscopic response rate at week 8 of 66% and 50%, respectively ( $p=0.4$ ). After one injection, ADA serum levels increased from 4 hours to one week after the injection and decreased at week 8. Two patients (9.5%) developed anti-ADA antibodies during follow-up.

**Conclusions** A single intralesional injection of ADA associated to ED is not more effective than ED alone. Prospective studies with a larger sample size and, probably, repeated injections of ADA might be useful to clarify the real role of this therapeutic strategy.

### OP35 ENDOSCOPIC STRICTUROTOMY - A NOVEL THERAPEUTIC MODALITY FOR IBD-RELATED STRICTURES: FIRST EUROPEAN EXPERIENCE

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DOI 10.1055/s-0040-1704055

**Aims** Strictures, both primary and secondary anastomotic strictures, are common complications in patients with inflammatory bowel diseases (IBD) especially Crohn's disease (CD). Balloon dilation has been the gold standard in the endoscopic treatment of these strictures. Endoscopic stricturotomy (EST) represent a promising novel approach, however, the data published on this method so far is limited to a single US center.

**Methods** All ESTs performed in IBD patients between September 2018 and November 2019 in our tertiary IBD center were included. Data on demographics, disease characteristics, procedure details and outcomes were analyzed. Technical success was defined as an ability to pass the scope through the stricture following the procedure.

**Results** In total, 46 procedures were performed in 39 patients (34 with Crohn's disease, CD, and 5 with ulcerative colitis, UC) Among these 38.5% were males. Mean age was 43.5±10.9 years and mean disease duration was 17.4±9.9 years. Single EST was done in 82.1% of patients, while 17.9% required multiple procedures. Most common location of stricture was surgical anastomosis site (43, 93.5%), while remaining 3 were located at anal canal. Anastomotic strictures included ileo-colonic (71.7%), ileo-rectal (4.3%), and ileal pouch-anal (17.4%) anastomoses. Previous endoscopic balloon dilation (EBD) was attempted in 78.3% cases. Technical success was achieved in 42 ESTs (91.3%), complications occurred in two cases (both delayed bleeding, managed conservatively). After the mean

follow-up time of 8.2±4.3 months, cumulative probability of reintervention (EST, EBD or surgery) at 6 months was 16.1% (95% CI 1.7-44.2%).

**Conclusions** EST is a novel endoscopic technique, which is both highly efficacious and safe to be performed in patients with IBD-related strictures.

### OP36 LARGE SUPERFICIAL NEOPLASMS IN INFLAMMATORY BOWEL DISEASES: ENDOSCOPIC SUBMUCOSAL DISSECTION STRATEGY

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DOI 10.1055/s-0040-1704056

**Aims** Patients with long-standing active inflammatory bowel diseases (IBD) have an increased risk of colorectal dysplasia. Guidelines recommend endoscopic resection for superficial neoplasms when en bloc is feasible but endoscopic submucosal dissection (ESD) has been reported in small series with no long-term outcomes. Aim was to evaluate ESD clinical outcomes for large IBD superficial neoplasms.

**Methods** Prospective case series of consecutive large ( $\geq 20$  mm) IBD superficial neoplasms within the colitic mucosa referred for ESD. Short-term (en bloc and R0 resection rates) and long-term outcomes (residual and metachronous cancer rates within a minimum 24-month follow-up) were evaluated. Neoplasms were characterized by white light and chromo-endoscopy with narrow band imaging and acetic acid.

**Results** Thirteen patients with 15 superficial neoplasms underwent ESD. Neoplasms features: median size 28 mm (range 20-50 mm), nonpolypoid in 14 (93%) (LST-NG in 4), scar in 6 (40%), in the rectum and left colon in 9 (60%). Margins were delineated by acetic acid in 7 (47%). En bloc and R0 resections were achieved in 13 (87%) (2 cases with a TEM scar underwent piecemeal EMR) and 12 (80%) cases, respectively. Resection was always curative; T1a cancer in the perineal rectum above the dentate line was diagnosed in one. Submucosal fibrosis was observed in 9 (60%). No early and late adverse events occurred. Median follow-up was 44 months (range 24-54). Minute residual neoplasms were detected in the 2 (13%) EPMR cases and retreated by EMR. Metachronous superficial neoplasms were identified in 5 (33%) cases: 4 underwent endoscopic resection, 1 proctocolectomy due to multiple adjacent neoplasms with indistinct margins.

**Conclusions** ESD for IBD neoplasms is feasible but the difficulty gradient is high due to a high prevalence of LST-NG, scars, and SM fibrosis. ESD may avoid surgery but a strict surveillance is essential for a high incidence of metachronous lesions.

### OP37 ENDOSCOPIC SUBMUCOSAL DISSECTION IN IBD PATIENT: WHERE ARE WE?

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DOI 10.1055/s-0040-1704057

**Aims** ESD of neoplastic lesions in IBD patients remains controversial. Data are very limited, with recent, retrospective series, exclusively limited to UC patients. The aim of this study is to clarify the contribution of ESD in IBD patients in terms of curative endoscopic resection. Secondary objectives are rate of complications, technical success, and endoscopic follow-up.

**Methods** Experts French centers in ESD are prospectively recording all of their endoscopic procedures. Retrospectively, we identified 28 IBD patients treated with a colorectal ESD in 7 centers, representing 34 cases. Data were collected from 21 patients until now.

**Results** 25 ESD were included in 21 IBD patients (12 CD/9 UC). Lesions were located mainly on the rectum (60%), and were LST-G (52.6%), LST-NG (42.1%) or pediculated (5.2%), with a mean size of  $44.5 \pm 19$ mm. The mean duration of ESD was 80.5min. The final histology showed 19 LGD, 5 HGD. Monobloc resection and R0 resection were respectively obtained in 95.8% (23/24) and 75% (18/24) of the cases, due to positive lateral margins in 6 patients in LGD. The overall rate of curative endoscopic resection was 75%. There was 1 haemorrhagic complication, and 1 case of perforation operated. During endoscopic FU, 4 patients presented a metachronous neoplastic lesion, including 3 LGD site-specific recurrences (2 patients had anterior R0 resection), 1 case of distant neoplastic lesion. Mucosal fibrosis was noted in 63% (F2), allowing exclusive ESD.

**Conclusions** This is the first series of ESD in IBD patient including CD. It's technically feasible, with no risk of complication compared to a standard population, in an expert center, with curative endoscopic resection in 75%. The difficult technical points are a difficult lateral margin delineation and mucosal fibrosis. Endoscopic FU is fundamental, to allow the detection of metachronous lesions, even in R0 patients.

## OP38 FIRST SURVEILLANCE COLONOSCOPY FOR INFLAMMATORY BOWEL DISEASE - ARE WE GETTING IT RIGHT FROM THE START?

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DOI 10.1055/s-0040-1704058

**Aims** Surveillance for colorectal cancer (CRC) is necessary in patients with inflammatory bowel disease (IBD). Patients with ulcerative colitis (UC) have a similar CRC risk to those with Crohn's colitis (CC). British Society of Gastroenterology (BSG) outline screening recommendations including surveillance intervals and pancolonial dye spraying with targeted biopsies. We aimed to identify reasons why the first surveillance colonoscopy is not being performed as advised.

**Methods** Retrospective study of all IBD colonoscopies over a 7 year period (2011-2018) across two sites at a tertiary London based hospital trust. 214 patients were identified and exclusion criterion was applied (not first surveillance/diagnosis prior to year 2000/PSC/inadequate data). 93 patients were included for analysis.

**Results** 26 (28.0%) surveillance colonoscopies were performed prior to 10 years of diagnosis (ie. before BSG guideline recommendation). 22 (23.7%) surveillance colonoscopies performed after the recommended interval. Dye spray was performed in only 2 patients (2%). Reasons cited for not dying were only given in 4 (4.3%) cases, and included poor bowel prep or active disease. No reason was given in 87 (93%) cases. Targeted biopsies were performed in 24 (25.8%) patients, with random biopsies in 56 (60.2%) patients.

**Conclusions** The first IBD surveillance colonoscopy is only being performed at the correct time interval in approximately 50% of cases with over

a quarter being performed too soon and almost a quarter being performed too late. Pan-colonic dye spray is used in only 2% and targeted biopsies are taken in only 1 in 4 patients. Poor bowel preparation and disease activity do not appear to be limiting factors in the use of dye spray. We conclude that appropriate initial colitis surveillance is not being performed in the majority despite published guidelines. Organisational factors such as sufficient time allocated to dye spray colonoscopy, along with endoscopist skill, may be contributing factors.

## OP39 MUCOSAL CAPILLARY PATTERN RECOGNITION WITH REAL-TIME COMPUTER-BASED IMAGE ANALYSIS DETECTS HISTOLOGICAL REMISSION IN ULCERATIVE COLITIS

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DOI 10.1055/s-0040-1704059

**Aims** The management of Ulcerative Colitis (UC) requires objective targets. Automated endoscopic systems that correlate with histology can be objective and predictive for sustained remission. The infiltration of neutrophils is associated with irregularities of the pericryptal capillaries. We aimed to develop an objective automated endoscopic tool to assess histological remission based on the evaluation of the morphology of the pericryptal capillaries during endoscopy.

**Methods** We used a prototype endoscope with short wave-length monochromatic light from a LED system. This enables to evaluate the superficial ( $< 200\mu\text{m}$ ) mucosal architecture. The image analysis algorithm includes two steps. First, bleeding was assessed by pattern recognition. Samples with bleedings were automatically classified as non-remission. Second, the degree of congestion of the capillaries was measured (maximal localized density estimation after morphological hessian based vessel recognition) to assess an ideal cut off value to identify histological remission (Geboes score (GBS)  $< 2B.1$ ). Consecutive patients with UC were evaluated. To test the reliability of the algorithm and standard endoscopic scores, the results were correlated with the GBS.

**Results** Fifty eight patients with UC (53% male, median age 41y IQR 38-56, disease duration 7.1y IQR 2.4-16.4) with 113 evaluable segments (89% rectum or sigmoid) were included. The correlation between GBS and MES, UCEIS was good ( $r= 0.76, 0.75$  respectively). The automated image analysis algorithm detected histological remission with a high performance (sens 0.79, spec 0.90) compared to UCEIS (sens 0.95, spec 0.69) and MES (sens 0.98, spec 0.61), resulting in a positive predictive value of 0.83, 0.65 and 0.59 for the automated image analysis algorithm, UCEIS and MES respectively. The algorithm detects histological remission with high accuracy (86%).

**Conclusions** Mucosal capillary pattern recognition based on image analysis with short wave-length monochromatic light detected histological remission with high accuracy in UC. This technique provides an objective and quantitative tool to assess histological remission.

## OP40V COLONIC PERFORATION AFTER ROUTINE BIOPSY IN PATIENTS WITH INFLAMMATORY BOWEL DISEASE

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DOI 10.1055/s-0040-1704060

Here we present two cases of colonic perforation after routine biopsy in patients with long-standing inflammatory-bowel-diseases. *In vivo* histology using a latest generation endocytoscope revealed crypt distension and deformity along with inflammatory cell infiltrates. After biopsy in the sigmoid colon with a standard biopsy forceps, small perforations occurred, which were successfully managed by OTS-clipping. Conventional histology additionally showed fibrosis of the lamina propria along with atrophy of the entire colonic wall. Our cases demonstrate that biopsy-related perforation can occur in long-standing IBD without significant disease activity. Therefore, *in vivo* histology might help to minimize perforation risks in IBD patients.

## OP41V BEWARE THE REFRACTORY PROCTITIS IN A YOUNG MALE WITH KNOWN ULCERATIVE COLITIS!

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DOI 10.1055/s-0040-1704061

A 22-years-old homosexual male diagnosed with pancolitis was admitted to hospital with a history of bloody diarrhoea, abdominal pain and tenesmus. He was treated with anti-TNF treatment with an initial good clinical response. However, within 4 weeks, he lost response. Repeated colonoscopy showed severe distal inflammation. Polymerase chain reaction (PCR) for "sexually transmitted infection" (STI) by rectal swab was positive for Chlamydia trachomatis infection. The patient was treated successfully with a one-time dose of IV Azithromycin 1gr. In conclusion, when evaluating an extraordinary course of non-responsive proctitis, consider STIs as a possible cause specially in high risk patients.

Friday, April 24, 2020

08:30 – 10:30

Blood on the tracks

Wicklow Meeting Room 3

## OP42 RISK FACTORS FOR MORTALITY AMONG PATIENTS ADMITTED TO HOSPITAL FOR LOWER GASTROINTESTINAL BLEEDING: A PREDICTIVE MODEL

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DOI 10.1055/s-0040-1704062

**Aims** Lower GI bleeding (LGIB) is a common cause of hospitalization and death. A recent UK multicenter study has developed and validated a risk score for safe outpatient management. However, data on factors associated with mortality in higher risk patients are lacking. Aim of this study was to assess factors associated with mortality and to derive and validate a predictive model.

**Methods** Multicenter, Italian, prospective, observational study was conducted from 1<sup>st</sup> October 2018 to 28<sup>th</sup> October 2019 including adult patients with LGIB (ALIBI study). The study cohort was divided in derivation cohort (from 1<sup>st</sup> October 2018 to 25<sup>th</sup> June 2019) and validation cohort (from 26<sup>th</sup> June to 28<sup>th</sup> October 2019). Logistic regression was performed to identify factors independently related to death, by computing odds ratio (OR) with 95% confidence interval (CI). A predictive model was subsequently derived and validated.

**Results** Overall, 1198 cases of LGIB were collected in 14 hospitals. The derivation and validation cohort included 791 and 407 patients, respectively. In-hospital mortality occurred in 41 (3.4%) patients. Among the derivation cohort, increasing patient age (OR 1.10, CI 1.04-1.17), a higher Charlson Comorbidity Index (OR 1.24, CI 1.04-1.47), bleeding onset during hospitalization (OR 4.06, CI 1.62-10.2) and hemodynamic instability at presentation (OR 4.72, CI 1.87-11.89) were independent risk factors for in-hospital mortality. The model had good discrimination for higher risk of death as denoted by the C statistic (0.85, CI 0.78-0.9 in the derivation cohort; 0.74, CI 0.62-0.85 in the validation cohort) and was well calibrated according to the goodness-of-fit test ( $p=0.725$  and  $p=0.117$ , respectively).

**Conclusions** Elderly patients with multiple comorbidities who develop LGIB during hospitalization and present with hemodynamic instability have a higher mortality risk. We developed and validated a novel clinical predictive model with good discriminative performance to identify patients with LGIB and higher mortality risk.

## OP43 EFFECT OF WEEKEND HOSPITAL ADMISSION ON LOWER GASTROINTESTINAL BLEEDING OUTCOMES

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DOI 10.1055/s-0040-1704063

**Aims** The aim of this study is to investigate whether adverse outcomes for patients admitted with LGB differ depending on weekend versus weekday admission and determine whether any such differences are mediated by the timing of colonoscopy.

**Methods** Retrospective study from January 2013 to December 2017. Time of admission was recorded defining weekend as midnight Friday to midnight Sunday. Hospital admissions on holidays no weekend were excluded. We used definition for adverse outcomes as the composite outcome: a) Transfusion, b) Treatment (endoscopic, vascular embolization or surgery), c) Clinical intervention (transfusion and treatment), d) Re-bleeding and f) Mortality in patients with LGB.

Our center has endoscopy available 24 hours a day, 7 days a week.

For discrete variables we tested for significant differences between groups with X2 tests if 25 %or more of cells had expected values less than 5; the Fisher exact test was used. For continuous variables we used t-test (two-tailed). P values < 0.05 were considered statistically significant.

**Results** A total of 452 patients were identified. Of these 348 (73.9%) were admitted during the weekday and 104 (23.1%) during the weekend. Compared to patients admitted on a weekday, weekend admissions had similar adverse outcomes.

Results are resumed in ► **Table 1**.

**Conclusions** Adverse outcomes no differ depending on weekend versus weekday admission. The timing of colonoscopy no differ on weekday versus weekend. This study was limited by being a single institution study, which could lead to a sampling bias. Our findings should be reevaluated in other healthcare systems under the same socioeconomic conditions.

► **Tab. 1** Characteristics and results of patients admitted for lgb on weekend and weekday

	<b>Weekend 104 (23,1) %</b>	<b>Weekday 348 (73.9%)</b>	<b>P value</b>
Adverse outcome	33 (31.7%)	123 (35.4%)	0.49
Transfusion/ treatment/ clinical intervention	25 (24%)/9 (8.7%)/30 (28.8 %)	102 (29.3%)/ 52 (14.9 %)/124 (35.6%)	0.29/0.10/0.2
Rebleeding/ severe bleed- ing/death	11 (10.6%)/ 29 (27.9%)/3 (0.9%)	30 (8.6%)/ 109 (31.3%)/ 3 (2.9%)	0.54/0.50/ 0.14
Length of hospital stay/ time to colo- noscopy/ (days) (mean ± sd)/	8.38 (±7.7)/ 4.6 (±3.2)	7.8 (±6.9)/4.5 (±2.6)	0.6/0.5

## OP44 COMPLEX ANTITHROMBOTIC THERAPY IN PATIENTS WITH ACUTE LOWER GASTROINTESTINAL BLEEDING: CLINICAL OUTCOMES

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DOI 10.1055/s-0040-1704064

**Aims** Analyze the relationship of CAT (dual treatment: antiplatelet-anticoagulant or antiplatelet-antiplatelet) and the adverse outcomes in patients with acute lower gastrointestinal bleeding (LGB).

**Methods** International Classification of Diseases, 9th Revision, Clinical Modification codes for admission diagnosis were used to identify retrospectively a cohort of patients with LGB from January 2013 to December 2017 hospitalized in a tertiary care, university-affiliated hospital. The outcomes studied were: A) severe LGB, B) Re-bleeding, C) Transfusion requirements, D) Treatment (endoscopy, interventional radiology or surgery), E) Readmission and F) Death. For discrete variables we tested for significant differences between groups with X2 tests If ≥25 % of cells had expected values less than 5; Fisher exact test was used. P values < 0.05 were considered statistically significant. Differences in outcomes were expressed in odds ratio (OR) with 95% confidence intervals (95%CI).

**Results** Were identified 417 patients (88.5%) in not CAT group versus 54 (11.5%) in CAT group. Mean age was 76.8 years in CAT group versus 72.6 in not CAT group, 203 (48.7%) were men in not CAT group and 42 (77.8%) in patients using CAT. The most common source bleeding was diverticular 114 (27.3%) in

not CAT group and ischemic colitis 13 (24.1%) in CAT group. Outcomes of patients are show in ► **Table 1**.

**Conclusions** Patients in CAT have a higher frequency of severe LGB; transfusion and readmission compared to patients without CAT. No difference was found between them for re-bleeding, need for treatment and death.

► **Tab. 1** Outcomes of patients admitted for LGB ( With CAT treatment versus without CAT treatment)

	<b>With CAT 54 (11.5%)</b>	<b>Without CAT 417 (88.5%)</b>	<b>OR (IC95%)</b>
Severe LGB	24 (44.4%)	115(27.8%)	2.1 (1.18-3.75)
Transfusion/ Rebleeding	23 (42.6%)/8 (14.3%)	105 (25.2%)/ 34(8.2%)	2.21(1.23-3.95)/1.96 (0.86-4.49)
Treatment/ Readmission	10 (18.5%)/8 (14.3%)	50 (12 %)/12 (2.9%)	1.67 (0.79-3.52)/5.87 (2.28-15.1)
Death	0 (0%)	6 (1.4%)	2.1(1.18-3.75)

## OP45 ACUTE LOWER GASTROINTESTINAL BLEEDING: WHICH IS THE BETTER SCORE FOR EACH OUTCOME?

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DOI 10.1055/s-0040-1704065

**Aims: Introduction** Although several scores have been proposed as risk stratification tools for acute lower gastrointestinal bleeding (ALGIB) there are few comparative studies among them.

**Aims** To assess the effectiveness of different scoring systems - NOBLADS, Oakland (OS), AIMS65, Glasgow-Blatchford (GBS) - at predicting severe bleeding, relapse, need for transfusion, need for haemostatic intervention and mortality.

**Methods** Retrospective review of all ALGIB admissions that required hospitalization, from January 2017 to July 2019. Clinical, demographic and laboratory data was collected. Different scores and area under the receiver operating characteristic curve (AUROC) were calculated and then compared using the Delong method.

**Results** 119 patients included, 54.6 % females, average age 77.0 ± 10.9 years. Most frequent aetiologies for ALGIB were ischemic colitis (39%) and diverticular bleeding (22%). Thirty-four patients (29%) presented with severe bleeding, 19 (16%) developed recurrent bleeding and 48 (41%) needed blood transfusion. Endoscopic therapeutic intervention was needed in 18 patients (15%) and 4 (3%) underwent surgery.

For predicting severe bleeding, OS (AUROC 0.90) and GBS (AUROC 0.84) showed highest discriminating power; both were statistically superior to NOBLADS and AIMS65 (respectively, p=0.002; p=0.001 and p=0.004, p=0.001). OS, GBS and NOBLADS were similar when predicting rebleeding (AUROC 0.75 vs 0.74 vs 0.71). Regarding haemostatic intervention, OS, GBS and NOBLADS were identical (AUROC 0.68 vs 0.62 vs 0.60). However, OS was statistically more accurate than GBS and NOBLADS (AUROC 0.94 vs 0.85 vs 0.79) for predicting blood transfusion needs (respectively, p=0.001 and p< 0.0001). Mortality was better predicted by AIMS65 than GBS, NOBLADS and OS (AUROC 0.87 vs 0.68 vs 0.64 vs 0.54).

**Conclusions** Our results favour the use of OS in predicting severe bleeding and transfusion needs, and the use of AIMS65 for predicting mortality. However, in predicting rebleeding and need for haemostatic intervention OS, NOBLADS and GBS were similar.

#### OP46 SMALL BOWEL ANGIOECTASIA ARE A MARKER OF FRAILTY AND CARRY A POOR PROGNOSIS

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DOI 10.1055/s-0040-1704066

**Aims** This study aims to establish the 5-year survival of those diagnosed with bleeding small bowel (SB) angioectasia, with the hypothesis that many will suffer deaths relating to comorbidity rather than GI bleeding.

**Methods** SB capsule endoscopy (SBCE) procedures, performed for suspected SB bleeding or iron deficiency anaemia, with angioectasia isolated as the cause of SB bleeding and at least 5 years of follow up data were isolated (n=125) along with an age matched group with "normal" SBCE procedures (n=125). These were retrospectively analysed with further information on mortality and comorbidity gathered through hospital records.

**Results** Those with angioectasia had a median age of 72.7 years and comorbidities were common. The 5-year survival was 64.0% (80/125) compared to 70.4% (88/125) in those with "normal" SBCE. Those with significant cardiac or vascular comorbidity had a poorer survival (52.9% (37/70) at 5 years) but anti-coagulation/antiplatelets seemed to make little difference.

37/125 (29.6%) were planned for endoscopic therapy, this group had a survival of 62.3% (23/37).

In those with SB bleeding secondary to angioectasia none of the subsequent deaths were directly attributable to gastrointestinal bleeding.

**Conclusions** The overall 5-year survival in those diagnosed with angioectasia on VCE was poor at 64.0% due to those diagnosed frequently being older and comorbid. This is comparable with the 5 year mortality seen when SB adenocarcinoma (all SEER stages combined) is diagnosed (68%) and worse than when the cancer is localised (85% survival at 5 years)(1).

This would support the hypothesis that a diagnosis of small bowel (SB) bleeding secondary to angioectasia suggests frailty.

(1) Noone AM, Howlander N, Krapcho M, Miller D, Brest A, Yu M, Ruhl J, Tatalovich Z, Mariotto A, Lewis DR, Chen HS, Feuer EJ CK. Cancer Statistics Review, 1975-2015 - SEER Statistics. SEER Cancer Stat Rev. 2017;

#### OP47 NON-STEROIDAL ANTI-INFLAMMATORY DRUG-INDUCED ENTEROPATHY AS A MAJOR RISK FACTOR FOR SMALL BOWEL BLEEDING

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DOI 10.1055/s-0040-1704067

**Aims** Small bowel (SB) bleeding has been known to account for 5% of all gastrointestinal (GI) bleeding cases and 80% of obscure GI bleeding cases. Although angioectasia is the common etiology of SB bleeding, non-steroidal anti-inflammatory drug (NSAID)-induced SB lesion is also reported as a major cause in previous studies from the Eastern countries. Herein, we assessed the frequency of NSAID-induced SB lesion in Korean patients with obscure GI bleeding.

**Methods** We retrospectively analyzed medical records of all consecutive patients aged ≥18 years who underwent capsule endoscopy from March 2018 to February 2019 at Ulsan University Hospital and Kosin University Gospel Hospital.

**Results** Of the 83 subjects (age, mean ± standard deviation: 59 ± 18 years; age range: 18-84 years; men, n=52; women, n=31), 55 (66.2%) had a clear bloody stool and 28 (33.8%) had a normal stool, but all had iron deficiency anemia. A significantly higher frequency (40 of 51) of ulcerative/erosive lesions was observed in patients with inactive bleeding but visible SB lesions than other causes, and as a result, NSAID-induced enteropathy accounted for 41.7% (25 of 60) of all SB bleeding cases.

**Conclusions** Contrary to findings of previous studies from the Western countries, ulcerative/erosive lesions were found to have higher occurrence than angioectasia in this study, with an implication of NSAIDs in the etiology of obscure GI bleeding. Aggressive small intestine examination is required for patients with unexplained GI bleeding.

#### OP48 RESULTS OF THE EVALUATION OF CLINICAL MANIFESTATION OF SMALL INTESTINE BLEEDING AND ITS SOURCES

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DOI 10.1055/s-0040-1704068

**Aims** To evaluate sources of intestinal bleeding and compare their clinical features.

**Methods** From 14.02.2007 to 10.03.2019 229 patients (m-117, f-112, mean age 52,3±18,3 years, range 17-89) were admitted to our clinics with GIB of unknown source. Obscure overt bleeding had 142 (62,0%) pts, obscure occult bleeding - 87 (38,0%) pts, associated with severe anemia in 86 (37,5%) pts, moderate anemia - in 87 (37,9%) pts and mild anemia - in 56 (24,4%) pts. Other complaints were: abdominal pain in 50 (51,0%) pts, diarrhea in 26 (26,5%) pts, nausea/vomiting in 22 (22,4%) pts. Videocapsule enteroscopy was performed in 179 (78,2%) pts, balloon-assisted enteroscopy - in 146 (63,7%) pts.

**Results** The source of GIB was found in 191 (83,4%) pts: small bowel (SB) - in 170 (89,0%) pts; upper/lower GI tract - in 21 (11,0%) pts, no pathology - in 38 (16,6%) pts. The sources of SB bleeding included vessel malformations (VM) in 65 (35,7%) pts, tumors - in 54 (29,7%) pts, erosive/ulcerative enteropathy - in 42 (23,1%) pts, diverticula - in 9 (5,3%) pts (incl. Meckel's diverticulum (6)). VM were more common in patients older than 55 years, tumors and enteritis - up to 55 (p=0.03700). Pts with VM and tumors predominantly had obscure overt bleeding, pts with enteritis - obscure occult bleeding (p=0.03795). The period of tumors detection was longer year, than the diagnosis of enteritis (p=0.00648). Having tumors and enteritis patients more often experienced abdominal pain, that those with VM (p=0.00049); pts with enteritis more often complained of diarrhea than pts with VM and tumors (p=0.00001). All pts with SB diverticula had overt GIB, apparent with severe anemia, without any other complaints.

**Conclusions** The knowledge about different clinical manifestation of certain sources of intestinal bleeding may be useful in complex diagnostics.

## OP49 MEASURES TO REDUCE POST-POLYPECTOMY BLEEDING IN PEDUNCULATED POLYPS - DOES A CLIP HELP?

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**DOI** 10.1055/s-0040-1704069

**Aims** Immediate and delayed post-polypectomy bleeding (PPB) is a serious complication after endoscopic removal of large pedunculated polyps. Options to decrease risk of bleeding include injecting the stalk with adrenaline, placing clips across the stalk (before or after the polypectomy) and placement of a nylon loop around the stalk. The principle of closing a defect to reduce complications is well established but the cost effectiveness of prophylactic clipping remains controversial. There are currently no consensus guidelines. We aimed to investigate the use of endoscopic clips during polypectomy of pedunculated polyps >10mm and assess its association with PPB.

**Methods** Large retrospective study across two sites at a tertiary London-based hospital Trust. Endoscopy software (Unisoft GI reporting tool) was used to identify pedunculated polyps >10mm in size during a 5 year period (January 2014 to March 2019). Patients that did not undergo polypectomy were excluded.

**Results** 657 polypectomies performed for pedunculated polyps (mean age 65.2 (range 22 - 94), Female 240 (36.5%). Mean pedunculated polyp size 16.4mm (10 - 60mm). 636 (96.8%) hot snare polypectomy; 264 (40.2%) injected with adrenaline. Endoscopic clip used in 191 (29%). Total immediate (< 6hrs) and delayed bleeding (6hrs to 2 weeks) events were 11 (1.7%) and 14 (2.1%), respectively. Endoscopic clip use was associated with adrenaline injection (60.2% vs. 32%,  $p < 0.0001$ ) and immediate bleeding (4.7% vs. 0.4%,  $p = 0.0001$ ).

**Conclusions** Endoscopic clip use was associated with more immediate bleeding events suggesting that it is being used as a treatment strategy (not prophylactically) to achieve haemostasis. Endoscopic clips are being deployed more often with larger polyps and in combination with adrenaline injection. Whilst there is clear guidance from national and international bodies on how to remove sessile polyps, the optimal technique for resection of pedunculated polyp is less clear and this may account for the variability in clinical practice.

## OP50 MORTALITY OF ACUTE LOWER GASTROINTESTINAL BLEEDING: A PROSPECTIVE, MULTICENTRE, COHORT STUDY

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**DOI** 10.1055/s-0040-1704070

**Aims** Acute lower GI bleeding (LGIB) is a common reason for hospitalization and death. This study was aimed to identify predictors of mortality in a large cohort of patients with acute LGIB.

**Methods** A multicentre, prospective, observational study on acute LGIB was conducted from October 1<sup>st</sup> 2018 to October 28<sup>th</sup> 2019 in 15 Italian hospitals. Consecutive, unselected adult outpatients acutely admitted for LGIB or developing LGIB during hospital stay were prospectively enrolled; those with upper GI bleeding diagnosis were excluded. Demographic data, comorbidities, medications, interventions, and main clinical outcomes were recorded. Those significant related to in-hospital mortality at univariate analysis were included in a logistic regression model.

**Results** Data on 1198 cases (1060 new admissions; 138 inpatients) were analysed. Most patients were elderly (mean age 74+15 years) and 76% had at least one major comorbidity (Charlson Comorbidity Index > 1). A total of 117 (9.8%) patients received no inpatient investigation. In-hospital mortality was 3.4% (41 patients), and resulted significantly higher for inpatients than outpatients (6% vs. 2.7%,  $p < 0.001$ ). At univariate analysis, increasing age, Charlson comorbidity Index, bleeding presentation (haemodynamic instability, melena, inpatient bleeding) and ICU admission were associated with higher mortality. Mortality was lower in patients admitted in GI or surgical units (vs. internal medicine) or taking antithrombotic drugs. No association was found between mortality and early colonoscopy. At multivariate analysis, independent predictors of mortality were age (OR 1.08; 95%CI, 1.04-1.13), Charlson comorbidity Index (OR 1.16; 95%CI, 1.01-1.34), in-hospital bleeding (OR; 3.57; 95%CI 1.38-9.29), haemodynamic instability at presentation (OR 2.60; 95%CI, 1.01-6.72), and ICU admission (OR 7.30; 95%CI, 1.43-37.13)

**Conclusions** Patient age, comorbidities, and severity of haemorrhage were the main determinants of in-patient mortality. These variables should be considered when triaging LGIB patients for immediate resuscitation, close observation and early treatment.

## OP51 COMPARISON OF ENDOCLOT, A NOVEL POLYSACCHARIDE HAEMOSTATIC AGENT, AND ENDOSCOPIC CLIPPING IN THE PREVENTION OF POST POLYPECTOMY HAEMORRHAGE - A RETROSPECTIVE COHORT STUDY

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**DOI** 10.1055/s-0040-1704071

**Aims** Post polypectomy haemorrhage (PPH) can occur in 6-10% of cases of colonic polyps > 20mm. Risk factors suggested include lesion size, proximal location and use of anticoagulants or antiplatelets. Topical haemostats and clips could be used for prevention. Our study compares their use for resections > 20mm.

**Methods** This was a retrospective, observational study over 22 months. Records were analysed to identify polyp resections >20 mm. Data regarding size, location, details of prophylactic therapy and use of concurrent anticoagulant/antiplatelet use were collected. Admissions for delayed bleeding were measured over a 30-day period.

**Results** 226 patients underwent colonoscopy with 266 polyp resections > 20mm. Anticoagulation was present in 30 patients (13.3%) and antiplatelet drugs in 58 patients (25.7%). EndoClot was applied in 25 resections with delayed bleeding in 1 patient (4%). Mechanical clips were used in 78 lesions with 8 incidents of delayed bleeding in this cohort (10.3%). We did not use any prophylactic therapy in 111 patients with no PPH. There were 13 patients with polyps > 50mm. 12 received prophylactic therapy with only 1 incidence of delayed bleeding. Detailed results are shown below.

**Conclusions** In our high-risk cohort, prophylactic use of EndoClot and clips suggests lower PPH with the topical haemostat. A larger number had clips used in the distal colon and were on anticoagulation. Our study was limited by its retrospective design and choice of prophylaxis based on clinician preference. Prospective data is required to identify an ideal subset of patients where topical therapy would be beneficial.

► **Tab. 1** Detailed Results

	Endoclot (n=25)	Clips (n=78)	Other eg: coagulation/ Purastat (n=52)	None (n=111)
Location (proximal, distal, rectal)	88% (22); 4% (1); 8% (2)	64.1% (50); 24.4% (19); 11.5% (9)	59.6% (31); 28.8% (15); 11.5% (6)	82.9% (92); 14.4% (16); 2.7% (3)
Anticoag- ulants	DOAC 16% (4)	DOAC 14.1% (11); War- farin 1.3% (1)	DOAC 1.9% (1); Warfarin 1.9% (1); Clexane 3.8% (2)	DOAC 7.2% (8); Warfarin 1.8% (2)
Antiplate- lets	Aspirin 24% (6); Clopidog- rel 0%	Aspirin 14.1% (11); Clo- pidogrel 6.4% (5)	Aspirin 25% (13); Clopidog- rel 1.9% (1); DAPT 1.9% (1)	Aspirin 17.1% (19); Clo- pidogrel 1.8% (2)
PPH	4% (1)	10.3% (8)	7.7% (4)	0%

## OP52 MANAGEMENT OF CHRONIC RADIATION PROCTOPATHY: A SINGLE CENTRE 12 YEARS' EXPERIENCE WITH ARGON PLASMA COAGULATION

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DOI 10.1055/s-0040-1704072

**Aims** Chronic radiation proctopathy (CRP) is a recognised complication of pelvic radiotherapy, but no standard treatment has been established. The aims of this study were to define the natural history of CRP and to evaluate and compare efficacy of chosen therapies.

**Methods** Single centre retrospective cohort study including consecutive patients with endoscopically confirmed CRP between January 2008 and October 2019. Data were collected from electronic medical reports. Clinical success was defined as a significant reduction or cessation of rectal bleeding. Endoscopic therapy performed was argon plasma coagulation (APC).

**Results** A total of 231 patients were included (male: 125 (54.1%); median age: 76 (66-80) years. Most common tumours were prostate (47.0%) and cervical (39.1%). Diagnosis was made in a median of 2 (1-3) years after radiotherapy. The most common presenting symptom was rectal bleeding (77.1%) and 19.9% of patients were asymptomatic. Antithrombotic therapy was associated with the report of more symptoms (94.8% vs. 73.1%,  $p < 0.05$ ) without significant differences in haemoglobin value (12.2g/dL vs. 12.7g/dL,  $p = 0.08$ ). In 36.8% of patients no treatment was required, 9.0% received exclusively medical therapy (with a clinical success of 30%), 54.1% received solely APC and 16.9% received both therapies. A median of 1.7 (1.0-2.0) APC sessions was performed and the median time interval between sessions was 1.5 (0.5-3.0) months. Clinical success was documented in 97.6% of cases. Combined medical and endoscopic treatment was associated with a significantly lower number of sessions

(1.0 vs. 2.0,  $p < 0.01$ ). The number of sessions wasn't significantly different between antithrombotic users and non-users (1.0 vs. 1.0,  $p = 0.50$ ). No adverse events were documented.

**Conclusions** Two-thirds CRP patients will require treatment and APC is an effective and safe endoscopic therapy. Nevertheless, a significant number of cases will not require intervention. Indications and clinically relevant endpoints for endoscopic therapy need to be well-defined.

## OP53 TREATMENT OF HAEMORRHAGIC RADIATION PROCTITIS (HRP) BY ARGON PLASMA ELECTROCOAGULATION (APC): RESULTS AND COMPLICATIONS

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DOI 10.1055/s-0040-1704073

**Aims** The aim is to determine the contribution of APC in the management of HRP.

**Methods** This is a retrospective and descriptive study between January 2009 and December 2018, including 46 patients with HRP. The technique used was a monopolar electrocoagulation with argon plasma.

**Results** The average age of patients was 59±16,5 years old and the sex ratio M/W was 1.1. Patients had no history of cardiovascular diseases and were not under anticoagulants, platelet aggregation inhibitors or NSAIDs. The main symptom was rectorrhagia found in all patients and the average clinical severity score of chutckan was 3,1. The average hemoglobin level was 9.6 g/dl. Radiotherapy was indicated in order of frequency for prostate, cervical, rectal and anal cancers. The average time to onset the symptomatology of HRP after pelvic radiation was 11 months and the diagnosis of HRP was confirmed by rectosigmoidoscopy in all patients who were all treated with APC. The average number of sessions required for the disappearance of rectorrhagia was 2.2 with extremes ranging from 1 to 6 sessions. The average duration of follow-up was 9 months. The evolution was marked by total disappearance of rectorrhagia in 74.2% of cases with a clear decrease of the clinical severity score of Chutkan from 3.1 to 0.65. Only 11 patients kept occasional small rectorrhagia without hemodynamic repercussions. After treatment, the hemoglobin level went from an average of 9.6 g/dl to 12.2 g/dl. Endoscopic control showed a marked improvement in rectal lesions and no major bleeding recurrence was mentioned. No short term or long term complications of APC were reported in our study.

**Conclusions** Our study confirms that endoscopic argon plasma coagulation treatment of HRP gives good results in terms of efficiency, tolerance and safety which proves its indication at first intention in the management of HRP.

Friday, April 24, 2020

Artificial Intelligence inGI-endoscopy:  
Is the future here?

11:00 – 13:00

Wicklow Meeting  
Room 3

## OP54 PIXEL VS PATCH-BASED DEEP LEARNING MODELS, PAVING THE WAY TOWARDS REAL-TIME AI-ASSISTED DETECTION OF BARRETT'S NEOPLASIA

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DOI 10.1055/s-0040-1704074

**Aims** Early detection of Barrett's neoplasia is challenging. Deep learning (DL) is proposed to play a role, with limited recent reports showing encouraging results. However, comparative data on the best methods to develop and implement this technology is lacking. We aim to compare two different DL models for detection of Barrett's neoplasia, a classical patch-based, and a pixel-based model.

**Methods** We collected 76 anonymous, HDWLE, histologically-confirmed images from our database, including adenocarcinoma, HGD and LGD. For patch-based model, LeNet-5 architecture was used. Each image is divided into patches of 48x48 pixels, each patch had a confidence score and label (neoplastic or non-neoplastic). For pixel-based, we used SegNet architecture. Each pixel in the image was given a label and confidence score. Validation performed using 4 fold leave-one-out cross-validations. Graphic processing unit used was "GeForce RTX 2080 Ti. Processing speed, global accuracy (how often is the model prediction right), F-score (harmonic mean of sensitivity and precision), and IoU (overlap between model prediction and expert marking) were calculated and compared using paired sample t-test.

**Results** Average processing speed with pixel-based was 33ms/image, compared with 102.6ms/image for patch-based model. At a score threshold of 0.8, pixel and patch-based models showed mean values of global accuracy 88% and 84% (P-value 0.00002), IoU 0.40 and 0.21 (P<0.0001), and F-score (for correctly predicted images, at IoU 0.5) 0.81 and 0.69 (P value < 0.0001), respectively.

**Conclusions** Pixel-based model is significantly faster, and performed better than patch-based model. Given average human visual response latency is estimated at 70-100ms, this data suggest our pixel-based model could potentially detect neoplasia faster than human eye so it will be best suited for real time detection. To our knowledge, this is the first report comparing these two different approaches in Barrett's neoplasia and suggests that all future work should be done with Pixel based model.

## OP55V REAL-TIME DIAGNOSIS OF AN EARLY BARRETT'S CARCINOMA USING ARTIFICIAL INTELLIGENCE (AI) - VIDEO CASE DEMONSTRATION

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**DOI** 10.1055/s-0040-1704075

**Introduction** We present a clinical case showing the real-time detection, characterization and delineation of an early Barrett's cancer using AI.

**Patients and methods** A 70-year old patient with a long-segment Barrett's esophagus (C5M7) was assessed with an AI algorithm.

**Results** The AI system detected a 10 mm focal lesion and AI characterization predicted cancer with a probability of >90%. After ESD resection, histopathology showed mucosal adenocarcinoma (T1a (m), R0) confirming AI diagnosis.

**Conclusion** We demonstrate the real-time AI detection, characterization and delineation of a small and early mucosal Barrett's cancer.

## OP56 ARTIFICIAL INTELLIGENCE IN ENDOSCOPY FOR GASTRIC CANCER ASSESSMENT: MACHINE OVER MAN OR PERFECT HARMONY?

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**DOI** 10.1055/s-0040-1704076

**Aims** Artificial intelligence (AI) is likely to execute roles currently performed by humans, being essential for endoscopists to focus on this novel technology for avoiding to miss and mischaracterize malignant change in the stomach. The aim of our study was to assess the advances of AI-based medicine and the involvement in rectifying current limitations of gastroscopy.

**Methods** A systematic literature search was carried out in three major databases which are as follows: PubMed, Scopus, and Embase up to November 2019. The analysis was performed using the population intervention comparison outcome (PICO) format: (P) patients undergoing endoscopy for the assessment of gastric cancer; artificial intelligence (I) over endoscopist (C), the outcome (O) being the diagnostic accuracy.

**Results** 16 papers were selected for the systematic review. Computer-aided diagnosis, convolutional neural network computer-aided detection platforms with or without magnifying endoscopy with narrow band imaging, magnifying endoscopy with blue-laser imaging, support vector machine-based analysis system have been described in a number of pilot studies showing excellent results. The systems were able to determine quantitatively the early gastric cancers with deep submucosal invasion, to minimize the overestimation of invasion depth, to achieve a high diagnostic accuracy in detecting gastric cancers with a sensitivity equivalent to that of expert endoscopists and surpassing the non-expert endoscopists. AI can detect features in medical images that the human eye cannot assess or even see (hyperspectral imaging). Overall, AI systems using deep learning algorithms achieved a remarkable progress in medical imaging especially in colonic diseases but their application in other parts of the gastrointestinal tract has been limited.

**Conclusions** AI is expected to provide on-site decision support and help endoscopists, regardless of their skill, deliver a more accurate diagnosis during real time endoscopy by automatically detecting and categorizing lesions. Hence, it is essential that endoscopists focus on this novel technology and act in perfect harmony.

## OP57 DEVELOPMENT AND VALIDATION OF ARTIFICIAL INTELLIGENCE PROGRAM USING THE STANDARD 8 REGION IMAGING METHOD FOR THE QUALITY CONTROL OF ESOPHAGODUODENOGASTROSCOPY

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**DOI** 10.1055/s-0040-1704077

**Aims** Esophagogastroduodenoscopy (EGD) plays an important role in diagnosis and treatment of upper gastrointestinal disease. Complications of EGD have been increased, and this highlights the necessity of quality control of endoscopy. Complete visualization and photodocumentation of upper gastrointestinal (UGI) tracts is an important measure to prove the performance of each EGD. Based on recent success of AI (artificial intelligence) application in endoscopic images, we developed an AI-driven quality control system for EGD through convolutional neural network (CNN) using documented endoscopic images.

**Methods** We labeled the stomach location to eight alphabets according to the ESGE photodocumentation methods. The total number of EGD images was 2592 from 250 cases, 200 complete cases and 50 incomplete cases. We removed unnecessary black pads from the original images, and we resized our data into 224 by 224 for modeling. After image preprocessing, we performed two studies using 26 different networks with 5-fold cross-validation: multi-class classification study of images into 8 locations, and binary classification study to determine whether the EGD procedure was performed without missing any location.

**Results** We used a ResNet101 model pre-trained with Imagenet data for both classification studies and a few data augmentation methods to improve the

data. For the multi-class classification, the model we used classified the location with 98% accuracy, 98% positive predictive value, and 97% sensitivity. For the binary classification, our model showed 89% of accuracy. We also used class activation mapping to be more transparent of our study results and to explain how the model works.

**Conclusions** We were able to classify the images to the correct anatomical locations and evaluate the completeness of EGD study in terms of visualization.

### OP58 EVALUATION OF A REAL-TIME ARTIFICIAL INTELLIGENCE SYSTEM USING A DEEP NEURAL NETWORK FOR POLYP DETECTION AND LOCALIZATION IN THE LOWER GASTROINTESTINAL TRACT

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DOI 10.1055/s-0040-1704078

**Aims** The use of artificial intelligence (AI) may be an objective and operator-independent approach to increase endoscopist's adenoma detection rate (ADR) and limit inter-operator variability. Within this study, we developed a deep neural network (DNN) for automated detection of colorectal polyps and assessed its performance for real-time detection and localization when incorporated into existing colonoscopy platforms.

**Methods** We collected a total of 116,529 colonoscopy images from 278 patients with a total of 788 polyps. Within this data set five expert endoscopists annotated the presence of polyps. These annotations were treated as the gold standard. A total of 10,467 annotated images from 504 different polyps were used as a training data set to generate the DNN. In order to assess the DNN's performance a set of 45 videos comprising ~16,000 annotated video frames were used as a test set.

**Results** Half of the polyps in the test data were of flat morphology (50% Paris IIa/IIb) and either diminutive ( $\leq 5$  mm, 52.5%) or small (6 to 10 mm, 47.5%) with an average size of 6 mm. Over 70% of the polyp annotations covered less than 5% of the entire video frame size further indicating that the analyzed polyps were not prominently visible within the video frame. The DNN's sensitivity for polyp detection and localization was 90% with a specificity of 80% respectively (at 30Hz). In a receiver operating characteristic (ROC) analysis the system achieved an area under curve (AUC) of 92%.

**Conclusions** We generated a sensitive DNN for the automated detection and localization of colorectal polyps in real-time that holds the potential to be incorporated into existing colonoscopy platforms. In the near future a multi-center study will be conducted to further investigate the system's effect on endoscopist's ADR in vivo.

### OP59 ALGORITHM COMBINING VIRTUAL CHROMOENDOSCOPY FEATURES FOR POLYP CLASSIFICATION

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DOI 10.1055/s-0040-1704079

**Aims** Colonoscopy is considered the gold standard for decreasing colorectal cancer incidence and mortality. Visual differentiation between benign and pre-malignant colorectal polyps (CRPs) is an ongoing challenge in clinical

endoscopy with accuracies of 71-90% in the Dutch bowel cancer screening program, exposing patients to risks of incorrect optical diagnosis. The PVI thresholds for CRP-classification are only met in highly selective expert endoscopists. To allow a 'diagnose-and-leave' and 'resect-and-discard' strategy, optical diagnosis has to be improved. Computer-Aided-Diagnosis systems have been developed to analyze endoscopic images and classifies CRPs by exploiting machine learning algorithms.

The aim of this study is determining the diagnostic accuracy of a novel approach and algorithm for polyp malignancy classification, using one-shot learning with a Triplet Network architecture trained with triplet loss.

**Methods** The algorithm was trained prospectively by using 609 endoscopic images from 203 polyps. For each polyp, three imaging modalities (Triplet Network architecture) were used to improve algorithm prediction: White light (WL), Blue Laser Imaging (BLI) and Linker Color Imaging (LCI). We performed a retrospective comparative analysis to investigate the accuracy of the algorithm in distinguishing benign polyps (hyperplastic) from pre-malignant lesions (adenomas, sessile serrated lesions), using histopathology as gold standard.

**Results** 172 polyps were found to be premalignant and 31 were benign polyps. The results of combining the Triplet Network features with additional endoscopic modalities performed an accuracy of 89,7% with a sensitivity of 89,5% and a specificity of 90,3% for polyp malignancy classification. This is comparable to state-of-the-art methods but with much faster inference time (from hours to seconds).

**Conclusions** Our novel approach and algorithm for automatic polyp malignancy classification differentiates accurately between benign and pre-malignant polyps in endoscopic images. This is the first algorithm combining three optical modalities (WL/BLI/LCI) and a Triplet network. The algorithm can be further improved by increasing the amount of images.

### OP60 MISS RATE DUE TO FAILURE RECOGNITION: ARTIFICIAL INTELLIGENCE ESTIMATE BASED ON A HIGH-QUALITY. A RANDOMIZED CLINICAL TRIAL

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DOI 10.1055/s-0040-1704080

**Aims** One fourth of polyps seems to be missed by "tandem" or "back-to-back" colonoscopy studies. However, this approach is not as optimal as prone to observer and procedural variability during the two consecutive procedures. Furthermore, it is unclear how much of this miss rate is actually due to failed recognition. Our aim is to use Artificial-Intelligence (AI) for estimating polyp-miss rates in recorded (colonoscopy) videos.

**Methods** A set of 95 anonymized white-light endoscopy-videos from a high-quality RCT were analyzed with CADe deep-learning (DL) system (GI Genius, Medtronic) that superimposes a green-square on colonoscopy images to direct the attention towards potential lesions. Although GI Genius is engineered to work in real-time during live-endoscopy, a colonoscopy recorded without-AI can be fed to the device to annotate what would

have been the highlighted areas. All the images containing at least one detection by GI Genius were recorded and reviewed by nine endoscopists, who classified each frame as a FP/TP. To investigate missed-lesions within the frames categorized as TP, subsequent frames classified as TP were then clustered into unique video clips that were reviewed by three (expert) endoscopists, to exclude: (a) lesions excised later in the video; (b) suspect areas spotted by performing endoscopy, who decided to move over; (c) residuals from previous excision.

**Results** Overall (n=307) lesions were identified and resected in 95 videos (procedures). Revision of these videos by CADE led to a set of 72 video clips of "candidate"-missed lesions that were identified by at least 2/3 endoscopists, and a subset (n=28) of these candidates were considered as potential missed-lesions by all three expert endoscopists. The number of missed-lesions per patient measured by AI can thus be estimated between 0.29-0.76, while the corresponding miss rate (missed over missed plus resected lesions) is estimated between 8%-19%.

**Conclusions** In this study, we investigated for the first time the support of Artificial Intelligence (AI) in estimating polyp-miss rates in recorded colonoscopy videos. Measured miss rates are between 8%-19%. This represents a proxy for the contribution of failure in polyp recognition to such miss rate.

## OP61 A PROSPECTIVE, MULTI-CENTER VALIDATION STUDY FOR AUTOMATED POLYP DETECTION AS A SECOND OBSERVER

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DOI 10.1055/s-0040-1704081

**Aims** Last year, we presented a deep learning framework for automated polyp detection. Contrary to classical CNNs, we use 'memory cells' enabling more accurate predictions. Little evidence is available on the performance of AI for polyp detection in clinical practice. The aim of this study is to prospectively validate our system in a multi-center clinical setting to obtain an estimate power calculation for future trial design and to assess preliminary performance compared to experienced endoscopists.

**Methods** Our system was trained with 131.619 frames from 825 polyps from 206 patients and was implemented in a bedside module for real-time analysis. In this study, an experienced endoscopist (ADR>35%) does not see the system output while a second observer looks at the AI-enhanced screen. We define four different situations: (1) Obvious false positive - the system gives an obviously false detection (stool, air bubbles, ...). (2) Other positive - after its location disappears from the image, the endoscopist is asked to return. If there is a polyp, this is an additional detection. (3) False negative - the endoscopist found a polyp, but the system didn't. (4) True positive - the system and endoscopist found the polyp.

**Results** Currently, 99/300 patients are included from three European centers. In total 199 polyps were found of which 181 were detected by the system and endoscopist. There were 13 false negatives (all diminutive) and 5 additional detections by the system. Combined, this corresponds to a 3% increase in polyps-per-colonoscopy. A low average of 1 false positive per minute was recorded.

**Conclusions** The interim analysis shows promising results for the clinical validation of a novel AI system. These exploratory studies are important to power future trials and to estimate the optimal trial design (non-inferiority versus

superiority). We plan to include 300 patients by the ESGE days 2020 and present the full results.

## OP62 DEVELOPMENT OF MACHINE LEARNING MODELS TO PREDICT RISK OF PATHOLOGY OR NEED FOR INTERVENTION AMONGST ADULT PATIENTS UNDERGOING COLONOSCOPY

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DOI 10.1055/s-0040-1704082

**Aims Background** The number of colonoscopies performed yearly is constantly increasing around Europe. Accordingly, endoscopy services are coming under huge service-delivery pressure, and waiting times are becoming unacceptable; This calls for better risk-stratification.

**Aim** To construct foundational machine-learning models which predict the likelihood of pathology and need for intervention at colonoscopy.

**Methods** Colonoscopy records were anonymised. Predictors available within the dataset included: *sex, age, procedure indication and urgency*. Outcomes of interest included: 'all-pathology' and 'interventional-pathology', where intervention (including biopsy) was required. Odds Ratios/Chi-Square statistics were calculated for all predictors. We then developed and internally validated multivariate logistic regression (LR) models, decision tree classifiers and artificial neural nets.

**Results** 23,663 colonoscopies, performed on 18,677 individual patients were analysed. Mean age: 60.89; 50.91% Female. The largest procedure indications within the cohort were: Polyp Surveillance [n=6137] and Bowel Cancer Screening (BCSP) [n=4508]. 74.92%(+/-0.56%-95%CI) of tests contained pathology; 64.84%(+/-0.61%-95%CI) contained 'interventional-pathology'. Some key predictors all with p<0.01 significance are listed in ► **Table 1**:

Best case scenario for finding pathology: 97.6%(+/-0.93%-95%CI) of males, Aged>55, undergoing urgent colonoscopy for polyp surveillance, while only 21.79%(+/-6.06%-95%CI) of females, < 55yrs, undergoing urgent colonoscopy

► **Tab. 1** Predictor Statistics

Predictor	'All-Pathology' OR (95%CI)	'All-Pathology' Pearson-Chi <sup>2</sup>	'Interventional-Pathology' OR (95%CI)	'Interventional-Pathology' Pearson-Chi <sup>2</sup>
Age: >55	3.51 (3.30-3.74)	1661.67	1.09 (1.02-1.15)	7.49
Sex: Male	1.77 (1.67-1.88)	2004.02	0.71 (0.67-0.74)	214.07
Indication: Previous-Polyps	3.34 (3.07-3.64)	836.47	2.42 (2.26-2.59)	672.50
Indication: BCSP	3.94 (3.55-4.38)	738.61	1.33 (1.23-1.42)	63.05

for anaemia had any 'interventional-pathology'. Given the nature of the dataset, LR performed best and was able to obtain an optimised AUC of 0.75 for predicting 'all-pathology' and 0.70 for 'interventional-pathology'.

**Conclusions** Machine-learning algorithms can use simple pre-procedure parameters to predict the likelihood of finding significant pathology during colonoscopy; This can help us better utilise colonoscopy resources, potentially reducing/replacing 25% of current colonoscopy workload, with significant resultant health-economic benefits.

### OP63 ARTIFICIAL INTELLIGENCE COMBINED WITH LCI YIELDS IN HIGHEST ACCURACY AND DETECTION OF COLORECTAL POLYPS, INCLUDING SESSILE SERRATED LESIONS

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**DOI** 10.1055/s-0040-1704083

**Aims** Linked color imaging (LCI) has shown its effectiveness in multiple randomized controlled trials for enhanced colorectal polyp detection. Most recently, artificial intelligence (AI) with deep learning through convolutional neural networks has dramatically improved and is increasingly recognized as a promising new technique enhancing colorectal polyp detection. Study aim was to evaluate a new developed deep-learning computer-aided detection (CAD) system in combination with LCI for colorectal polyp detection.

**Methods** First, a convolutional neural network was trained for colorectal polyp detection in combination with the LCI-technique using a dataset of anonymized endoscopy videos. For the validation, 240 polyps within fully recorded endoscopy videos with LCI mode, covering the whole spectrum of adenomatous histology, were used. Sensitivity (True positive rate per-lesion) and false positive frames in a full procedure were assessed.

**Results** The new CAD system used on LCI mode could at least process 60 frames per second allowing for real-time video analysis. Sensitivity (True positive rate per-lesion) was 100% with no lesion being missed. The calculated false positive frame rate was 0.001%. Out of the 240 polyps included, 34 were sessile serrated lesions. The detection rate for sessile serrated lesions with the CAD system used on LCI mode was 100%.

**Conclusions** The new CAD system used on LCI mode achieved a 100% sensitivity per lesion and a negligible false positive frame rate. Of note, the new CAD system used on LCI mode also specifically allowed for detection of serrated lesions in all cases.

### OP64 ARTIFICIAL INTELLIGENCE, TRAINED WITH A ROUGH BINARY CLASSIFICATION, CAN SELECT SIGNIFICANT IMAGES OF CAPSULE ENDOSCOPY

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**DOI** 10.1055/s-0040-1704084

**Aims** Since the introduction of computer vision technology using Deep-learning, various acceptable results have been reported for the recognition of small bowel pathologies in capsule endoscopy. However, the results are limitedly dealt with lesions such as erosions, ulcers, and angioectasia, which are easy to apply machine learning technologies. We classified capsule endoscopy images into those with and without significant lesions, and studied whether artificial intelligence, which learned the images of binary classification, can correctly suggest images containing significant lesions.

**Methods** Seventy capsule endoscopy cases using PillCam SB3 (Medtronic, Minneapolis, MN, USA) were collected at 3 university hospitals. Under an agreement, two experienced endoscopist classified the extracted small bowel images into 2 categories according to the presence of pathologic features. Forty-eight thousand images containing inflamed mucosa, atypical vascularity and blood were categorized as significant images. Forty-eight thousand images representing normal mucosa were classified as insignificant. Normal contaminants like bile, bubble, and debris were allowed to be included in the insignificant images.

Sixty percent of total images (57,600) are used to train the recent Inception ResNet V2 model that has 467 layers. After pre-training on the ImageNet dataset, we retrained all the layers of model and obtained 97.98% accuracy on the validation set of images (20% of total, 19,200 frames).

**Results** Finally, we apply our trained model to a test set, 20 percent (19,200) of total images, that is not used for training and validation. The accuracy of testing is 98.13%.

**Conclusions** Artificial intelligence for accurate recognition of small intestine pathology requires highly classified and annotated learning materials. However, a well-organized large database can contribute to artificial intelligence for capsule endoscopy even with a rough classification.

### OP65 RECENT UPPER GASTROINTESTINAL ENDOSCOPY QUALITY MEASURES SEEM TO BE USEFUL BUT NEED FURTHER VALIDATION. A MULTICENTER OBSERVATIONAL STUDY

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**DOI** 10.1055/s-0040-1704085

**Aims** The proper visualization and image interpretation are the key factors of good Esophagogastroduodenoscopy (EGD) quality. Nevertheless, the proper quality indicators were not yet validated for EGD. Recently two metrics were proposed: composite detection rate (CDR - the sum of gastric inlet patch, gastric polyps and duodenal bulb deformations detection rates) and endoscopist biopsy rate (EBR) that in university endoscopy units corresponds with higher gastric premalignant lesions detection and lower gastric cancers miss rate. The aim of the study was to verify these metrics among different endoscopy units settings.

**Methods** It was a prospective, observational, multicenter study. 2984 individuals who underwent diagnostic EGD were enrolled in 3 centers: local hospital (1), private out-patient endoscopy unit (2) and university hospital (3). Operators were informed that their performance would be measured. EBR and CDR were collected. The study was performed in accordance to declaration of Helsinki in agreement with bioethics committee.

**Results** The differences in EBR were significant among centers (76.97% vs 49.56% vs 66.6%; 1,2 and 3 respectively). CDR also varied significantly (10.68% ±0.32 vs 22.29%±0.44 vs 38.21±55.91; 1,2 and 3 respectively). Examinations with at least one biopsy had significantly higher CDR (8.22% vs 32.62% p<

0.000). ROC analysis revealed that EBR seemed not to be a good quality indicator in relation to CDR (AUC 0.612±0.0; 95%CI 0.591 - 0.632).

**Conclusions** EBR is not fully validated tool and it seems that in some settings it may not correspond with operators perception measured by CDR. EBR as validated in university endoscopy units, may not be useful for local hospital units. CDR could reflect better EGD quality in general evaluation, however this tool needs further validation.

Friday, April 24, 2020

Advances in endoluminal and biliopancreatic endoscopy

17:00 – 18:30

The Liffey A

## OP66 ENDOSCOPIC SUBMUCOSAL DISSECTION (ESD): EXPERIENCE FROM A TERTIARY REFERRAL CENTRE IN LONDON REGARDING SALINE-IMMERSION THERAPEUTIC ENDOSCOPY (SITE) COMBINED WITH THE POCKET-CREATION METHOD (PCM)

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**Aims** Endoscopic submucosal dissection (ESD) is a potentially curative, minimally-invasive alternative to major surgery for the endoscopic management of superficial gastric and colorectal neoplasms. Due to its several advantages pocket-creation method (PCM) appears to simplify ESD. Since 2017, we have combined PCM with saline-immersion therapeutic endoscopy (SITE), as this could improve view quality (through refractive magnification, and minimal lense fogging) and lesion lifting (through buoyancy).

**Methods** The aim of our study is to review our experience of SITE-PCM-ESD cases from July 2017 to November 2019. Demographic, endoscopic, histopathological data were analysed.

**Results** ESDs were performed in 39 patients, mean age: 65-years. Six lesions were removed from the stomach, 1 from the caecum, 6 from the ascending colon, 14 from the sigmoid and 12 from the rectum. En-bloc pure-SITE-PCM-ESD resection was achieved in 28 patients (71.797%); in 3 patients (7.69%) the procedure was not completed due to the suspicion of invasive malignancy and these patients were referred for surgery.

Details of the cases managed by pure SITE-PCM-ESD are described as follows. Median specimen size was of 38mm. Histopathological examination showed: 2 villous-adenomas with low-grade dysplasia, 7 tubular-adenomas with low-grade dysplasia, 3 tubular-adenomas with high-grade dysplasia, 2 tubulovillous-adenomas with high-grade dysplasia, 11 tubulovillous-adenomas with low-grade dysplasia, 1 adenocarcinoma, 7 neuroendocrine tumors, 1 serrated-adenoma with low-grade dysplasia, 1 hyperplastic gastric polyp and 1 sessile-serrated lesion without dysplasia. R0-resection rate was 94.44%. Lymphovascular infiltration was suspected in the one case of malignancy (2.56%). Two patients suffered from early post-procedural rectal bleeding, warranting further endotherapy; no further complications were identified. To date, 28 patients (77.77%) have completed endoscopic follow-up; none of these patients have presented any evidence of disease recurrence.

**Conclusions** Our series of SITE-PCM-ESD showed favorable results in term of efficacy and safety. Further comparative randomised control studies are required to further evaluate potential advantages of this technique.

## OP67 OUTCOMES FROM THE UK ENDOSCOPIC SUBMUCOSAL DISSECTION (UK ESD) REGISTRY: IS AN ALTERNATIVE APPROACH VIABLE FOR ENDOSCOPISTS IN THE WESTERN SETTING?

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DOI 10.1055/s-0040-1704087

**Aims** To analyse UK ESD practice through the development of the first UK national ESD registry:

**Methods** The UK ESD registry was established in 2016 with 4 major tertiary referral centres which was extended to 6 centres by 2019. Data on different parameters ranging from patient demographics to procedural details were collected on a national web based electronic platform and analysed.

**Results** A total of 309 ESDs were performed with a completion rate of 99.1%. Standard ESD was performed in 73.5% whereas Knife Assisted Resection (KAR) was performed in 26.5% cases. The mean lesion size was 3.8 cm. The en bloc resection rate was 86.5%, whereas the R0 resection rate was 72.5%.

There were 11 (3.6%) cases with complications (7 significant bleeds and 4 perforations). Majority of the colorectal lesions showed a resection histology of LGD (71%) with cancer demonstrated in roughly 10% of the lesions, whereas upper GI lesions showed a higher percentage of atleast SM1 invasive cancer (stomach- 61% and oesophagus-67%)

Further details comparing standard ESD technique and KAR have been outlined in ► **Table 1**.

**Conclusions** We conclude that En bloc resection rates were higher in standard ESD, than in KAR, however, KAR was involved with fewer complications. KAR was most commonly employed for colorectal lesions. Although associated with a lower en bloc resection rate, KAR could be an attractive learning step for western endoscopists to be fully competent in standard ESD, especially in colorectal lesions, in view of the lower incidence of SM invasive cancers demonstrated in them.

► **Tab. 1**

	Standard ESD		Knife Assisted Resection (KAR)	
	En bloc	Complications	En bloc	Complications
Oesophageal (N=88)	76/78=97.4%	Bleed: 2/78 (2.6%) Perforation: 0	10/10=100%	Bleed: 0 Perforation: 0
Gastric (N=87)	76/77=98.7%	Bleed: 1/77 (1.3%) Perforation: 0	9/10=90%	Bleed: 0 Perforation: 0
Colorectal (N=128)	68/70=97.1%	Bleed: 3/70 (4.3%) Perf: 2/70 (2.9%)	20/58=34.5%	Bleed: 1/58 (1.7%) Perf: 2/58 (3.4%)

## OP68 RETROSPECTIVE MULTICENTER STUDY ON ENDOSCOPIC TREATMENT OF UPPER GASTROINTESTINAL POST-SURGICAL LEAKS

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DOI 10.1055/s-0040-1704088

**Aims** Therapeutic endoscopy plays a major role in the management of upper gastrointestinal (UGI) post-surgical leaks, with multiple endoscopic techniques being available. Data is scarce regarding clinical success and safety. Evaluate endoscopic therapy results on the management of UGI post-surgical leaks regarding number and order of therapies performed, as well as safety, clinical success and long-term follow-up

**Methods** Multicenter, international, retrospective study from 10 centers of consecutive patients who underwent endoscopic treatment of UGI post-surgical leaks.

**Results** 206 patients (50.5% male) were included. Previous surgery most often performed was sleeve gastrectomy (38.8%), followed by total gastrectomy (21.8%) and Ivor-Lewis esophagectomy (15.0%). Median time from surgery to endoscopic treatment was 16 days. Global leak closure was observed in 187 patients (90.8%). Endoscopic closure was achieved in 165 patients (80.1%), after a median follow-up of 52 days (range 0-693). In 8 patients (3.9%) in whom leak closure was not achieved, a stent was left-in-place, without leak persistence. Fourteen patients (6.8%) underwent surgery after endoscopic treatment failure, with leak closure in 12. One patient underwent radiological leak closure and one patient had spontaneous closure. Multimodal therapeutic endoscopy was necessary in 40.8% of patients (n=84; median number of different therapies: 2; range 1-6). Median number of endoscopic procedures/per patient was 3 (range 1-26). Success-rate of leak closure was 41.3% (85/206) with first endoscopic technique, 44.3% (47/106) with second, 35.6% (16/45) with third, 59.1% (13/22) with fourth technique, 80.0% (4/5) with fifth. Global rate of at least one endoscopic therapy-related adverse event (AE) was 39.3% (n=81; one AE: n=60; two AEs: n=21), being severe in 10 patients (4.9%). Leak-related mortality rate was 11.6% (n=24).

**Conclusions** Multimodal therapeutic endoscopy, despite time-consuming, allows leak closure in a significant proportion of patients, with a low rate of associated severe-AEs.

## OP69 APPLICABILITY OF COLON CAPSULE ENDOSCOPY AS PAN-ENDOSCOPY: FROM BOWEL PREPARATION, TRANSIT TIMES AND COMPLETION RATE TO RATING TIMES AND PATIENT ACCEPTANCE

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DOI 10.1055/s-0040-1704089

**Aims** Despite its noninvasive character and its potential to explore the entire gastrointestinal tract, implementation of colon capsule endoscopy (CCE) as pan-endoscopy has not yet been achieved. The applicability of CCE as pan-endoscopy is highly dependent on several quality parameters. The aim of this study was to evaluate these parameters to determine which factors need optimization.

**Methods** Participants received CCE with corresponding bowel preparation (5mg bisacodyl, 2L PEG and 2L water split-dose) and booster regimen (10mg metoclopramide and 0,5L Eziclen - half directly after and half three hours after small bowel recognition). Different quality parameters were assessed. Patient acceptance was measured by questionnaires.

**Results** A total of 462 people ingested the colon capsule. Bisacodyl was taken in 99,5%, complete PEG intake was achieved in 98,5% and complete Eziclen intake was achieved in 96,9% of the participants. Due to 11 technical failures (signal interference), 451 procedures were analyzed. The overall colon cleansing score was adequate in 76.6% and the bubbles effect scale was insignificant in 74.7%. The Z-line was objectified in 44.8%. The proportion of visualized stomach mucosa was good (>90%) in 69.6%. The small bowel cleansing was adequate in 99,1%. Median transit times were 55 minutes for the stomach, 47 minutes for the small bowel and 392 minutes for the colon. The capsule reached the descending colon in 95%. Total completion was achieved in 51.2% of the participants. Median staff reading time was 3 minutes for the stomach, 10 minutes for the small bowel and 55 minutes for the colon. Participants graded the procedure with a 7.8 (scale 0-10). There were no procedure-related serious adverse events.

**Conclusions** CCE is a safe procedure with good patient acceptance. However, technical developments are necessary to achieve complete observation of the gastrointestinal tract and bowel preparation and booster regimen need to be improved.

## OP70 ENDOSCOPIC VACUUM THERAPY (EVT) FOR TREATMENT OF ANASTOMOTIC DEHISCENCE AFTER COLORECTAL SURGERY

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**Aims** Anastomotic dehiscence after colorectal surgery is a severe complication. EVT is a promising therapeutic approach. The primary endpoint of this study was to analyze efficacy and feasibility of EVT in the management of anastomotic leakage after colorectal surgery.

**Methods** This is a prospective single-center study evaluating all consecutive patients referred for anastomotic dehiscence after colorectal surgery. Exclusion criteria were small cavity (< 1 cm) or circumferential defect. EVT procedures were performed according to product technical sheet. After a mean 3-days interval, the sponges were replaced until healing process started. Clinical success was defined as disappearance of anastomotic leakage. Treatment failure was defined as persistence of cavity.

**Results** 14 patients were evaluated between October 2017 and April 2019: 2 were excluded (< 1 cm defect). 12 patients (M=11) (median age 70 - range 40-86 yo) were included. Indications for EVT were Hartmann's stump insufficiency (n=6), anastomotic leakage after Laparoscopic Total Mesorectal Excision (Lap-TME) (n=3) and anastomotic dehiscence after Trans-anal Total Mesorectal Excision (TaTME) (n=3). A total of 169 sponges were placed in 12 patients with a median number of 12,5 per patient (range 4-31). Overall, clinical success was achieved in 7 (58.3%) in a median of 97 days (range, 15-160). 4 patients had an initial healing process followed by a subsequent deterioration requiring EVT reinsertion: 1 patient finally had a full resolution, 1 had a treatment failure, while 2 died during EVT for neoplastic progression (1) and septic complications (1). The remaining 2 patients had a treatment failure. No complications were recorded.

Stratifying, patients with an acute dehiscence (< 3 months) obtained a full resolution in 80% (8/10); while patients with a chronic one never reached it (0/4), even if not statistically significant.

**Conclusions** EVT seems a feasible and safe treatment for colorectal anastomotic dehiscence and represents a minimally invasive alternative to surgical re-treatment.

## OP71 INCIDENCE AND SURVIVAL OF HEPATOCELLULAR CARCINOMA AND BILE DUCT CANCER IN PATIENTS WITH GALLSTONES OR CHOLECYSTECTOMY: A POPULATION-BASED COHORT STUDY

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**DOI** 10.1055/s-0040-1704091

**Aims** It is debatable whether gallstones or cholecystectomy increase the risks of hepatocellular carcinoma (HCC) and bile duct cancer (BDC). We evaluated the risk and prognosis of HCC and BDC in patients with gallstones treated with or without cholecystectomy and compared them with healthy controls.

**Methods** We identified patients with gallstones (n=480,688; follow-up: 12 years, 2002-2016) and age- and sex-matched healthy controls (1:10) from Korean National Health Insurance data. The incidence and survival rates of HCC (C22.0) and BDC (C22.1/C24.0-C24.9) were compared. Possible risk factors such as sex, age, metabolic syndrome-related parameters (hypertension, obesity, hyperlipidemia, and hyperglycemia), liver enzyme levels, and smoking and drinking habits were adjusted.

**Results** Compared to controls, patients with gallstones without cholecystectomy had 4.23-fold and 4.87-fold higher incidences of HCC (107.69/10<sup>5</sup> person-year [PY]) and CCC (33.85/10<sup>5</sup> PY), respectively. Cholecystectomy was performed in 132,901 patients with gallstones (27.6%); 87.5% of them were diagnosed as acute cholecystitis, cholangitis or acute pancreatitis. Compared to patients with gallstones without cholecystectomy, the incidences of patients with gallstones treated with cholecystectomy decreased in HCC (38.43/10<sup>5</sup> PY) and BDC (13.90/10<sup>5</sup> PY). After adjustment of other risk factors, hazard ratios (HR) of HCC and BDC in patients with gallstones treated with cholecystectomy were 1.42 and 2.27, respectively, which were lower in those treated without cholecystectomy; HCC 2.74 and BDC 4.66 compared to controls. Survival rates of HCC or BDC were higher in patients with gallstones than controls. Whether cholecystectomy or not did not influence on survival rates.

**Conclusions** Risks of HCC and BDC increased in patients with symptomatic gallstones, which partially decreased after cholecystectomy. Patients with gallstones revealed better prognosis of HCC or BDC than controls.

## OP72 A RANDOMIZED TRIAL OF RECTAL INDOMETHACIN TO PREVENT POST-ESWL PANCREATITIS (THE RIPEP TRIAL)

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**DOI** 10.1055/s-0040-1704092

**Aims** Pancreatic extracorporeal shock wave lithotripsy (ESWL) is the first-line therapy for large pancreatic duct stones, and pancreatitis is the most common complication. Non-steroidal anti-inflammatory drugs (NSAIDs) proved to be an effective prophylactic medication for post-ERCP pancreatitis while little research focused on the incidence and none on the effective prevention for

post-ESWL pancreatitis. The aim of the study is to explore the effect of rectal indomethacin for post-ESWL pancreatitis.

**Methods** In this randomized controlled trial, patients with chronic pancreatitis (CP) and pancreatic stones (> 5 mm in diameter) treated with ESWL at Changhai Hospital were randomly allocated to receive rectal indomethacin or placebo 30 min before the procedure. The primary outcome was the incidence of post-ESWL pancreatitis. The severity of pancreatitis, occurrence of other ESWL-related complications and transient adverse events (TAEs) were also investigated.

**Results** From May 2016 to July 2019, 1370 patients were prospectively enrolled. The incidence of post-ESWL complications in placebo group was significantly higher than that in patients receiving rectal indomethacin (14.5% vs. 9.5%, P=0.005), with post-ESWL pancreatitis ranked the first in both groups followed by infection (1.9% vs. 0.7%, P=0.058). Rectal indomethacin can greatly reduce the incidence of post-ESWL pancreatitis (12.3% vs. 8.8%, P=0.034), and the incidence decreased significantly with the CP progression. In particular, indomethacin appeared to be protective in female patients with earlier clinical stages, idiopathic, non-type 3c diabetes, intact exocrine pancreatic function and pancreas divisum (all P< 0.05). No difference of other complications and adverse events was observed.

**Conclusions** Rectal indomethacin can greatly reduce the development of post-ESWL pancreatitis and especially benefit patients at elevated risk. (ClinicalTrials.gov number, NCT02797067.)

## OP73 ENDOSCOPIC MICRODEBRIDER-ASSISTED NECROSECTOMY FOR WALLED-OFF PANCREATIC NECROSIS

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**DOI** 10.1055/s-0040-1704093

**Aims** Debridement of infected walled-off pancreatic necrosis (WOPN) is indicated to treat ongoing infection and sepsis-related multi-organ failure. The lack of dedicated and effective accessories results in the need for time-consuming repetitive procedures. The aim of this prospective international multicenter study is to evaluate the use of a new 3.1 mm flexible microdebrider catheter (EndoRotor) to remove solid debris under direct endoscopic visualization in patients with WOPNs.

**Methods** All patients underwent prior CT scan which had to show WOPN of ≥ 6cm and ≤ 22cm in size with ≥30% solid component. Endoscopic drainage (by either LAMS, SEMS or DPS) was carried out at least three days before endoscopic microdebrider-assisted necrosectomy was performed through the gastrotoma under direct visualization. Adverse events (AE), procedure times, number of procedures until resolution, percentage decrease of solid necrosis per session, decrease of WOPN size on follow-up CT scans (21 days after final session) and time to discharge were documented.

**Results** Here we present interim data of the first 12 patients who underwent microdebrider-assisted necrosectomy within the study. No microdebrider-associated adverse events, including bleeding were reported. A mean of 1.8 interventions (range 1-4) were required with an average microdebrider procedure time of 77 minutes and a total procedure time of 180 minutes. There was a mean 63.0% reduction of solid necrosis after the first session. The mean decrease of cavity size was 86.8% comparing pre- and post-procedural CT

scans. Time from microdebrider-assisted necrosectomy to discharge averaged 6 days (range 0-12 days).

**Conclusions** Microdebrider-assisted necrosectomy for WOPN is a feasible and safe procedure that can provide very effective endoscopic clearance of solid debris without device-associated adverse events.

### OP74 METALLIC STENT MESH COATED WITH AG NANOPARTICLE SUPPRESSES STENT-INDUCED TISSUE HYPERPLASIA AND BILIARY SLUDGE IN RABBIT EXTRAHEPATIC BILE DUCT

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DOI 10.1055/s-0040-1704094

**Aims** Current therapeutic strategies are insufficient for suppressing stent restenosis after biliary stent placement. The effects of silver nanoparticles (AgNPs) coated metallic stent mesh for suppression of stent-induced tissue hyperplasia and biliary sludge formation in the rabbit extrahepatic bile duct were investigated.

**Methods** Meshes of self-expandable metal stent (SEMS) were coated with three different concentrations of AgNP to enable antibacterial and anti-inflammatory activities. Twenty-four rabbits were randomly divided into four groups of six each. Group A received bare uncoated SEMS. Groups B, C, and D received AgNP-coated SEMS of 3, 6, and 12 mg/mL of Ag concentration. The effectiveness of AgNP-coated SEMS was assessed by comparing the results of cholangiography, gross, and histological examination.

**Results** AgNP-coated SEMSs were successfully fabricated using two-step synthesis. SEMS placement was technically successful in 22 of 24 rabbits. Two rabbits were excluded because of procedure-related death. Sludge formation in AgNP-coated SEMS groups was prominently decreased compared with the control group on gross findings. Cholangiographic and histologic examinations revealed significantly less stent-induced tissue hyperplasia in AgNP-coated SEMS groups than in the control group ( $p < 0.05$  for all). There were no significant differences of cholangiographic stenosis or percentage of granulation tissue area between AgNP-coated SEMS groups ( $p > 0.05$  for all). However, the thickness of submucosal fibrosis in group D was higher than that of groups B and C ( $p < 0.05$  for all).

**Conclusions** SEMS with AgNP-coated stent mesh suppressed stent-induced tissue hyperplasia and biliary sludge formation in the rabbit common bile duct. AgNP concentrations of 3 to 6 mg/mL are preferable for Ag nano-functionalized SEMS to prevent these phenomena.

Saturday, April 25, 2020

08:30 – 10:30

Cholangioscopy: Current status

Liffey Hall 2

### OP75 THE CURRENT DIAGNOSTIC ACCURACY AND INTER-OBSERVER AGREEMENT OF VISUAL IMPRESSION WITH DIGITAL SINGLE-OPERATOR CHOLANGIOSCOPY FOR THE DIAGNOSIS OF INDETERMINATE BILIARY STRICTURES

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DOI 10.1055/s-0040-1704095

**Aims** Digital single-operator cholangioscopy (d-SOC) with cholangioscopic biopsy has shown promise in the evaluation of indeterminate biliary strictures (IBS). Some studies have suggested higher sensitivity for visual impression versus biopsies, however assessors were not blinded to previous investigations. We aimed to investigate the diagnostic accuracy and inter-observer agreement (IOA) of d-SOC in the visual appraisal of biliary strictures when blinded to history and previous results.

**Methods** A multicentre, international cohort study was performed. Cholangioscopic videos in patients with a known final diagnosis (based on pathology or at least 1 year of follow-up) were systematically scored. Anonymised videos were reviewed by 19 experts in 2 steps: 1: blinded for patients' history and investigations and 2: unblinded. Cholangioscopic features were scored on a standard proforma.

**Results** Forty-four videos were reviewed (59% male, mean age 62 years) of 19 benign and 25 malignant strictures. The sensitivity and specificity for the diagnosis of malignancy was 74.1% and 47.1% (blinded) and 72.8% and 63% (unblinded). When primary sclerosing cholangitis (PSC) cases were excluded ( $n=11$ ), sensitivity and specificity was 73.4% and 47.1% (blinded) and 75.1% and 61.1% (unblinded). The IOA for the presence of malignancy was fair for both the blinded (Fleiss' kappa (F'k) 0.243) and unblinded assessment (F'k 0.325). For individual visual features, the IOA ranged from slight to moderate for both the blinded and unblinded assessment (F'k 0.058 - 0.401 versus F'k 0.030 - 0.450). There was moderate agreement for circumferential lesions (F'k 0.401) when blinded and for villous projections (F'k 0.450) when unblinded.

**Conclusions** This study shows low sensitivity and specificity for blinded and unblinded d-SOC video appraisal of IBS, with considerable interobserver variation. There remains a need to establish consensus opinion on the optical features of biliary strictures and their individual importance in the diagnosis of cholangiocarcinoma.

### OP76 PANCREATOSCOPY-GUIDED ELECTROHYDRAULIC LITHOTRIPSY FOR THE TREATMENT OF OBSTRUCTIVE DISTAL MAIN PANCREATIC DUCT STONES: A PROSPECTIVE CONSECUTIVE CASE SERIES (PELSTONE STUDY)

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DOI 10.1055/s-0040-1704096

**Aims** Pancreatoscopy-guided electrohydraulic lithotripsy (EHL) has shown potential in the treatment of patients with obstructive chronic calcifying pancreatitis (CCP), but is used as second-line therapy after extracorporeal shock-wave lithotripsy (ESWL). We aimed to investigate the efficacy and safety of EHL as first-line therapy in patients with CCP of the distal pancreatic duct (PD).

**Methods** A prospective single center consecutive case series was performed in CCP patients presenting with obstructing stones of >5mm in the head or neck of the pancreas. Stone fragmentation was performed using EHL. The primary study outcome was technical success (i.e. ability to visualize the intraductal stones and achieve fragmentation, complete (100%) or partial (≥50%), with resolution of PD outflow obstruction. Secondary outcomes were clinical success (Izbicki pain score), adverse events and number of interventions.

**Results** Thirty-three consecutive patients were considered. Pancreatoscopy was not performed due to failure to cannulate the PD (n=5) or resolution of stones after stent placement at the initial ERP procedure (n=3). When pancreatoscopy was attempted, technical success was achieved in 24 out of 25 patients (96%), with complete and partial stone clearance in 19 patients (79.2%) and 5 patients (20.8%), respectively. In one patient the stone could not be visualized with pancreatoscopy due to distal strictures. PD clearance was achieved after a median of 2 (IQR2) ERP procedures and 1 (IQR 1) EHL procedure. In 13 patients (54.2%) a stent was placed first to facilitate pancreatoscopy at second ERP. Mean Izbicki pain score at baseline was  $62.4 \pm 21.6$  (n=24/24), and dropped significantly to  $22.3 \pm 30.3$  (15/18) at six months follow-up (p=0.006). Adverse events included pancreatitis (n=8) and cholangitis (n=1), all mild and treated conservatively.

**Conclusions** Pancreatoscopy-guided EHL is a highly effective treatment for symptomatic CCP patients with a dilated PD due to distal obstructive PD stones. Adverse events, occur relatively frequent, but are mild.

### OP77 SINGLE-OPERATOR PERORAL CHOLANGIOSCOPY-GUIDED LITHOTRIPSY FOR DIFFICULT BILIARY STONES - A PROSPECTIVE MULTICENTER STUDY

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DOI 10.1055/s-0040-1704097

**Aims** ERCP is the first choice for removal of biliary stones. In difficult stones, advanced therapeutic techniques, such as electrohydraulic lithotripsy (EHL) and laser lithotripsy (LL) have been proposed. Recently, the availability of single-operator cholangioscopy (SOC) turned these techniques more accessible and easier to perform. We sought to evaluate the clinical efficacy and safety of SOC guided-lithotripsy using EHL or LL in patients with complex biliary stones.

**Methods** A prospective study was carried out in 5 hospitals, comprising 57 consecutive patients with complicated biliary stone treated with SpyGlass DS (Boston Scientific, Marlborough, United States) guided-lithotripsy using EHL or Holmium LL. We analyzed the complete cleaning of the ducts, the incidence of adverse events, the impact of the number of stones and its location on clinical success, and the performance of the 2 lithotripsy modalities.

**Results** 42 patients (73.68%) had common bile duct/common hepatic duct stones, 8 patients (14.04%) had a single cystic stump stone and 7 patients (12.28%) had intrahepatic stones. 45 patients (78.95%) were successfully treated in one procedure and the remaining 12 patients (21.05%) required additional sessions to obtain cleaning of the ducts. 36 patients were treated with LL: 29 (85.29%) achieved clinical success in a single session with a single laser fiber. 21 patients were treated with EHL: 8 patients (38.09%) were clinically successful in a single 1-fiber session; 8 patients required 2 fibers to obtain ductal cleaning in a single session. Complications were mild in 11/51 (21.55%) patients and included fever (n = 5), mild pancreatitis (n = 4), mild cholangitis (n = 2).

**Conclusions** Guided-lithotripsy SOC using EHL or LL in patients with difficult biliary stones is very effective and is associated with transient and mild complications. Although further studies are needed there is an apparent advantage in the use of laser technology.

### OP78 A SINGLE-CENTRE RETROSPECTIVE STUDY INTO DIAGNOSIS AND MANAGEMENT OF MIRIZZI SYNDROME USING SINGLE-OPERATOR PERORAL CHOLANGIOSCOPY

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DOI 10.1055/s-0040-1704098

**Aims** Mirizzi Syndrome was first described in 1948 and refers to obstruction of the bile duct by impacted gallstones in the cystic duct or gallbladder. Management with conventional ERCP is difficult. We report our single centre experience using single operator cholangioscopy and electrohydraulic lithotripsy.

**Methods** All patients with a diagnosis Mirizzi syndrome and at least one failed stone clearance at conventional ERCP underwent Spyglass DS cholangioscopy at our centre from 2013-2019 and were included for analysis. From clinical records and the endoscopy reporting tool; patient demographics, previous procedures, stone visualisation, procedure success, complications and ongoing management were assessed.

**Results** Data on 34 patients who had Mirizzi syndrome diagnosed either pre or post ERCP was analysed (64% female, mean age 59.9 years (range 24-88)). In 20/34 cases Mirizzi syndrome was diagnosed on prior imaging. Of the other 14 cases; 5/34 were referred for cystic duct stones, 8/34 had suspected difficult CBD/CHD stones and 1 had a suspicious stricture. At cholangioscopy, stone(s) causing Mirizzi syndrome were visualised in 33/34 cases (97.1%), 30/33 (90.9%) of those who had stones visualised had successful stone clearance.

2/34 (5.9%) patients needed 3 procedures (all with cholangioscopy) and 4/34 (11.8%) needed 2 procedures (6 with cholangioscopy and 2 without). Patients had undergone a mean of 2 ERCPs (range 1-9) prior to referral. One patient had self-limiting sepsis but otherwise there were no early complications. Of patients (n=4) who did not achieve clearance, 2 were referred for definitive surgery and 2 were managed with recurrent stenting.

**Conclusions** The management of Mirizzi syndrome is challenging using conventional ERCP, patients may undergo multiple procedures. Visualisation of the obstructing stone using cholangioscopy provides a high probability of stone clearance using direct lithotripsy. It may reduce the need for additional interventions or complex surgery; so, should be considered early in the management of Mirizzi syndrome.

### OP79 CHOLANGIOSCOPY-GUIDED LITHOTRIPSY IN THE TREATMENT OF DIFFICULT BILE DUCTS STONES- DATA FROM TWO TERTIARY REFERRAL CENTERS

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DOI 10.1055/s-0040-1704099

**Aims** To evaluate the efficacy and safety of D-SOC- guided lithotripsy in cases of difficult bile ducts stones and to analyze factors, related to adverse events and procedure time.

**Methods** Retrospective review of prospective databases from two tertiary referral centers including 38 patients with difficult bile ducts stones was performed. All the patients had previous ERCPs and at least one unsuccessful attempt for stone removal. We performed DSOC-guided lithotripsy using EHL or LL, following standard protocol. The primary endpoint was achieving ductal clearance, confirmed by negative occlusive cholangiogram. We also explored the incidence of complications, factors, associated with them and variables affecting the procedure duration.

**Results** For the study period (03.2016-04.2019) 38 patients were treated with D-SOC- guided lithotripsy (33 with LL and 5 with EHL). Complete

ductal clearance was achieved in 92,1%, in 78,9 % in one session. Average number of procedures until complete stone removal was 1,22 (1-3). The mean procedure time for EHL was 83 min and for LL 115 min. Complications were observed in 4 (10,5%) patients. All were defined as mild. There was no correlation between age, size of stone, duration of the procedure and amount of saline used during lithotripsy and occurrence of complications. The presence of a stricture, barrel shaped or irregular shaped stones was associated with increased risk of complications ( $p < 0.05$ ). Large stones, multiple lithiasis, intrahepatic location and failed previous EPLBD/ML were related to prolonged procedure time ( $p < 0.05$ ).

**Conclusions** SOC- guided lithotripsy is highly effective and safe procedure. The presence of a distal CBD stricture and complex shape of stones is associated with higher risk of procedure complications

### OP80 DIGITAL-SINGLE-OPERATOR PERORAL CHOLANGIOSCOPY GUIDED BIOPSY VS. ERCP GUIDED BRUSHING FOR INDETERMINATE BILIARY STRICTURES - A PROSPECTIVE, RANDOMIZED MULTICENTER TRIAL

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van Geenen E<sup>4</sup>, Dertmann T<sup>1</sup>, Neuhaus H<sup>1</sup>, Reddy N<sup>5</sup>, Ramchandani M<sup>5</sup>

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DOI 10.1055/s-0040-1704100

**Aims** Accurate diagnosis of indeterminate biliary strictures is challenging but important for patient prognostication and further management. Biopsy under direct cholangioscopic vision might be superior to standard endoscopic retrograde cholangiopancreatography (ERCP) techniques such as brushing or biopsy. Our aim was to investigate whether digital single operator cholangioscopy (DSOC) compared to standard ERCP work-up improves the diagnostic yield in patients with indeterminate biliary strictures.

**Methods** Patients with an indeterminate biliary stricture on the basis of MRCP were randomized to standard ERCP visualization with tissue brushing (Control Arm, CA) or DSOC visualization and DSOC guided biopsy (Study Arm, SA). This was a prospective international multicenter trial with a procedure blinded pathologist.

**Results** First sample sensitivity of DSOC guided biopsies was significantly higher than ERCP guided brushing (SA 68.2% vs CA 21.4%,  $P < 0.01$ ). The sensitivity of visualization (SA 95.5% vs. CA 66.7%;  $P = 0.02$ ) and overall accuracy (SA 87.1% vs. CA 65.5%,  $P = 0.05$ ) were significantly higher in the SA compared to the CA while specificity, positive predictive value, and negative predictive value showed no significant difference. Adverse events were equally low in both arms.

**Conclusions** DSOC guided biopsies were shown to be safe and effective with a higher sensitivity compared to standard ERCP techniques in the visual and histopathological diagnosis of indeterminate biliary strictures.

### OP81 THE BENEFITS OF ADDING DIGITAL CHOLANGIOSCOPY IN THE EVALUATION AND TREATMENT OF POST-TRANSPLANT BILIARY COMPLICATIONS

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DOI 10.1055/s-0040-1704101

**Aims** We aim to explore diagnostic, therapeutic benefits and safety profile of Digital Single-Operator Cholangioscopy (DSOC) in patients with biliary complications after liver transplantation (LT) in cases, failed to be managed with ERCP.

**Methods** We performed a single centre prospective study on the role of DSOC in patients with post-LT biliary complications, enrolled in the period 2016 - 2019. Over this period 21 patients with biliary obstruction after orthotopic LT underwent ERCP, in 9 of cases without success. All 9 were further evaluated using DSOC. Technical success of DSOC consisted in visualization of biliary complication (1) and endoscopic treatment (2). The peri-procedural prophylaxis includes 3-5 days systemic wide spectrum antibiotics.

**Results** Average patient age was 50.2 years (77.7% male). Six patients (6/9) were diagnosed with anastomotic stricture, two (2/9) with non-anastomotic stricture and one was proven to have bile cast syndrome. We achieved accurate diagnosis in 8/9 (88.8%) patients, and 7/9 (77.7%) were successfully managed during cholangioscopy. In 6 cases the strictures were successfully visualized and cannulation under direct visual control was achieved. One patient, thought to have long anastomotic CBD stricture on imaging modalities including ERCP, further evaluated with cholangioscopy was found to have bile cast syndrome. The latter was successfully washed out during the procedure, and patient demonstrates stable resolution of cholestasis in follow up of one year. In 2/9 cases we didn't achieve the therapeutic aim - one patient with large size of anastomotic dehiscence and one with multiple non-anastomotic strictures. Adverse events: One patient (1/9) developed mild pancreatitis, completely resolved in three days.

**Conclusions** Our study demonstrates DSOC benefits translated into an increase of endoscopic treatment success rate. In our regard, cholangioscopy could spare the need of more aggressive percutaneous interventions and surgical revisions in selected patients. No serious adverse events related to the procedure were observed.

### OP82V SPYGLASS CHOLANGIOSCOPY AND SPYBASKET FOR THE REMOVAL OF A POST-CHOLECYSTECTOMY SURGICAL CLIP FROM THE BILE DUCT

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DOI 10.1055/s-0040-1704102

A 56 year-old female had a cholecystectomy for calculi in 2010. She re-presented in 2018 with recurrent right upper quadrant pain. A CT performed demonstrated a surgical clip within the bile duct. An ERCP with sphincterotomy and sphincteroplasty was performed but the clip could not be cleared with balloon tawl. SpyGlass cholangioscopy was performed and using SpyBasket the clip was removed under direct vision.

The case illustrates the benefit of direct vision in the assessment of causes of biliary obstruction and the potential use of the cholangioscope-directed SpyBasket in foreign body removal from the biliary tree.

### OP83V PORTAL HYPERTENSION CHOLANGIOPATHY. A RARE CASE DIAGNOSED BY CHOLANGIOSCOPY

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DOI 10.1055/s-0040-1704103

64-year-old male follow up of alcoholic liver cirrhosis with portal hypertension that in abdominal ultrasound of hepatocarcinoma screening, was evidenced dilatation of the intrahepatic bile duct.

The study was completed with MR cholangiography confirming findings and suggesting the possibility of cholangiocarcinoma. ERCP was performed, demonstrating at the level of the bilateral intrahepatic bile duct, rounded repelishment defects with cord disposition. The cholangioscopy showed rounded and bluish ductal lesions that imprint on the biliary lumen, with respected mucosa compatible with portal hypertension cholangiopathy. These findings

were confirmed by CT-scan, without evidence of portal thrombosis or cavernomatosis.

## OP84V PANCREATIC DUCT STONE CLEARANCE WITH SPY BASKET

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**DOI** 10.1055/s-0040-1704104

A 63 year old man presented with recurrent acute pancreatitis secondary to chronic calcific pancreatitis. There was a 9 mm calcified stone obstructing the duct in the neck of pancreas, with upstream duct dilatation. At an index ERCP stone extraction was unsuccessful.

At this procedure a pancreatic sphincteroplasty was performed, allowing insertion of the Spyglass scope. The stone was fragmented with electrohydraulic lithotripsy (EHL). Some fragments migrated upstream to the tail of pancreas. Using a Spy basket these fragments were removed under direct vision. Spy basket may have a role in removing stones from areas where conventional methods often fail.

## OP85V TREATMENT OF LARGE MAIN BILE DUCT STONES IN A PATIENT WITH 4/5 GASTRECTOMY AND ROUX-EN-Y ANASTOMOSIS USING ANTEROGRADE CHOLANGIOSCOPY AND ELECTROHYDRAULIC LITHOTRIpsy AFTER HEPATICOgASTROSTOMY

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**DOI** 10.1055/s-0040-1704105

Treatment of benign biliary obstruction is a challenging situation in patients with altered anatomy. ERCP with single or double balloon enteroscopy can be difficult, with an overall cannulation success of about 60%. We describe the case of a 86-years old women with history of 4/5 gastrectomy and Roux-en-Y anastomosis and main bile duct symptomatic lithiasis, with failure of two enteroscopies. After performing hepaticogastrostomy, we performed an antero-grade electrohydraulic lithotripsy using an ultraslim videogastroscope as a cholangioscope. A guidewire was placed during cholangioscopy to place a transpapillary biliary metallic stent to enable complete biliary stones clearance.

## OP86V INTRADUCTAL TUBULOPAPILLARY NEOPLASM (ITPN) AN UNUSUAL PANCREATIC LESION - A CASE REPORT

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**DOI** 10.1055/s-0040-1704106

A 61-year-old woman was referred for mild biliary and pancreatic duct ectasia on MRI.

EUS revealed a 12 mm, isoechoic, intraductal pancreatic head lesion. ERCP-pancreatography showed a polypoid lesion suggesting intraductal papillary mucinous neoplasm (IPMN).

Final histopathology of surgical specimen (duodenopancreatectomy) revealed an uncommon entity: Intraductal tubulopapillary neoplasm (ITPN).

ITPN is a subtype of premalignant pancreatic neoplasms, distinct from IPMN. ITPN show tubulopapillary growth, cuboidal to columnar and scarce mucin. Immunohistochemical studies may also be distinctive.

ITPN has a more favorable prognosis. The role of EUS and pancreatoscopy has to be determined but might potentially help in preoperative diagnosis.

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**Saturday, April 25, 2020**

**11:00 – 13:00**

**Advances in endoluminal endoscopy**

**Liffey Meeting Room 2**

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## OP87 DEVELOPMENT AND CLINICAL IMPLEMENTATION OF AN ENDOCYTOscOPY SCORING SYSTEM OF DYsPLASIA IN THE BARRETT'S ESOPHAGUS: PRELIMINARY RESULTS

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**DOI** 10.1055/s-0040-1704107

**Aims** To evaluate the diagnostic capability of endocytoscopy (ECS) [model GIF-H290 EC, Olympus] in detecting dysplasia in Barrett's esophagus (BE).

**Methods** For each procedure, the BE segment was at first evaluated for lesion localization by high definition-white light endoscopy. This was followed by further tissue characterization by assessment of the vascular network through magnifying narrow band imaging. Then the tissue of interest was rinsed with approximately 8 ml N-acetylcysteine, prior to spraying the staining mixture of 0.05% crystal violet (10ml) and 1% methylene blue (1ml). After 90 seconds of absorption time, ECS was performed to assess architectural and cytological features of the tissue. A comparable procedure was conducted *ex vivo* for imaging the EMR specimens.

**Results** This on-going study of ECS in BE patients included at the moment 30 patients. We imaged 43 sites with ECS, of which we have 32 targeted biopsies containing all stages of dysplasia in BE. Imaging was considered to be classifiable in 56% (n=24) and unclassifiable in 44% (n=19). Nevertheless, poor resolution of images (51%) due to patient-related factors and low quality of staining (56%) often made it hard to interpret *in vivo* ECS images. Overall, we are able to classify images into three categories including BE without dysplasia, BE with dysplasia and EAC *in vivo* and *ex vivo*.

**Conclusions** The ECS could provide clear images in which distinct architectural and cytological features could be identified. However, certain patient-related as well as procedure-related factors can trouble clear ECS imaging and thus diagnoses in BE patients. In order to implement ECS into clinical practice, we will build an *in vivo* atlas with representative images of each category and investigate the use of an artificial intelligence-aided diagnostic system that could help to enable a highly accurate diagnosis.

## OP88 INITIAL EXPERIENCE WITH SAME SESSION ENDOSCOPIC FUNDOPLICATION AFTER PER-ORAL ENDOSCOPIC MYOTOMY (POEM+F) - SHORT TERM CLINICAL OUTCOMES FROM A SINGLE CENTER

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**DOI** 10.1055/s-0040-1704108

**Aims** Post-POEM gastroesophageal reflux (GER) is reported in up to 50% patients. POEM with endoscopic fundoplication (POEM+F) is a novel NOTES procedure combining endoscopic fundoplication with POEM. This study reports feasibility, safety and short-term outcomes after POEM+F especially with reference to prevention of post POEM GER.

**Methods** Retrospective analysis of a prospectively maintained database of POEM+F for achalasia cardia (AC) over a 10-month period (Feb to Nov. 2019) was performed. Abstracted technical parameters included technical success, procedure duration and additional time for fundoplication. Clinical parameters included adverse events, pre-and post-POEM+F Eckardt scores, GERD-Q score, EGD and 24-hr pH in follow-up.

**Results** N = 20 (11 males, mean age 40.9 years [18-67]). POEM+F was technically successful in all patients. Mean total procedure time = 77.5 min (55-145) and time for additional fundoplication = 42.5min (30-105). No AEs encountered. All had oral feeds after 24 hours and discharged within 48 hours. Median follow-up = 4 months (IQR 1-10). Dysphagia improved in all [pre-POEM+F Eckardt score - 8.25 (6-10) vs. post-POEM+F score - 1 (0-2)] ( $p=0.001$ ). At 1-month follow-up EGD - intact fundoplication wrap -17(85%) patients. GERD-Q scores normal (< 2) in 19/20 (95%), one patient had score of 5 indicating 50% probability of GERD. Grade A esophagitis noted in 3 (15%); in two of these patients EGD revealed loosened wrap. 24-hr pH monitoring at 1 to 3-months in 10 patients showed normal DeMeester's scores in 9 (90%); one had a high score but had no esophagitis or reflux symptoms. Overall, 16/20 patients (80%) were GERD-free during follow up.

**Conclusions** POEM+F is a safe procedure with short term follow up demonstrating significant reduction in post POEM GER but long-term follow-up required to validate these results.

### OP89 GASTRIC PERORAL ENDOSCOPIC PYLOROMYOTOMY FOR THE TREATMENT OF REFRACTORY GASTROPARESIS: A SYSTEMATIC REVIEW AND META-ANALYSIS

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DOI 10.1055/s-0040-1704109

**Aims** Gastric peroral endoscopic pyloromyotomy (G-POEM) is a novel minimally invasive intervention for treating refractory gastroparesis. We conducted a systematic review and meta-analysis to determine the clinical success and safety of G-POEM.

**Methods** The systematic review was conducted following the PRISMA guidelines. Pubmed, EMBASE, Cochrane, were searched during January 2013 to February 2019. The literature was selected independently by two reviewers according to the inclusion and exclusion criteria. The statistical analysis was carried out using Comprehensive Meta-Analysis software version 2.

**Results** A total of 8 studies involving 259 patients were included in the final analysis. The major cause for gastroparesis were idiopathic (n=106, 40.93%), postsurgical (n=72, 27.80%), diabetes-associated (n=68, 26.25%), and other causes (n=13, 5.02%). After G-POEM, mean Gastroparesis Cardinal Symptom Index (GCSI) score was significantly decreased by 1.21 points (95%CI, 0.63-1.78,  $P<.001$ ,  $I^2=80\%$ ) and 4-hour retention on gastric emptying scintigraphy (GES) was significantly reduced by 24.77% (95% CI, 15.60%-33.94%,  $P<.001$ ,  $I^2=61\%$ ). The pooled rate of normal GES at 4 hours were 50.5% (95% CI, 41.0%-60.0%) and the pooled complication rate of G-POEM which was occurred in 35 patients (14.2%; 95% CI, 5.7%-31.3%). The most frequently reported complications were pain, mucosal perforation, difficulty swallowing and nosocomial pneumonia. None of these studies reported severe and fatal complication related to G-POEM.

**Conclusions** G-POEM is an effective and safe technique for refractory gastroparesis. Further randomized comparative studies of G-POEM and other therapeutic methods are warranted to determine the most effective treatment modality for refractory gastroparesis.

### OP90 BOUGIECAP DILATATION DEVICE: NOVEL ENDOSCOPIC METHOD FOR TREATMENT OF OESOPHAGEAL STRICTURES-RESULTS FROM A MULTICENTRE STUDY

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DOI 10.1055/s-0040-1704110

**Aims** A novel dilatation device, BougieCap (Ovesco, Germany), allows both tactile and optic feedback of the dilatation procedure without the need for fluoroscopy. The aim of this study was to assess the safety and efficacy of this device in a prospective cohort of patients.

**Methods** Patients with benign oesophageal strictures and symptoms of dysphagia were recruited from 3 centres in the UK and Germany for planned dilatation with the BougieCap. The device is a single use transparent conical cap which is fixed to the tip of the endoscope. Once in place, the endoscope is inserted and positioned in front of the stricture and by pushing forward and rotating with the endoscope, enables the conical cap to dilate the mucosa. The primary outcome measure was technical success of dilatation. Secondary outcome measures were improvement in symptoms of dysphagia, assessed by the Dysphagia Handicap index (DHI) before and 14 day after the procedure, and adverse events.

**Results** 104 patients with benign oesophageal strictures underwent BougieCap dilatation between February 2018 to September 2019. Aetiology of strictures were peptic 63%, radiation 15%, anastomotic 7%, caustic 6%, EoE 5%, post-ESD/EMR 4%. Mean diameter of strictures was 5 mm ( $\pm 2.3$ ). Bougienage was successful in 97%. In 3 cases, with a narrow long stricture, bougienage failed because of high resistance at the site of the stricture causing buckling of the endoscope in the pharynx. Symptoms of dysphagia improved after bougienage (53 points Day 0 v 21 points day 14,  $p<0.01$ ). No severe adverse events were reported.

**Conclusions** Endoscopic treatment of benign strictures using the BougieCap is highly successful and safe. It enables direct visual and tactile control of the bougienage procedure with control of mucosal damage within the strictured area. This might help to adapt treatment more precisely to the stricture. Symptoms of dysphagia are improved in short-term follow-up.

### OP91 ENDOSCOPIC STENTING VERSUS ENDOSCOPIC VACUUM THERAPY IN THE MANAGEMENT OF UPPER GASTROINTESTINAL TRANSMURAL DEFECTS: A SYSTEMATIC REVIEW AND META-ANALYSIS

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DOI 10.1055/s-0040-1704111

**Aims** Surgical management of gastrointestinal (GI) transmural defects like perforations, leaks, and fistulas are associated with high morbidity and mortality rates. Several endoscopic techniques are now available, and endoscopy has become the first-line approach to manage these conditions. Among the endoscopic therapies, placement of a self-expanding metal stents (SEMS) is the most widely used therapy. Whereas, endoscopic vacuum therapy (EVT) has recently emerged as a safe and effective tool that promotes healing via macrodeformation, microdeformation, changes in perfusion, exudate control, and

bacterial clearance. We aimed to conduct a systematic review and meta-analysis of available literature in an attempt to compare SEMS and EVT for the management of upper GI transmural defects.

**Methods** This systematic review was conducted according to the PRISMA guidelines. Searches were performed without any language restrictions using MEDLINE, EMBASE, Central Cochrane, Latin American, and Caribbean Health (LILACS) databases from their dates of inception to October 2019. Gray literature, as well as manual searches, were also performed. Studies comparing SEMS and EVT to treat upper GI transmural defects were included.

**Results** Out of a total of 5,900 citations, five studies with a total of 274 patients met the inclusion criteria and were eligible for analysis. All included studies were observational. Successful fistula closure was significantly higher in the EVT group, corresponding to a 21% higher fistula closure rate as compared to SEMS (RD 0.21 (95%CI 0.10 - 0.32); p-value 0.0003). EVT was also associated with an 11% statistically significant lower mortality as compared SEMS group (RD 0.11 (95%CI 0.20 - 0.03); p-value 0.009). However, the incidence of adverse events, hospital stay, and duration of treatment showed no statistically significant difference between the two groups (p-value >0.05).

**Conclusions** EVT is superior to SEMS for fistula closure in the upper GI tract. Moreover, EVT also resulted in a decrease in mortality compared to SEMS.

## OP92 OVERSTITCH SX ENDOSCOPIC SUTURING SYSTEM FOR GASTROINTESTINAL APPLICATIONS: A MULTICENTER EUROPEAN REGISTRY

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DOI 10.1055/s-0040-1704112

**Aims** The aim of this registry is to collect demographic, procedural characteristics and follow-up (FU) outcomes of endoscopic suturing from multiple european centers using OverStitch Sx.

**Methods** A retrospective analysis of a prospectively collected series of any patient who underwent an endoscopic suturing procedure using the OverStitch Sx for a gastrointestinal application from January 2018 to November 2019 was performed.

This registry includes five main groups: Closure of full thickness defects, closure of mucosal defects, Fixation of endoprosthesis, GI Bleeding, Other.

**Results** To date 107 patients have been entered into the registry. 9 European centers contributed to this first collection with a varying number of procedures from each center (max: 43; min: 1).

There were no cases of failure to introduce the device to the target area. Furthermore, suturing was technically achieved as intended in 106 cases. The total clinical success rate was 85.9%.

In the group of closure of mucosal defects, FU has been reported for 10 patients (range: 90 days-1 year) with a 100% success rate. Patients who underwent fistula closure had a follow-up range of 30 to >90 days with a clinical success rate of 61.5%. All cases of perforation were successfully closed initially with a continued success rate of 94.4%. Closure of post-op leaks was performed in 7 patients with a clinical success rate of 80 %. 30 stents (located in the esophagus: 20; stomach: 5 and duodenum: 5) were fixed by suturing with a continued success-rate in patients with reported FU ranging from 30 to 90 days of 86.6 %. Other procedures included all bariatric revision procedures. FU has been reported for 3 patients with a 100% success rate.

**Conclusions** This data demonstrates safety and feasibility of endoscopic suturing for several GI indications. This European registry is a valuable tool to pool outcomes and to address future research directions.

## OP93 ENDOSCOPIC MANAGEMENT OF POST-OPERATIVE ANASTOMOTIC LEAKAGE OR FISTULA AFTER ESOPHAGOGASTRIC RESECTION FOR MALIGNANCY: A FRENCH MULTICENTER EXPERIENCE

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DOI 10.1055/s-0040-1704113

**Aims** Esophagectomy remains the standard care for a vast proportion of esophageal or esophagogastric lesions. This procedure is associated in 10% of cases with anastomotic fistulas. Endoscopic management of post-operative anastomotic complications has been mostly reported with esophageal stents. Recently, internal drainage by double pigtail stents has been introduced for managing these complications. Our aim was to assess the overall efficacy of the endoscopic treatment for anastomotic leaks after esophagogastric resection for cancer.

**Methods** We conducted a multicenter retrospective study in 5 french reference centers for digestive endoscopy including 68 patients operated between January 2016 and December 2018. We included patients with anastomotic leakage following surgical resection of cancers of the esophagus or the esophagogastric junction. The primary outcome was the efficacy of the endoscopic management on fistula closure. The secondary outcomes were the efficacy of internal drainage with a double pigtail stent or anastomotic coverage with a self-expandable metal stent (SEMS), the number of endoscopic treatment sessions needed, the factors associated with treatment success, and the incidence of anastomotic esophageal strictures.

**Results** 68 patients were included, with 46 men and 22 women, and a mean  $\pm$ SD age of 61 $\pm$ 11 years. 44% had an Ivor Lewis procedure, 16% a tri-incisional esophagectomy, and 40% a total gastrectomy. 51% had received neoadjuvant chemotherapy, 12% neoadjuvant chemoradiotherapy, and 37% did not receive any neoadjuvant treatment. Overall endoscopic treatment was effective in 90% (61/68) of the patients. The efficacy of internal drainage and anastomotic coverage were 95% and 79% respectively (p=0.06). The mortality rate was 3%. In univariate analysis, the only predictor of successful endoscopic treatment was the use of internal drainage (p=0.002).

**Conclusions** Endoscopic management of early postoperative leakages is successful in 90% making it possible to avoid highly morbid surgical revisions. Internal endoscopic drainage should be considered as the first-line endoscopic treatment of anastomotic fistulas complicating esophagogastric cancer resection surgery whenever technically feasible.

## OP94 WATER-ASSISTED COLONOSCOPY AND POLYPECTOMY: FIRST INTERNATIONAL DELPHI CONSENSUS STATEMENTS

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► **Tab. 1** Results of water-assisted colonoscopy DELPHI assessment

Domains	Statements	Evidence	Consensus (Agreement)
Technique definitions	1) In Water Immersion (WI) colonoscopy water is infused to facilitate scope progression and cecal intubation; gas insufflation (GAS, room air or carbon dioxide) may be used as needed during insertion; most of the infused water is aspirated during withdrawal. 2) Water exchange is a standardized insertion technique in which infused water is removed mainly during insertion to allow progression in clear water, without any gas insufflation and removing all residual gas pockets trying to achieve the best possible degree of colon cleanliness.	1) moderate quality evidence (9 RCT, 1 retrospective study) WI +; WE - 2) high quality evidence (15 RCT, 1 retrospective study) WI -; WE +	1) Yes (98%) 2) Yes (100%)
Procedural outcomes. Impact on bowel cleanliness, adenoma detection and pain score.	3) In both unsedated and sedated colonoscopy (excluding deep sedation and general anaesthesia), cecal intubation rate can be higher using water immersion or water exchange than gas insufflation colonoscopy. 4) Compared with gas insufflation colonoscopy, water exchange cecal intubation time requires an average of 2-4 additional minutes. 5) Water exchange colonoscopy increases total procedure time by a mean of 2 minutes compared with gas insufflation colonoscopy. 6) Water exchange colonoscopy is associated with higher quality of the bowel preparation. 7) Water exchange colonoscopy is associated with higher adenoma detection rate than gas insufflation colonoscopy. 8) Use of WI or WE during insertion is associated with less patient discomfort when compared to gas insufflation colonoscopy.	3) Moderate quality evidence (1 MA, 9 RCT) WI +; WE + 4) low quality evidence (4 MA, 11 RCT) WI -; WE + 5) moderate quality evidence (2 MA, 20 RCT, 1 performance improvement study) WI -; WE + 6) moderate quality evidence (11 RCT, 2 MA) WI -; WE + 7) low quality evidence (3 RCT, 4 MA) WI -; WE + (9 high quality evidence (2 MA, 6 RCT) WI +; WE +	3) Yes (88%) 4) Yes (94%) 5) Yes (98%) 6) Yes (98%) 7) Yes (85%) 8) Yes (97%)
Underwater polypectomy or endoscopic mucosal resection	9) Underwater endoscopic mucosal resection increased the proportion of R0 and en-bloc resections for 10-20 mm non-pedunculated colorectal lesions. 10) Available studies suggest that complications in underwater polypectomy and endoscopic mucosal resection seem to be comparable with conventional endoscopic mucosal resection.	9) very low quality evidence (2 MA, 1 RCT, 1 observational prospective study, 1 retrospective study) WI, not applicable; WE, not applicable 10) very low quality evidence (2 MA, 1 RCT, 1 retrospective study) WI, not applicable; WE, not applicable 11) low quality evidence (8 prospective studies, 3 retrospective studies) WI, not applicable; WE, not applicable	9) Yes (94%) 10) Yes (95%) 11) Yes (95%)

ADR, adenoma detection rate; BBPS, Boston Bowel Preparation scale; GAS, air or carbon dioxide (CO<sub>2</sub>); MA, meta analysis; RCT, randomized controlled trial; UWP, underwater polypectomy, UEMR, underwater endoscopic mucosal resection; WE, water exchange colonoscopy; WI, water immersion colonoscopy. The "+" sign after the technique acronym means that the technique meets the content of the statement. The sign "-" means that it does not. Authors not included in authorship due to space limit: Silvia Paggi, Arnaldo Amato (Gastroenterology Unit, Ospedale Valduce, Como, Italy); Mauro Liggi, Donatella Mura (Digestive Endoscopy Unit, Sirai Hospital, ASSL Carbonia, Italy); Chih-Wei Tseng (Dalin Tzu Chi Hospital, Buddhist Tzu Chi Medical Foundation, Chiayi, Taiwan).

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DOI 10.1055/s-0040-1704114

**Aims** Water immersion (WI) and water exchange (WE) are colonoscopy techniques utilizing water for colonoscopy practice. Controversies exist about their definitions, impact on some procedure outcomes, issues related to underwater resection of colorectal lesions (UWP). We conducted an international Delphi consensus among expert endoscopists with interest in WI, WE or conventional colonoscopy to address these controversial issues through a systematic search of literature.

**Methods** A multi-society taskforce, I WATERS [International Water-Aided Techniques in Endoscopy (Education) and Research Society], was assembled to evaluate evidence-based statements on WI, WE and UWP: technique definitions; impact on procedural outcomes, bowel cleanliness and adenoma detection rate (ADR); and outcomes of UWP. The quality of evidence was appraised using the GRADE framework, consensus was defined as reaching 80%+ agreement on each statement. Responses were returned anonymously.

**Results** A three-round Delphi process was conducted, statements were revised by the organizers based on respondents' comments. 56 colonoscopists (16 countries) participated, 30% were endoscopists with great expertise but not routinely using WI or WE, with the aim to minimize possible bias. Consensus in the final round was reached for 11 evidenced-based statements (► **Table 1**). In particular, WE improves bowel cleanliness and increases adenoma detection rate, both techniques decrease procedure pain. UWP can facilitate resections and improve outcomes.

**Conclusions** This first Delphi process related to WI, WE and UWP enables and facilitates improved understanding of the techniques. The results of the systematic search of the literature favors WI, WE and UWP over gas insufflation colonoscopy regarding some key colonoscopy outcomes.

## OP96 OUTCOMES FROM THE UK PURASTAT REGISTRY - A MULTICENTRE PROSPECTIVE OBSERVATIONAL STUDY TO EVALUATE THE ROLE OF PURASTAT IN THE MANAGEMENT OF GASTROINTESTINAL BLEEDING (POPS)

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DOI 10.1055/s-0040-1704116

**Aims** PuraStat is a novel haemostatic agent without the risk of thermal injury, perforation or loss of mucosal views associated with other treatments such as heat therapy, clips or haemostatic powders. Our aim was to evaluate the efficacy of PuraStat in the prevention and treatment of gastro-intestinal bleeding.

**Methods** This is a prospective analysis of PuraStat use in the UK, with 6 tertiary referral centres open to recruitment. Data was collected on procedure & lesion details, haemostasis management and complications for endoscopies where PuraStat was used.

**Results** 226 procedures were included across 3 indications: 198 high risk resection, 6 upper gastro-intestinal bleeding (UGIB) and 22 radiation proctopathy. PuraStat was used for immediate haemostasis in 100 bleeding episodes, of which 92 were as primary agent and 8 as secondary agent (after failure of alternative initial therapy) and for prevention of delayed bleeding in 177 cases (see ► **Table 1**). PuraStat was additionally used in 22 radiation proctopathy cases, as sole therapy in 14 and secondary therapy in 8, with improvement in patient reported symptom score and haemoglobin. The average volume of PuraStat used across all indications was 0.43mls for haemostasis and 2.33mls for prevention of delayed bleeding. No PuraStat related complications were reported.

**Conclusions** Our data shows PuraStat is safe and effective for a range of indications, with most use within high risk resections. It shows high efficacy in both immediate haemostasis and prevention of delayed bleeding. We believe PuraStat is a promising new agent in the prevention and management of gastro-intestinal bleeding.

► **Tab. 1** Haemostatic efficacy of PuraStat

Indication	Procedures n=204 (n)	Immediate haemostasis n=100 (n, %)	Prevention of delayed bleeding n=177 (n, %)
High risk resection	198	90/98 (91.8%)	169/173 (97.7%)
UGIB	6	2/2 (100%)	4/4 (100%)
Overall	204	92/100 (92.0%)	173/177 (97.7%)

## OP97V SUCCESSFUL GASTRO CUTANEOUS FISTULA CLOSURE WITH ENDOSCOPIC SUTURING SYSTEM

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DOI 10.1055/s-0040-1704117

To describe a new closure technic for gastrocutaneous fistula (GCF).

Case description and video.

73-year-old man with hypopharyngeal tumor, requiring percutaneous gastrostomy (PEG) for eleven months. After removal, the patient presented clinic of GCF (gastrointestinal content leakage and signs of infection), confirmed with computerized tomography. Sixteen months later, the fistula persisted despite infection resolution and pantoprazole. Endoscopic closure was performed, consisting in mucosal resection around the internal orifice followed by endoscopic suturing with Overstitch system, intensifying pantoprazole therapy. Two weeks later the patient showed no clinic of GCF.

Endoscopic suturing might be an effective and safe technique for fistula closure.

Thursday, April 23, 2020

08:30 – 10:00

Take a pill

Wicklow Meeting Room 3

## OP98 CHANGES IN PERFORMANCE OF SMALL BOWEL CAPSULE ENDOSCOPY BASED ON NATIONWIDE DATA FROM A KOREAN CAPSULE ENDOSCOPY REGISTRY

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DOI 10.1055/s-0040-1704118

**Aims** Capsule endoscopy (CE) is widely used for the diagnosis of small bowel diseases. The clinical performance and complications of small bowel CE, including completion rate, capsule retention rate, and indications, have been previously described in Korea. This study aimed at estimating the recent changes in clinical performance and complications of small bowel CE based on 17-year data from a Korean capsule endoscopy registry.

**Methods** CE registry data from 35 hospitals were retrospectively analyzed. Clinical information, including completion rate, capsule retention rate, and indications, was collected and analyzed. In addition, the most recent 5-year data for CE examinations were compared with the previous 12-year data.

**Results** A total of 4,650 CE examinations were analyzed. The most common indication for CE was obscure gastrointestinal bleeding (OGIB). The overall incomplete examination rate was 16% and the capsule retention rate was 3%. Crohn's disease was a risk factor for capsule retention. Inadequate bowel preparation was significantly associated with capsule

retention and incomplete examination. An indication other than OGIB was a risk factor for incomplete examination. A recent increasing trend of CE diagnosis of Crohn's disease was observed. The most recent 5-year incomplete examination rate for CE examinations decreased compared with that of the previous 12 years.

**Conclusions** The 17-year data suggested that CE is a useful and safe tool for diagnosing small bowel diseases. The incomplete examination rate of CE decreased with time, and OGIB was consistently the main indication for CE. Inadequate bowel preparation was significantly associated with capsule retention and incomplete examination.

## OP99 PREDICTORS FOR FINDING LESIONS IN SMALL BOWEL BY ENTEROSCOPY AFTER A POSITIVE CAPSULE ENDOSCOPY

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DOI 10.1055/s-0040-1704119

**Aims** Several studies had evaluated the concordance between capsule endoscopy (CE) and overtube-assisted enteroscopy (OAE) with inconsistent results and some miss lesions in either procedure. The aim of this study is to identify the factors that predict the visualization of small bowel lesions by enteroscopy after a positive capsule endoscopy

**Methods** This is a retrospective, observational and comparative single center study that evaluated all the patients who had OAE after a positive CE between January 2017 and August 2019. Data collected included demographics, indications, comorbidities, surgeries, examinations dates, radiological exams, and CE and OAE outcomes. Positive CE was defined as the identification of a small bowel lesion (angioectasias, ulcers, tumors/polyps and erosions). Data were evaluated using a multiple logistic regression and presented as mean ± SD, percentage or OR, 95%CI.

**Results** There were 91 patients included (age 58 ±16.5 years, 53 female). The indications were overt small bowel bleeding (SBB) (68.1%), occult SBB (8.8%), tumor/polyps (8.8%) and Crohn's disease (14.3%). 62 OAE (68.1%) found the same findings than the CE. The predictive factors for positive OAE were multiple lesions (OR 8.10, 1.50-43.78; p=0.015), < 15 days between CE and OAE (OR 5.31, 1.19-23.66; p=0.029) age over 60 years (OR 3.00, 1.00-9.02; p=0.049). In a subgroup of patients with SBB as indication, 46 OAE (65.7%) found the lesions than the CE. The predictive factors in this group were multiple lesions (OR 10.42, 1.37-79.30; p=0.024), < 15 days between CE and OAE (OR 13.51, 1.78-102.22; p=0.012), age over 60 years (OR 7.45, 151-36.75; p=0.014), and ulcers (OR 4.67, 1.08-20.22; p=0.039).

**Conclusions** Predictive factors for positive OAE after positive CE are multiple lesions, less than 15 days between both procedures and patients over 60 years old. In patients with SBB, ulcers is also a predictive factor.

## OP100 THE PREVALENCE OF SMALL BOWEL POLYPS ON VIDEO CAPSULE ENDOSCOPY IN PATIENTS WITH SPORADIC DUODENAL AND/OR AMPULLARY ADENOMAS

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DOI 10.1055/s-0040-1704120

**Aims** Sporadic duodenal and/or ampullary adenomas (DA) are found in 1-3% of patients referred to upper endoscopy. Patients with duodenal adenomas have a 3-7-fold increased risk of colonic neoplasia. It is unknown whether DA patients have a clinically significant increased risk of small bowel neoplasia. Our

aim was to investigate the prevalence of SB polyps occurring in association with large ( $\geq 10$ mm) DA patients using VCE.

**Methods** In a single centre, prospective case control study, we used video capsule endoscopy (VCE) to investigate the prevalence of SB polyps in patients with a large ( $\geq 10$ mm) DA compared to patients undergoing VCE for obscure gastrointestinal bleeding (OGIB) or iron deficiency anaemia (IDA).

**Results** Over 25 months, 201 patients were enrolled in the study. The mean age was 65 and 47% were male. There were 101 control patients and 100 DA cases (mean size 30mm, (range 10-80mm)).

Five patients (DA group) were excluded from analysis due to inadvertent aspiration of the capsule (1), technical failure (2), inability to swallow the capsule (1) and non-adenomatous lesion (1).

There were no SB polyps in either group. One DA patient had an incidental finding of active bleeding, most likely from an angiodysplasia, but otherwise no significant small bowel findings were obtained.

Colonic polyps were found more frequently in the DA group than controls (61% vs 41%, respectively ( $p=0.002$ )). Overall, 46% of patients in the DA group had at least one colonic adenoma vs. 27% in the control group ( $p=0.011$ ) (Table-1). Advanced colonic polyps (HGD,  $>10$ mm, Villous histology) were found in 22% and 12% of the DA and control group, respectively ( $p=0.021$ ).

**Conclusions** Our data suggests that patients with a DA are not at risk for synchronous SB polyps and hence does not support screening with VCE. However, colonoscopy is mandatory due to the significantly higher risk of colonic polyps including advanced adenomas

## OP101 COLON CAPSULE ENDOSCOPY (CCE) IS AN EFFECTIVE FILTER TEST FOR COLONIC POLYP SURVEILLANCE

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**DOI** 10.1055/s-0040-1704121

**Aims** Surveillance accounts for 30% of colonoscopy workload, the majority are normal. Identifying patients who require polypectomy would be advantageous. We aimed to assess CCE and/or faecal immunochemical test (FIT) as a potential filter in surveillance.

**Methods** Following ethical approval, patients due for polyp surveillance, aged 18-80 were identified from our waiting list, then invited by post for CCE and FIT. A CCE was considered positive if polyps or CRC was identified. CCE significant lesions ( $\geq 3$  or  $>6$ mm polyps), incomplete studies and positive FITs ( $\geq 45$   $\mu\text{g/g}$ ) were referred for endoscopy. CCE and endoscopy results were correlated. FIT accuracy was compared to CCE.

**Results** To date, 300 surveillance patients have been invited, the uptake rate was 46% (138/300). Of 114 analysed CCEs (mean age 65 (31-80), 62 (54% males), 70% (80/114) were complete. Image quality was adequate in 103 (90%). Overall, CCE positivity was 70% (80/114) with 54% (43/80) having significant polyps. PPV of CCE was 94% (30/32 completed endoscopies). Significant extracolonic findings, requiring investigation, were reported in 1.8% (2/114). There were no complications.

The only characteristic associated with a positive CCE was older age  $\geq 70$  (OR 2.7,  $p=0.04$ , 95%CI 1.0547 to 6.9537).

2/98 (2%) returned FITs were positive, range 0-279  $\mu\text{g/g}$  and mean of 9  $\mu\text{g/g}$ . Positive FIT and CCE concordance was 100%, but FIT sensitivity was inadequate (3%) with an NPV of 30%. ROC analysis gave a sensitivity and specificity of 17% and 93%, respectively, for a FIT of  $\geq 10$   $\mu\text{g/g}$ .

In all, 70/114 (61%) were referred for endoscopy, 18 (16%) sigmoidoscopy and 52 (46%) colonoscopy, 39 (34%) for an inadequate CCE. In our surveillance cohort, CCE reduced the need for any endoscopy by almost 40% (44/114) and 54% (62/114) were spared a colonoscopy.

**Conclusions** Unlike FIT, CCE is useful in selecting patients for polypectomy in polyp surveillance and avoiding unnecessary colonoscopy.

## OP102 IS IT WORTH REPEATING CAPSULE ENDOSCOPY (CE) IN SUSPECTED SMALL BOWEL BLEEDING?

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**DOI** 10.1055/s-0040-1704122

**Aims** Repeat CE procedures over 9 years for a suspicion of ongoing SB bleeding were identified from a database. Patient demographics, CE findings and additional investigations were recorded. Potential factors associated with improved yields were explored.

**Methods** Repeat CE procedures over 9 years for a suspicion of ongoing SB bleeding were identified from a database. Patient demographics, CE findings and additional investigations were recorded. Potential factors associated with improved yields were explored.

**Results** 339/3,735 (9%) had  $>1$  CE. 152/339 (46%) for bleeding, male 86/152 (57%), mean age 63.9, range 18-92 years, mean CE interval was 461 days (1 - 2576). Haemoglobin (Hb) was available in 81 (52%), low in 65 (80%), mean 11.1. 1<sup>st</sup>CE findings: normal 19 (13%), angiodysplasia 24 (16%), active bleeding of unclear origin 30 (20%), inflammation 20 (13%), gastric abnormality 20 (13%), incomplete/retained CE 33 (22%), other 6 (4%). 2<sup>nd</sup>CE completion rate was 96% ( $n=146$ ) and overall yield was 55% ( $n=83$ ). Positive or negative index CE did not influence the diagnostic yield of subsequent CE, 8/19 (42%) normal vs 75/133 (56%) abnormal,  $p=0.1$ . Patients with active bleeding or angiodysplasia were almost 3 times more likely to have a positive 2<sup>nd</sup>CE (OR = 2.8,  $p=0.004$ , 95%CI 1.3 to 5.6). Older patients ( $>70$ ) were also more likely to have a positive 2<sup>nd</sup>CE, OR 2.3,  $p=0.01$ , 95%CI 1.17 to 4.45. Subjects with index retained/incomplete CE were more likely to have a subsequent incomplete study, OR 7,  $p=0.01$ , 95%CI 1.55 to 30.62.

**Conclusions** Second look CE in obscure bleeding can be an effective clinical tool with a diagnostic yield of 55%. Along with clinical suspicion, older age and initial small bowel bleeding/vascular lesion are predictive of higher yield.

## OP103 A GUIDE FOR INTERPRETATION OF THE PERTINENCY OF SMALL BOWEL CAPSULE ENDOSCOPY FINDINGS: ANALYSIS OF 8064 ANSWERS OF INTERNATIONAL EXPERTS TO AN ILLUSTRATED SCRIPT QUESTIONNAIRE

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**DOI** 10.1055/s-0040-1704123

**Aims** The interpretation of small bowel (SB) capsule endoscopy (CE) findings remains subjective and depends on readers' opinion and experience. In case of obscure gastrointestinal bleeding (OGIB), the ESGE suggests the use of a score for assessing the pertinency of lesions seen in SB-CE. However, this score (P0-P1-P2) lacks of scientific validation. Moreover, there is currently no evaluation of the pertinency of ulcerative and inflammatory lesions found in CE in patients with suspicion of Crohn's disease (CD). The aim of this study was to evaluate the pertinency of the most frequent SB-CE findings through an illustrated script questionnaire.

**Methods** The pertinency of 16 different types of findings was evaluated in three different settings: occult/overt OGIB and suspicion of CD. Each lesion was illustrated four times in the three above-mentioned settings, and with a variable number ( $n=1/n=2-5/n\geq 6$ ). In total, the questionnaire consisted of 576 illustrated questions. Fifteen international experts were asked to rate pertinency on a Likert scale from -2 to 2. The lesion pertinency depending on the context and number was considered low (P0), questionable (P1) or high (P2), referring to the following average scores obtained,  $\leq -1$ , between -1 and 1, or  $\geq 1$ , respectively.

**Results** The participation rate was 93%. The answers rate was 100%. 8064 answers were analyzed. In case of occult/overt OGIB, the P2 lesions were: angiectasia, superficial and deep ulceration, stenosis, blood or fresh clots. In case of suspicion of CD, the P2 lesions were: superficial and deep ulcerations, and stenosis. These results varied with the number of lesions seen ( $n=1/n=2-5/n\geq 6$ ).

**Conclusions** This study establishes a guide for the evaluation of SB-CE findings pertinency. It represents a step forward for SB-CE interpretation and is intended to be used as a tool for teaching and for academic research.

## OP104 PREVALENCE OF GASTROINTESTINAL DISEASE IN AN ASYMPTOMATIC POPULATION USING VIDEOCAPSULE

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DOI 10.1055/s-0040-1704124

**Aims** Although gastrointestinal (GI) diseases are common, prevalence rates of lesions in the GI tract in an asymptomatic population are difficult to assess. Colon capsule endoscopy (CCE) is a safe, minimally invasive tool that images the entire GI tract. The aim of this study is to assess prevalence of lesions in the entire GI tract in an asymptomatic population by CCE.

**Methods** Between 2017-2019, healthy subjects participating in the Rotterdam longitudinal epidemiological study (aged 50-75 years) were invited to receive CCE with corresponding bowel preparation. Trained reviewers analyzed images of the esophagus, stomach, small bowel and colon. Abnormalities defined as significant: Barrett segment  $> 3$  cm, severe ulceration, small bowel villous atrophy, vascular abnormalities, polyp  $> 10$ mm or  $\geq 3$  polyps in small bowel or colon, and cancer. Endoscopies were performed if significant lesions were found.

**Results** Of the 2800 invited asymptomatic subjects, 462 (16.5%) agreed to participate (mean age 66.8 years, male 46.1%). 451 procedures were analyzed. In 94.4% the capsule reached the descending colon and excretion was observed in 51.2%. In 76.6% the colon cleansing score was deemed adequate. Esophageal abnormalities were found in 14.5%, with Barrett esophagus (8.3%) and esophagitis (5.5%) most common. Gastric abnormalities were reported in 28.1%,

most frequently, fundic glands (18.1%) and erosions (6.6%). Small bowel abnormalities were found in 64.6%, with lymphangiectasia (30.7%) most frequent. Colon abnormalities were present in 93.3%, most commonly diverticula (81.5%) and polyps (55.9%). Significant abnormalities were found in 12%.

**Conclusions** In an asymptomatic population, GI tract mucosal abnormalities are frequently observed, mainly in the small bowel and colon. In over 10% of the population significant lesions were found. This study provides a frame of reference on the prevalence of GI mucosal abnormalities in an asymptomatic population.

## OP105 CURRENT SMALL-BOWEL CAPSULE ENDOSCOPY PRACTICE: AN OFFICIAL ESGE SURVEY

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DOI 10.1055/s-0040-1704125

**Aims** Small-bowel capsule endoscopy (SBCE) is the first-line diagnostic investigation for the small-bowel mucosa. This survey aimed to investigate the position of SBCE in current practice.

**Methods** Survey was conducted using the ESGE website from July to November 2019, by sending a SurveyMonkey questionnaire to the members of ESGE contact list. Endoscopists with interest in SBCE were asked to answer 18 questions regarding their SBCE practice.

**Results** Excluding duplicates; 217 responses (73.3% from ESGE and 26.3% from non-ESGE countries) were analyzed. SBCE is usually performed in a Hospital setting (74.7%). Most responders perform SBCE only in adults (75%) while 24% of them have experience in both adults and children. Responders experience with SBCE was  $8.6 \pm 6.3$  years and only 45% of them had undergone formal training. SBCE is reimbursed always in the clinical practice of 43.2% of the respondents and in selected indications in 28.6% of the practices. 61% of the participants have noticed an increase in demand for SBCE and almost the same anticipate definite or possible increase in demand over the next 5 years. The main indications for the examination are overt GI bleeding, iron deficiency anaemia and suspected or established Crohn's disease (44.5%, 29.2% and 18% of cases, respectively) and most of the respondents don't foresee significant changes in the current indications mix in the future. Evaluation of obscure GI bleeding and established Crohn's disease are associated with the higher rates of exam's positive findings (50% and 53.5%, respectively). Finally, half of the responders wish to extend SBCE indications to unexplained iron deficiency without anaemia.

**Conclusions** SBCE demand is expected to increase for the evaluation of small-bowel bleeding, iron deficiency anemia and Crohn's disease. Lack of universal reimbursement and formal training are anticipated as major obstacles in clinical practice.

## OP106V ENDOSCOPIC SPECTRUM OF SMALL BOWEL ULCERATIVE DISEASES

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DOI 10.1055/s-0040-1704126

The aim of this presentation are to present the large spectrum of ulcerative diseases of the small bowel and to serve as a video atlas for reference. We present several examples of ulcerative diseases of the small bowel.

To the best of our knowledge this is the largest video library showing the ulcerative disease of the small bowel. The spectrum of ulcerative disease of the small bowel is board ranging from inflammatory, immunologic, toxic, metabolic, infectious and ischemic. We believe that this video atlas will enhance the understanding and diagnosis of simple and complex ulcerative diseases of the small bowel.

Thursday, April 23, 2020

10:30 – 12:00

Innocent & guilty polyps

Wicklow Meeting Room 3

## OP107 UNDERWATER COLD SNARE POLYPECTOMY FOR IMPROVING OF COMPLETE RESECTION RATE AND RETRIEVAL RATE IN SMALL COLORECTAL POLYPS

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DOI 10.1055/s-0040-1704127

**Aims** Cold snare polypectomy (CSP) has been reported as safe and effective method for the removal of small colorectal polyps. However, some studies showed low histologic complete resection rate due to damage to specimens retrieved via suction and high retrieval failure. Underwater endoscopic mucosal resection (EMR) is an effective technique to increase the proportions of complete resection without increasing adverse events or procedure time. Therefore, the aim of this study was to compare the complete resection rate and retrieval rate between conventional CSP (C-CSP) and underwater CSP (U-SCP).

**Methods** This study was a prospective randomized controlled trial. A total of 103 small polyps (< 10mm) in 58 patients were enrolled between March 2019 and September 2019. The polyps were randomized to be treated with either C-CSP (51 polyps) or U-CSP (52 polyps). Primary outcome was the rate of histologic complete resection.

**Results** Among the 103 polyps, the rate of histologic complete resection was significantly higher in U-CSP group than in C-CSP groups (84.6% vs 55.3%;  $p = 0.002$ ). The rate of polyp retrieval failure was 7.8 % in C-CSP and 0 % in U-CSP ( $p = 0.057$ ). The rate of polyp fragmentation of C-CSP and U-CSP group was 8.5% and 0% ( $p = 0.047$ ). The procedure time and retrieval time were longer in C-CSP than U-CSP ( $55.17 \pm 47.69$  vs  $36.63 \pm 22.70$ ;  $p = 0.026$  and  $63.61 \pm 47.69$  vs  $14.48 \pm 15.75$ ;  $p < 0.001$ ). No clinically significant postprocedural bleeding or perforation occurred in either group.

**Conclusions** The results of this study were excellent with U-CSP of small colorectal polyps < 10mm in terms of complete resection, polyp retrieval and fragmentation rate, and procedure/retrieval time. Therefore, we can consider the U-CSP as a valuable modification of the C-CSP for resecting small colorectal polyps

## OP108 IMPACT OF SECOND GENERATION ENDOCUFF-ASSISTED COLONOSCOPY VS. STANDARD COLONOSCOPY ON ADENOMA DETECTION RATE IN ROUTINE PRACTICE: A CLUSTER-RANDOMIZED CROSSOVER TRIAL

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DOI 10.1055/s-0040-1704128

**Aims** Endocuff vision (ECV) is the second generation of a recent device designed to improve polyp detection. The aim of this study was to evaluate the impact of ECV on adenoma detection rate (ADR) in routine colonoscopy.

**Methods** This cluster-randomized crossover trial compared endocuff-assisted (ECV+) to standard (ECV-) colonoscopy. Two teams of 11 endoscopists each were formed. They were balanced in terms of basal ADR, gender and volume of activity. The team that started with ECV+ was selected based on randomization. Once half the inclusions had been treated, a switch was made and the other team performed ECV+. The main criterion was ADR.

**Results** 2,058 patients were included (1,032 ECV- vs. 1,026 ECV+). Both groups were comparable. Taking into account the cluster crossover design, we observed a 9.8% [5.7;13.8] increase in ADR in the ECV+ group (29.4% vs. 39.2%,  $P < 0.001$ ), mostly when polyps < 1 cm.

Regarding the physicians' basal ADR, the only significant increase was observed in the "good detectors" group (31% vs. 41%,  $P < 0.001$ ), but there was no significant increase in the "bad detectors" group (24% vs. 30%,  $P=0.11$ ). ECV had a positive impact in all colonic sectors, except the rectum. Cecal intubation time was significantly lower with ECV ( $P < 0.001$ ). No complication due to ECV were reported in this study.

**Conclusions** We observed a significant increase of approximately 10% in ADR in the ECV+ group. ECV had a very significant positive impact in the "good detectors", but not in the "bad detectors".

Trial registered at ClinicalTrials.gov (NCT03344055).

## OP109 A MULTICENTRE RANDOMIZED CONTROLLED TRIAL COMPARING THE RESECTION RATE AND COMPLICATIONS FOR COLD AND HOT SNARE POLYPECTOMY FOR 5-9 MM COLORECTAL POLYPS (POLIPECK HOT-COLD)

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DOI 10.1055/s-0040-1704129

**Aims** To compare the outcome of cold snare polypectomy (CSP) vs hot snare polypectomy (HSP) regarding incomplete resection rates and adverse events rates in 5-9mm colorectal polyps.

► Tab. 1

	Cold snare (n=364)	Hot snare (n=376)	p
Size (mm), median (RIC)	6 (5-7)	6 (5-7)	0.82
Location - Left colon - Right colon	182 (50%) 182 (50%)	182 (48.4%) 194 (51.6%)	0.66
Shape - Is - Ip - lsp - lla/b/c	235 (64.6%) 23 (6.3%) 10 (2.8%) 96 (26.4%)	223 (59.3%) 31 (8.2%) 19 (5.1%) 103 (27.4%)	0.37

**Methods** A prospective, multicentre, randomized controlled trial conducted in 7 Spanish Endoscopy Units (NCT03783156). Subjects with at least one 5-9mm polyp were randomized either to CSP or HSP. Polypectomies were performed according to current guidelines, without injection. Snare types and sizes were chosen by endoscopists. Complete resection rates were assessed with two biopsy samples taken after polypectomy and evaluated by a single pathologist blind to the specimen analysis and polypectomy method. Adverse effects were assessed by a standardized questionnaire. Differences between proportions of incomplete polypectomies were assessed with the z test of homogeneity.

**Results** A total 1437 patients were screened for eligibility, finally including 456 subjects (median age 64.8 (IQR: 57.2-71), 297 (65.1%) males), with 740 eligible polyps (364 assigned to CSP and 376 to HSP). Most frequent indications were colorectal cancer screening (32.5%), symptomatic patients (24.1%) and postpolypectomy follow-up (23.2%).

Lesions included are summarized in ►Table 1. Incomplete polypectomy rates were 8.6% in CSP group and 6.9% with HSP (p=ns). Post procedural pain remained similar between both groups until 5h after the procedure, when pain was present in 14% of patients of the HSP group and in 6% of the CSP group (p=0.06). Overall adverse events presented similarly between the CSP and HSP groups (8.8% vs 12%, respectively), with no differences in postpolypectomy bleeding rates (0.5% vs 0.4%).

**Conclusions** Cold snare polypectomy is a safe and effective technique in colonic lesions of 5-9 mm.

## OP110 INFLUENCE OF ADDITIONAL RETROGRADE INSPECTION VERSUS SECOND STANDARD FORWARD EXAMINATION ON THE DETECTION OF COLORECTAL ADENOMAS DURING COLONOSCOPY: A BACK-TO-BACK RANDOMIZED CONTROLLED TRIAL

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**Aims** Adenoma detection rate (ADR) is inversely related to the incidence of interval colorectal cancers and serves as a benchmark criterion for quality assessment during screening or surveillance colonoscopies. Within this study, we analyzed whether additional retrograde inspection of the colon can increase ADR and the number of adenomas per patient.

**Methods** Patients undergoing screening or surveillance colonoscopies were prospectively enrolled and randomized in a 1:1 fashion into the following arms: (i) RetroView (RV) Arm: colonoscopy was initially performed with standard

forward view (SFV), followed by a second inspection of the whole colon in retroflexion; (ii) SFV Arm: colonoscopy was initially performed with standard forward view (SFV), followed by a second inspection of the whole colon again with SFV. Number of polyps and adenomas in each segment detected with SFV and RV as well as withdrawal times with SFV and RV were recorded.

**Results** At the time of abstract submission, 160 patients were enrolled (78 patients RetroView Arm; 82 patients SFV Arm). Both, PDR and ADR were increased under second inspection in retroflexion in the RV Arm (PDR SFV: 38%, PDR 2nd RV: 49%; ADR SFV: 35%, ADR 2nd RV: 46%). Likewise, PDR and ADR were increased under second inspection in forward view in the SFV Arm (PDR SFV: 37%, PDR 2nd SFV: 51%; ADR SFV: 33%, ADR 2nd SFV: 51%). The mean number of adenomas found per patient was also increased upon second inspection either in retroflexion or in forward view. The majority of adenomas found upon second inspection were >5 mm in size with some of them exhibiting advanced or serrated histology.

**Conclusions** A second inspection of the colon either in Retroflexion or in Forward view can increase the ADR and mean number of adenomas per patients. Second inspection of the colon is therefore an easy approach to increase the ADR.

## OP111 COVERT CANCER IN COLORECTAL POLYPS - SIZE MATTERS!

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DOI 10.1055/s-0040-1704131

**Aims** To demonstrate the risk of covert cancer in colorectal polyps based on their size in one of the largest series of polyps to date.

**Methods** Outcomes of patients who had polyps on screening colonoscopy were analysed. Data was prospectively collected on an online endoscopy and pathology reporting system. A chart review was then carried out using multinomial logistic regression.

**Results** A total of 15906 polyps were removed at colonoscopy. Mean size was 7.3 mm.

Histopathological diagnosis of cancer was made in 104 polyps (0.65%). 94 polyp cancers (90.25%) were associated with non pedunculated morphology [OR 1.45 p=0.005].

► Tab. 1

Size	Proportion (%)	Location (%) R. colon: L. colon	Morphology(%) Pedunculated: Non-pedunculated	
≤ 5mm (N=10775)	67.74	50:50	4:96	0
6-10 mm (N=2375)	14.87	30:70	32:68	0.17
11-19 mm (N=1759)	11.27	31:69	47:53	1.1
≥ 20 mm (N=1007)	6.12	24:76	14:86	7.7

No cancer was found in polyps < 5mm in size. Risk of cancer increased with polyp size as depicted in ► **Table 1**. Risk of developing cancer in polyps >20mm was significantly higher than in smaller polyps [OR 6.57 p< 0.001].

89 cancers were found in the left colon and rectum compared with 15 cancers in the right colon. [OR 1.98 p=0.007].

**Conclusions** The prevalence of covert cancer in colorectal lesions < 5mm is negligible and that of polyps 6-10 mm is very low (0.17%). All these cancers were in non-pedunculated polyps in left colon. This means that the 'resect and discard' strategy could be extended to 6-10 mm polyps in right colon and potentially to pedunculated polyps in left colon.

Cancer risk, however, increased almost 7 fold in polyps ≥2cm. This calls for careful resection (preferably en-bloc) and retrieval of these polyps to obtain all prognostic information.

## OP112 THE OOPS STUDY: THE OOSTENDE POLYP SIZING STUDY

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DOI 10.1055/s-0040-1704132

**Aims** Polyp size is one of the defining characteristics after polypectomy to decide the surveillance recommendations. In current practice, this is often based on endoscopic estimation.

We wanted to investigate the accuracy of endoscopic sizing, define its impact on surveillance recommendations and explore teachability.

**Methods** A monocentric, prospective study was performed between April and October 2018 and February and November 2019. During the first period endoscopists were confronted with their performance, during the second they were blinded. Endoscopists sized polyps by visual estimation without support of devices. This was then compared to the gold standard ex-vivo prefixation and postfixation measurements. To eliminate the risk of electrocautery induced polyp shrinkage, only pedunculated polyps were included. Other factors that influence surveillance recommendation were collected.

The difference between estimation and prefixation was compared between the different inclusion periods.

Normality was tested with Shapiro-Wilk and continuous variables were compared with a paired sample T-test or Mann-Whitney U.

**Results** In total 128 polyps were included, of which 72 in the initial and 56 in the subsequent inclusion period. The endoscopic sizing (12.98 ±5.32mm) differed statistically from the prefixation (11.53±4.96mm; p< 0.001) and postfixation (11.75±4.81mm; p< 0.001) measurements. Overestimation (62.5%) was seen more often than underestimation (21.1%). There was no statistical significant difference between prefixation and postfixation measurements (p=0.297).

An inappropriate surveillance recommendation was given in 22.7% of the cases, of which 93.1% were due to overestimation. After considering other factors that define the surveillance recommendation, still 13.3% were erroneous.

Concerning teachability, no statistically significant improvement in estimation error between the initial (1.67±2.88mm) and subsequent (1.39±2.76mm) inclusion period could be established (p=0.753).

**Conclusions** Endoscopic polyp sizing is prone to overestimation resulting in inappropriate surveillance recommendations. There only seems to be limited teachability towards endoscopic sizing without the use of devices.

Until the advent of new measuring devices, we propose using ex-vivo measurements in pedunculated polyps to establish post-polypectomy surveillance recommendations.

## OP113 ESD ALLOWS BETTER STRATIFICATION OF METASTATIC RISK IN NON-PEDUNCULATED PT1 COLORECTAL CANCER: A SINGLE CENTRE RETROSPECTIVE STUDY

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DOI 10.1055/s-0040-1704133

**Aims** To compare the effectiveness of endoscopic submucosal dissection (ESD) and endoscopic mucosal resection (EMR) in T1 colorectal cancer (CRC) treatment.

**Methods** We retrospectively analyzed 267 pT1 colorectal cancers consecutively removed from January 2011 to December 2018 by EMR or polypectomy (n 235, 88%) and ESD (n 32, 12%) in our center.

**Results** Mean tumors size were 21,1±14,4 mm; 29,9±16,5 mm in ESD group, 19,8±13,6 mm in EMR/polypectomy group. 198/267 lesions (74%) were considered to have a high metastatic risk after histological analysis, one third of which (n 65) due to incomplete or inadequate resection. EMR/polypectomy obtained en bloc resection in 175/235 cases (74%), ESD in 32/32 (100%) tumors. Pedunculated and subpedunculated morphology was independently related to complete resection (OR 5.09, p 0.002) and correct removal for risk stratification (OR 3.19, p 0.027). In multiple logistic regression analysis, compared to EMR/polypectomy, ESD was an independent predictor of radical excision (OR 8.8, p < 0.004) and correct removal that allowed the histological stratification of the metastatic risk (OR 4.2, p < 0.001). In non-pedunculated tumors (n 173), univariate comparison confirm ESD was superior to EMR/polypectomy in obtaining complete resection (OR 3.5, p 0.002) and correct removal (OR 9.8, p 0.002) regardless of lesion characteristics such as dimension, morphology and site. Moreover, ESD was significantly associated to correct removal (adequate histological evaluation) in non-pedunculated T1 compared to en bloc EMR (OR 2.54, p 0.025).

**Conclusions** T1 colorectal cancers need often additional surgery for incomplete resection or incorrect removal that doesn't allow an adequate stratification of metastatic risk. In our retrospective study ESD obtained significantly better results than EMR/polypectomy (even en bloc) in reaching an appropriate removal, especially in non-pedunculated T1 CRC, and should be preferred in any non-pedunculated lesion with high suspicious of submucosal invasion.

## OP114 RESULTS OF ADDITIONAL SURGERY AFTER ENDOSCOPIC RESECTION FOR T1 COLORECTAL CANCER IN A FRENCH MULTICENTER COHORT

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DOI 10.1055/s-0040-1704134

**Aims** A 10% risk of lymph node involvement is associated with submucosal (T1) colorectal carcinomas treated with endoscopic resection, potentially indicating additional surgical resection. The absence of four histological features recalled in the Japanese (JSCCR) and European (ESGE) guidelines allows in case of R0 resection to avoid additional surgery. We aimed to evaluate the results of complementary surgery after endoscopic resection for a T1 colorectal cancer in a Western population.

**Methods** We conducted a retrospective multicenter study and included all patients who had an endoscopic mucosal resection or an endoscopic submucosal dissection for T1 colorectal cancer in eight French expert centers between March 2012 and July 2019.

**Results** We included 223 patients. The mean  $\pm$  SD age of the population was  $70.9 \pm 11$  years. Nearly half of the patients had an endoscopic submucosal dissection. Complementary surgery and surveillance alone were recommended in 56.4% and 43.6% of patients, respectively. Of the 73 patients who had an actual indication for additional surgery according to the ESGE guidelines, 60 (82.2%) had a pT0N0 surgical specimen. 12 (16.4%) patients had lymph node metastases: 9 had deep submucosal invasion  $> 2000 \mu\text{m}$ ; 5 had a mucinous histology; 10 had only one pejorative histological feature. If the submucosal invasion threshold had been set to  $2000 \mu\text{m}$  without any other pejorative histological feature, 7 (9.6%) surgeries could have been avoided without increasing the risk of lymph node involvement.

**Conclusions** Using the histological criteria recommended by the ESGE to indicate a complementary surgery after endoscopic resection for T1 colorectal cancer in a Western population leads to 82% of surgical specimens free of cancer. In this study, pushing the threshold of submucosal invasion up to  $2000 \mu\text{m}$  associated with the absence of any pejorative qualitative histological feature could reduce the number of surgical indications without increasing the risk of lymph node involvement.

### OP115 QUALITY OF PATHOLOGY REPORT AND ADHERENCE TO GUIDELINES IN A FRENCH MULTICENTER COHORT OF T1 COLORECTAL CANCER TREATED BY ENDOSCOPIC RESECTION

**Authors** Corre F<sup>1</sup>, Barret M<sup>1</sup>, Ratone JP<sup>2</sup>, Albouys J<sup>3</sup>, Rahmi G<sup>4</sup>, Chabrun E<sup>5</sup>, Canard JM<sup>6</sup>, Camus M<sup>7</sup>, Wallenhorst T<sup>8</sup>, Karsenti D<sup>9</sup>, François M<sup>10</sup>, Gerard R<sup>11</sup>, Jacques J<sup>3</sup>, Terris B<sup>12</sup>, Coriat R<sup>1</sup>, Chaussade S<sup>1</sup>

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DOI 10.1055/s-0040-1704135

**Aims** According to the Japanese (JSCCR) and European (ESGE) guidelines, the presence of deep submucosal infiltration ( $> 1000 \mu\text{m}$ ), poor tumor differentiation, lympho-vascular invasion, or grade 2-3 tumor budding on a T1 colorectal carcinoma (T1CRC) endoscopically resected should lead to additional surgery with lymph node dissection. The aim of this study was to evaluate practices in France concerning the quality of the pathology report (PR) and the adherence to guidelines in endoscopic treatment for T1CRC.

**Methods** We conducted a retrospective study including all patients with endoscopic resection for T1CRC performed in eight French expert centers between

March 2012 and July 2019. We collected demographic, clinical, endoscopic and histological data.

**Results** 223 patients were included. The mean age of the population was  $70.9 \pm 10.9$  years. Concerning the quality of PR, R0 or R1 vertical margin was indicated in 100% of cases; depth of submucosal invasion was missing in 6 (2.7%) PR; tumor differentiation was missing in 9 (4.0%) PR; tumor budding was missing in 24 (10.8%) PR; lympho-vascular invasion was missing in 9 (4.0%) PR. Overall, at least one histological feature was missing in 32 (14.3%) PR and at least two histological features were missing in 14 (6.3%) PR. Concerning the adherence to guidelines, 179 (82.1%) of the decisions were consistent with the guidelines. Regarding the 39 (17.9%) patients for whom the guidelines were not followed, 19/39 (48.7%) were not operated because they declined or were not fit for surgery, which brings to 20/218 (9.2%) the number of patients deviating from the guidelines without justification.

**Conclusions** This multicenter study indicates that 14% of pathology reports for endoscopically resected T1CRC are incomplete and that patient management deviates from international guidelines without justification in 9% of patients. The creation of a dedicated multidisciplinary meeting for superficial gastro-intestinal cancers in each therapeutic endoscopy center could help improving these points.

Thursday, April 23, 2020

14:30 – 16:00

Twist and shout through the bowel

Liffey Meeting Room 1

### OP116 A COMPREHENSIVE SYSTEMATIC REVIEW AND META-ANALYSIS OF RISK FACTORS FOR REBLEEDING FOLLOWING DEVICE-ASSISTED ENTEROSCOPY THERAPY OF SMALL-BOWEL VASCULAR LESIONS

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DOI 10.1055/s-0040-1704136

**Aims** To determine the risk factors for rebleeding following device-assisted enteroscopy therapy of small bowel vascular lesions.

**Methods** This is a systematic review and meta-analysis. A literature search was conducted from January 2003 to October 2019. All studies reporting on at least one risk factor for bleeding recurrence after endoscopic therapy of small bowel vascular lesions were included. A meta-analysis for those risk factors reported in at least 3 studies was done to assess their association with rebleeding. For binary outcome data, the OR and 95% CIs were used. Heterogeneity analysis was performed using the Tau and I<sup>2</sup> index. If I<sup>2</sup>  $> 20\%$ , potential sources of heterogeneity were identified by sensitivity analyses and a random-effect model was used.

**Results** The search identified a total of 572 articles and 35 full-text records were assessed for eligibility after screening. Finally, 8 studies including 548 patients were included. The overall median rebleeding rate was 38.5% (range: 10.9-53.3%) with a median follow-up of 24.5 months.

Female sex [OR: 1.96, 95%CI: 1.14-3.37,  $p=0.01$ , I<sup>2</sup>=0%], Osler-Weber syndrome [OR: 4.35, 95%CI: 1.22-15.45,  $p=0.02$ , I<sup>2</sup>=0%] and cardiac disease [OR: 1.89, 95%CI: 1.12-2.97,  $p=0.005$ , I<sup>2</sup>=0%] were associated with rebleeding. By sensitivity analysis, overt bleeding [OR: 2.13, 95%CI: 1.22-3.70,  $p=0.007$ , I<sup>2</sup>=0%], multiple lesions [OR: 4.60, 95%CI: 2.06-10.28,  $p < 0.001$ , I<sup>2</sup>=0%] and liver cirrhosis [OR: 0.22, 95%CI: 0.02-0.42,  $p=0.03$ , I<sup>2</sup>=0%] were also predictors of this outcome.

**Conclusions** Patient's characteristics and comorbidities should be considered in patients who undergo device-assisted endoscopic therapy, as they can predict the rebleeding.

## OP117 EFFICACY AND SAFETY OF WATER-EXCHANGE ENTEROSCOPY COMPARED TO CARBON DIOXIDE INSUFFLATION DURING ENTEROSCOPY

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**DOI** 10.1055/s-0040-1704137

**Aims** Carbon dioxide (CO<sub>2</sub>) insufflation during enteroscopy reduces procedure time (PT) and discomfort; and increases intubation depth (ID) compared to room air. In colonoscopies, water-exchange (WE) technique is less painful and increases adenoma detection rate compared to CO<sub>2</sub> insufflation. The WE technique is not well studied in enteroscopy. The aim of this work is to compare the efficacy and safety of WE enteroscopy with CO<sub>2</sub> enteroscopy.

**Methods** This is a prospective, comparative and observational study, which included all double balloon enteroscopies (DBE) realized between June and November 2019. The DBE were randomized in group A (WE DBE with saline solution) and group B (DBE with CO<sub>2</sub> insufflation). Data collected included demographics, comorbidities, indication, ID, PT, findings, therapeutics, adverse events (pain, discomfort or nausea) and major complications (hemorrhage, perforation or pancreatitis). Data were evaluated using univariate analysis and a multiple logistic regression (variables with  $p \leq 0.1$  in univariate analysis) and were presented as median (percentiles), frequencies (percentage) or OR (95%CI).

**Results** There were 40 DBE included (20 per group; age 63, 37.5% female). 26 DBE were anterograde, median PT were 75 minutes (60, 106) and median ID was 225 cm (150, 295). The principal indication was small bowel bleeding (52.5%). There were no statistical differences in access route, findings, therapeutics, PT and mayor complications between groups. Four patients (20%) in CO<sub>2</sub> group had adverse events (discomfort) and 1 in WE group (nausea) with no statistical difference. The median ID was higher in CO<sub>2</sub> group (255 cm vs. 155 cm;  $p=0.072$ ). Multiple logistic regression showed that ID had statistical difference with CO<sub>2</sub> insufflation compared to WE (OR 1.010, 1.001-1.019;  $p=0.035$ ).

**Conclusions** EDB with CO<sub>2</sub> insufflation technique and with WE are safe procedures with a statistical major ID in the CO<sub>2</sub> insufflation group.

## OP118 RISK FOR SURGERY IN PATIENTS WITH POLYPOSIS SYNDROME AFTER DEVICE ASSISTED ENTEROSCOPY(DAE): LONG TERM FOLLOW-UP

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**DOI** 10.1055/s-0040-1704138

**Aims** The aim of this study is to evaluate the efficacy of DAE in detection and treatment of small bowel polyps to reduce the risk of surgery. Secondary objectives are complications and mortality.

**Methods** We conducted a retrospective cohort study analyzing a structured database. Between September 2006 and October 2019, we observed 42 consecutive patients with polyposis syndromes and who underwent DAE, 3 were excluded for elective surgery after enteroscopy. Endoscopic exams were performed with Single Balloon Enteroscope (Olympus) or with Spiral Motorized Enteroscope (Olympus). Polyps were distinct in small (< 10mm), medium (>10mm, < 20mm) and large (>25mm). The exams were performed with diagnostic and therapeutic purpose.

**Results** 39 patients were evaluated with an average follow up of 6.71yrs. ( $\pm$  SD 2.76), 79,5% were female, mean age was 43.8 yrs ( $\pm$  SD 15.02). A total of 68 enteroscopies were performed, both for oral and anal access. Therapeutic exams were 24 with removal of 64 polypoid lesions, most classified as small polyps (70,7%). One bleeding episode occurred after operative enteroscopy, needing 1 red blood cell transfusion. The need for surgery occurred in 6 patients with PJ and in 5 patients with FAP. The surgical indications in PJ patients were large polyps (3 patients) and 3 intussusception, 1 of these was a patient with a polyp in proximal ileum not reached with the scope. 1 patient with PJ died for pancreatic cancer during the follow up. The surgical indications in patients with FAP were 4 large polyps with High Grade Dysplasia and 1 ampullary neoplasia recurrence.

**Conclusions** In PJ patients endoscopic treatment of small bowel polyps was safe. In a long follow up period the patients with successful endoscopic treatment did not needed surgery, when occurred a failure in endoscopic treatment there was surgery recurrence. In FAP patients after DAE none developed a cancer.

## OP119 USE OF ENTEROSCOPE WITHOUT THE OVERTUBE IN INCOMPLETE COLONOSCOPIES

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**DOI** 10.1055/s-0040-1704139

**Aims** Colonoscopy is the gold standard diagnostic method for colorectal cancer screening. The quality of such procedure depends on different factors, including endoscopist's skills and caecal intubation rate. Despite the progress in the endoscopy technology field, a small percentage of colonoscopies is still incomplete. The reasons for that are mostly associated to anatomic features, such as fixed, angulated, long and loopy colon, intra-abdominal adhesences and female gender. To overcome such difficulties, the usefulness of scopes different from conventional colonoscope (CF), such as paediatric colonoscope (PCF), gastroscope (GIF), single and double balloon enteroscope (SBE and DBE, respectively), has been shown in literature. Our retrospective study aims to evaluate the caecal intubation rate using a SBE without the overtube in patients who previously underwent an incomplete procedure with a different scope.

**Methods** Patients with a previous incomplete colonoscopy with CF, PCF, GIF or a combination of them, were retrospectively enrolled through the analysis of a dedicated database. The enteroscope used was the Olympus EnteroPro Single Balloon SiF-Q180 with no overtube. Complete colonoscopy was defined as successful caecal intubation.

**Results** SBE with no overtube was used to scope 47 adult patients, mostly female (77%), and it led to a complete procedure in 91% of them (43 over 47). The most frequent reason (75%) for an incomplete procedure even with the use of SBE was a fixed and angulated colon (3 over 4 patients).

**Conclusions** Colonoscopy performed with SBE without the overtube was safe and no adverse events during and/or after the procedure occurred. Our results suggest that SBE with no overtube, which is thinner and longer compared to CF and PCF and a less expensive option compared to SBE and DBE, is a useful and valid alternative to other type of scopes in difficult cases, especially those related to fixed/angulated colon and in female gender.

## OP120 ENDOSCOPIC CONTROL OF POLYP BURDEN WITH SMALL-BOWEL ENDOSCOPY IN PEUTZ-JEGHERS SYNDROME. A THIRTY-YEAR EXPERIENCE IN A TERTIARY REFERRAL CENTER

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**DOI** 10.1055/s-0040-1704140

**Aims** We investigated the clinical outcome of small-bowel endoscopy as part of an oncological surveillance program in a large series of PJS patients.

**Methods** PJS patients were consecutively enrolled from our dedicated outpatient-clinic for inherited polyposis syndromes. We selected patients who underwent enteroscopy (push, single, double-balloon or intraoperative enteroscopy) from 1990 to 2019. The indication for enteroscopy was detection of >1.5cm polyps at a previous imaging study such as VCE, MRE or small-bowel series/enteroclysis. The outcome of enteroscopy, the rate of adverse events, follow-up data and oncological data were recorded.

**Results** 26 patients (16 M, 10 F) were included (mean age 36, range 11-54). 65 enteroscopies were performed: 9 intraoperative (IOE), 16 push, 40 device-assisted enteroscopy (DAE). Excluding IOE, 43 procedures were performed with antegrade approach. In total, 274 small-bowel polyps >5mm were removed, of which 2 were HGD adenomas. In IOE, 1 jejunal bleeding and 1 small-bowel perforation were recorded (2/9 procedures, 22%), both related to the surgical procedure; conversely in DAE, only 2 minor polypectomy-related bleedings and 1 pneumothorax were recorded (3/56, 5.3%). On the basis of the patients' remote clinical history, 18/26 patients (69.2%) underwent emergent surgery (mainly for intestinal occlusion) before being subjected to enteroscopy; conversely during the follow-up after enteroscopy (mean 46 months, range 5-194) only 2/21 (9.5%) underwent emergent surgery. 5 patients were lost at follow-up. 11/26 patients (42.3 %) developed extra-GI neoplasias during the follow-up but no GI cancers (2 GI cancers were detected before starting enteroscopies and were treated surgically). 4 patients died during follow-up because of extra-GI cancers.

**Conclusions** A systematic endoscopic approach to small-bowel polyps, to achieve and maintain low polyp burdens, appears to be useful in reducing the rate of urgent surgical interventions. DAE has a good safety profile compared to IOE. At present, extra-GI neoplasias remain the main issue affecting these patients.

### OP121 PRELIMINARY EXPERIENCE WITH THE NOVEL MOTORIZED SPIRAL ENTEROSCOPE (POWERSPIRAL) FOR SMALL BOWEL DISEASES

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DOI 10.1055/s-0040-1704141

**Aims** A Novel Motorized Spiral Endoscope (PowerSpiral, Olympus corp) has been recently presented with promising ability to reduce duration and increase insertion depth of enteroscopy. Our primary endpoint was to evaluate efficacy of PowerSpiral endoscope in the visualization of the small bowel. Secondary endpoint was to evaluate diagnostic yield and safety.

**Methods** A prospective observational study was conducted in all patients undergoing PowerSpiral enteroscopy at our Institution from June 2019 to November 2019. Data collected were patients' demographic characteristics, indication to procedure, total procedure time, depth of maximum insertion, diagnostic yield and adverse events.

**Results** Thirty-one patients were included in the study. Three patients were excluded as it was not possible to pass the esophagus and 28 patients were finally analyzed (17 males, mean age 57 ±15 years); 19 patients (67.9%) underwent antegrade enteroscopy and 9 patients (32.1%) retrograde enteroscopy. The most common indications for the procedure were vascular lesions (32.1%), polyps (17.9%) and ulcers (14.3), previously detected by capsule endoscopy or radiology techniques. Twelve patients (42.9%) had previous abdominal surgery. The mean total procedure time was 61 minutes (SD ±22). The mean depth of maximum insertion was 521± 100 cm for antegrade enteroscopy. In 2 cases of antegrade enteroscopy the terminal ileum was reached and in 1 case a

complete small bowel exploration was achieved. The diagnostic yield was 71.4%, with lower rate in patients with previous abdominal surgery (50%). No serious adverse events were observed during the procedure.

**Conclusions** Preliminary experience shows the new PowerSpiral endoscope as an effective and safe device for the exploration of the small bowel with higher insertion depth and lower procedure time compared with previously available enteroscopes.

### OP122V JEJUNAL POLYPECTOMY WITH NOVEL MOTORIZED SPIRAL ENTEROSCOPY (MSE) BY AN INEXPERIENCED OPERATOR AFTER FAILED CONVENTIONAL ENTEROSCOPY BY AN EXPERT: A TRUE "PROOF OF CONCEPT" EXPERIENCE

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DOI 10.1055/s-0040-1704142

**Introduction** MSE with foot-pedal controlled spiral overtube facilitates progression by clockwise rotation. As MSE has only been tested diagnostically by experienced operators at referral centers, general applicability needs confirmation.

**Description** 81 year-old female with chronic anemia and occult gastrointestinal bleeding. Capsule endoscopy reveals jejunal ulcerated polyp but conventional enteroscopy fails to reach it. After relapsing acute GI bleeding, MSE is performed by a novice operator reaching past the tattooed prior maximal insertion-depth, allowing uneventful saline-assisted jejunal polypectomy.

**Conclusion** We present the first jejunal polypectomy with MSE performed by a non-expert enteroscopist. This experience fulfilled expectations and helped a challenging patient.

### OP123V SMALL BOWEL POLYPECTOMY FOR THE MANAGEMENT OF PEUTZ-JEGHER ASSOCIATED RECURRENT INTUSSUSCEPTION

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DOI 10.1055/s-0040-1704143

**Background** Intussusception as a consequence of large small bowel polyps is not uncommon in Peutz-Jegher patients. Prior to Device-Assisted Enteroscopy (DAE), surgery with associated morbidity or conservative management was the only treatment option.

DAE and polypectomy in selected cases can offer a less invasive endoscopic solution.

**Aim** We report the successful case of a patient who required multiple repeated large jejunal polyp resection to control recurrent acute small bowel obstruction episodes as a result of intussusception including a demonstration of polypectomy technique, management of post-polypectomy bleeding and retrieval method.

Both gastrointestinal and systemic surveillance recommendations are also reviewed.

## OP124V PYOGENIC GRANULOMA (PG): UNCOMMON CAUSE OF IRON DEFICIENCY ANAEMIA DIAGNOSED AND TREATED BY DOUBLE-BALLOON ENTEROSCOPY (DBE) (WITH VIDEO)

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DOI 10.1055/s-0040-1704144

Pyogenic granuloma (PG) is a rare cause of obscure gastrointestinal bleeding. Histopathologically is characterised by proliferation of capillary vessels and granulation tissue while pathogenesis is unclear.

A 59-year-old man with iron-deficiency anaemia was referred to our institution. Small bowel capsule endoscopy showed a large vascular malformation within the jejunum. At double-balloon enteroscopy (DBE) two reddish polypoid lesions in keeping with PGs were identified. Endoscopic mucosal resection (EMR) was performed successfully. Endoclips were placed to reduce delayed-bleeding risk. Histopathology report confirmed initial endoscopic diagnosis.

DBE facilitated endotherapy is a precise, safe and minimally invasive management of PGs in the small bowel.

Thursday, April 23, 2020

14:30 – 16:00

Quality in gastroscopy: Raising the bar

Wicklow Hall 1

## OP125 PREMEDICATION WITH DIMETHICONE, N-ACETYLCYSTEINE AND PANCREATIN TO IMPROVE VISIBILITY DURING GASTROSCOPY: A RANDOMIZED, DOUBLE-BLIND, PLACEBO-CONTROLLED TRIAL

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DOI 10.1055/s-0040-1704145

**Aims** Evaluate the efficacy and safety of premedication with Dimethicone, N-Acetylcysteine and Pancreatin during upper digestive endoscopy.

**Methods** Randomized, double-blind, controlled trial at a National referral center in Mexico. From May to September 2019, 163 patients who underwent routine gastroscopy were recruited. They were randomized 1:1:1 to receive premedication with 100ml of water (Group A); 100ml of water, 100mg of Dimethicone and 600mg of N-Acetylcysteine (Group B); or, 100ml of water, 100mg of Dimethicone, 600mg of N-Acetylcysteine and 300mg of Pancreatin (Group C). Endoscopists and patients were blinded to group allocation. Mucosal visibility was evaluated by 3 experienced endoscopists in the lower esophagus, the stomach (fundus, body, antrum), and in the duodenum. A 3-point previously validated scale was used (1=worst, 3=best). The primary outcome was mucosal visibility. Secondary outcomes were intragastric volume, volume of fluid required to achieve adequate visibility, procedure duration, tolerance, and adverse events. Analysis was done with Kruskal-Wallis test and U Mann-Whitney (*Stata v13*,  $p < 0.05$ ).

**Results** Mean mucosal visibility score, mean flush volume required to achieve adequate mucosa views and procedure duration for Group B and C was better than for Group A (► **Table 1**) in lower esophagus, stomach, and duodenum ( $p < 0.0001$ ). No difference was found in intragastric volume between any of the 3 groups ( $p < 0.13$ ). No adverse events were reported, and the three groups experienced good tolerance for the premedication.

► **Tab. 1** Mucosal visibility scores and secondary outcomes

	Group A n=54 m (SD)	Group B n=55 m (SD)	Group C n=54 m (SD)	p*
Mucosal visibility score	2.48 (±0.57)	2.91 (±0.29)	2.96 (±0.19)	0.0001
Esophagus	1.70 (±0.46)	2.63 (±0.48)	2.68 (±0.47)	0.0001
Stomach	1.85 (±0.65)	2.89 (±0.31)	2.92 (±0.26)	0.0001
Duodenum				
Secondary Outcomes				
Intragastric volume	2.27 (0.53)	2.14 (±0.55) 3	2.07 (±0.51)	0.13
Flush volume	14.54 (±9.12)	2.59 (±4.03)	2.59 (±3.60)	0.0001
volume required	9.17 (±1.14)	7.05 (±1.21)	6.89 (±0.90)	0.0001
Procedure duration				

**Conclusions** Premedication with Dimethicone and N-acetylcysteine significantly improves mucosal visibility during gastroscopy. Furthermore, it reduces mean flush volume required to achieve adequate mucosal visibility and procedure duration when compared to placebo.

## OP126 PREVALENCE AND CHARACTERISTICS OF MISSED GASTRIC CANCER

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DOI 10.1055/s-0040-1704146

**Aims** To analyze 1) The missed gastric cancer (MGC) rate in our area, 2) Baseline characteristics of the gastric cancer (GC) diagnosed and 3) Factors related to the MGC.

**Methods** Retrospective study of GC diagnosed in our area (secondary hospital with specialties) between October/2003-December/2018. Patients were identified through Pathology database. MGC was defined when a normal prior EGD was performed from 3 to 36 months before the diagnosis. Clinical and demographic characteristics of both non-MGC and MGC group were evaluated. The comparison of variables between the two groups was performed with the  $\chi^2$  test and multivariate analysis.

**Results** A total of 349 patients with GC were diagnosed being 6% (95% CI 3.97-9.01) MGC. In the MGC group, the localization was less frequent in body-antrum (52.4% vs. 75%;  $p = 0.04$ ), and more frequent in the anastomosis of previous gastric surgery (14.3% vs. 0.9%;  $p = 0.0002$ ). And this group also had less alarm symptoms (28.5% vs. 74%;  $p = 0.0001$ ). There were no differences in the age, sex, smokers, presence of Helicobacter Pylori infection and histological type of tumor. Regarding the features of the EGD, performing the procedure without sedation was the only factor related to the presence of MGC (19% vs. 45.7%;  $p = 0.03$ ). No differences were found regarding the type of endoscope (Olympus-GIF-Q145 / 165 vs. Olympus-GIF-Q190). In

multivariate analysis, the only factors associated with MGC, was the sedation with OR 3.6 (95% CI 1.1-11.3) and anastomosis localization with OR 18.3 (95% CI 3.2-104.5).

**Conclusions** The MGC rate in our area was 6%. Performing EGD under sedation is associated with less possibility of MGC probably because it allows a more accurate visualization of the whole stomach, especially fundus, subcardial and anastomosis areas, where the GC is most often non-diagnosed

### OP127 MISSED UPPER GI CANCERS AFTER PREVIOUS GASTROSCOPY - WHAT RATE IS ACCEPTABLE?

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DOI 10.1055/s-0040-1704147

**Aims** Early detection of upper GI cancers is necessary to optimise outcomes as late diagnosis carries a poor prognosis. Post colonoscopy colorectal cancer (PCCRC) rate is a quality assurance measure that defines an acceptable miss rate but an equivalent standard does not exist for the upper GI tract. We aim to describe missed opportunities for earlier diagnosis of upper GI cancers at our Trust and investigate contributing factors.

**Methods** Retrospective study at a tertiary London-based hospital Trust. Endoscopy software used to identify all new oesophageal, gastric and duodenal cancers diagnosed during gastroscopy during an 18 month period (January 2017 to August 2018). Interrogation for a prior gastroscopy within 3 years of the date of each cancer diagnosis was performed. **Results** 90 cases of upper GI cancer diagnosed during gastroscopy (53 oesophageal (58.9%), 26 gastric (28.9%), 11 duodenal (12.2%)). There were 10 cases of post gastroscopy cancer (PGC) within 3 years giving our Trust a miss rate of 11.1%.

Median age of patients with PGC was 78 (range 47 - 94), female 7/10 (70%) and interval between gastroscopies was less than or equal to 12 months for 6/10 (60%). Type of cancers: 7 oesophageal (70%), 2 gastric (20%) and 1 duodenal (10%). Photo-documentation was absent in 6/10 (60%), conscious sedation was not used in 5/10 (50%) and 8/10 (80%) were performed by consultants.

**Conclusions** Our Trust has a post gastroscopy cancer miss rate of 11.1% which is comparable to that published in a recent meta-analysis. More than half the PGCs occur within 12 months of the prior gastroscopy and photo-documentation is missing in 60%. Female gender is associated with cancer diagnosed after previous gastroscopy. We recommend the introduction of UK guidelines on acceptable upper GI cancer miss rates (as per colorectal cancer key performance indicators) to drive better standards in upper GI endoscopy.

### OP129 QUALITY OF LIFE FOLLOWING PERORAL ENDOSCOPIC MYOTOMY FOR ESOPHAGEAL ACHALASIA: A SYSTEMATIC REVIEW AND META-ANALYSIS

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DOI 10.1055/s-0040-1704148

**Aims** Peroral endoscopic myotomy (POEM) is a novel minimally invasive intervention for treating esophageal achalasia. Previous publications have proved its excellent efficacy and safety, and even shown it could improve patients' quality of life (QoL). However, there has been no meta-analysis to review the effect of POEM for QoL in patients. Therefore, we conducted this study to explore the changes of QoL following POEM.

**Methods** A comprehensive literature search was conducted on PubMed, EMBASE, and Cochrane Library covering the period from January 2009 to April 2019. The search terms included 'achalasia', 'POEM', 'peroral endoscopic myotomy', and 'quality of life'. The literature was selected independently by two reviewers according to the inclusion and exclusion criteria. The statistical analysis was carried out using Review Manager 5.3.

**Results** A total of 12 studies including 549 patients were identified, which assessed the QoL using validated questionnaires administered before and after procedure. After POEM, the SF-36 questionnaire score of each domain (physical function, role physical function, body pain, general health, social function, vitality, emotional role function, mental health) was significantly increased ( $p < 0.05$ ). Meanwhile, mental component scale (MCS) and physical component scale (PCS) scores were all improved in patients after POEM procedure (MCS: 12.11, 95% CI, 4.67-19.55,  $p=0.001$ ,  $I^2=88%$ , PCS: 17.01, 95% CI, 2.91-31.11,  $p=0.02$ ,  $I^2=97%$ ). The gastroesophageal reflux disease health-related quality of life questionnaires (GERD-HRQL) also decreased significantly after POEM (13.01, 95% CI, 9.98-16.03,  $p < 0.00001$ ,  $I^2=30%$ ).

**Conclusions** Our current evidence suggests there is significant improvement in QoL after POEM procedure.

### OP130 NON-AMPULLARY SPORADIC DUODENAL ADENOMAS - TIME FOR A CONSENSUS ON ENDOSCOPIC RESECTION?

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DOI 10.1055/s-0040-1704149

**Aims** Sporadic duodenal adenomas (SDAs) are a rare but important endoscopic finding due to their malignant potential. Although endoscopic resection (ER) is generally advocated this carries significant risk related to the relatively thin, vascular and fixed duodenal wall. The lack of guidelines related to SDAs leads to variability in their management with potential implications for patient outcomes.

This study aimed to evaluate current practice regarding the management of non-ampullary SDAs and assess the need for a consensus.

**Methods** 40 internationally renowned advanced endoscopists from multiple international centres were surveyed regarding their management of non-ampullary SDAs. 12 questions investigating factors influencing whether to offer ER, pre-ER work-up, procedural risk and post-ER management were evaluated.

**Results** The survey was completed by 19 endoscopists with 18 confirming they endoscopically manage non-ampullary SDAs. Most endoscopists offered ER on a case-by-case basis with patient age (72%), comorbidities (44%) and lesion size (39%) reported as integral to decision-making. No guidelines were used by 94% but multi-disciplinary team discussion prior to ER was arranged routinely by 67% and in select cases by 22% of endoscopists. Endoscopists completed further investigation pre-ER including endoscopic ultrasound (39%) and cross-sectional imaging (22%). The degree of risk involved in duodenal resection quoted to patients including haemorrhage (range 1-50%, median 15%) and perforation (range 1-10%, median 3%) was variable.

Anti-coagulation and anti-platelets were restarted a median of 3 days (IQR 2-7 days) following ER. Post-procedural proton pump inhibitors were routinely prescribed by 94% of endoscopists however therapy duration was variable (median 29 days, IQR 14-30 days). Post-procedure patients were admitted routinely by 39% and in specific cases by 56% of endoscopists.

**Conclusions** There is widespread variability in the pre- and post-procedural management of non-ampullary SDAs in major international centres. There is a need to develop a consensus of opinion to help standardise the management of non-ampullary SDAs.

## OP131 DUODENAL EVALUATION IN ADENOMATOUS POLYPOSIS - IS THERE ANY ROLE FOR TAILORING SURVEILLANCE?

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**DOI** 10.1055/s-0040-1704150

**Aims** Familial Adenomatous Polyposis (FAP) and MUTYH-Associated Polyposis (MAP) are associated with a high risk of small bowel lesions both in duodenum, ampulla and distally in the jejunum and ileon. Our aim was to evaluate the correlation between the severity of duodenal polyposis and the presence of ampullary adenoma and small-bowel polyps.

**Methods** A prospectively database of patients followed in our institution for colorectal polyposis (defined by genetic criteria - APC mutation (n=46) or MYH biallelic mutation (n=17) - or by clinicopathological criteria (>20 adenomas) (n=27)) was assessed retrospectively. Only adult patients (≥18 years old) that had at least one upper endoscopy (n=90) were included. 35% of patients were submitted to small bowel imaging.

**Results** The Spigelman score in the first upper endoscopy was 0, 1, 2 and 3 in 54%, 30%, 9% and 7% of patients with FAP respectively. 30.4% of all patients (n=14) had ampullary adenoma (11 low grade displasia, 4 high grade displasia). There was a significant association between the Spigelman score and the presence of ampullary adenoma (p<0.01). Three patients had small-bowel lesions diagnosed by capsule endoscopy (6.5%) and their Spigelman score was 1, 2 and 3. None of them needed endoscopic or surgical treatment.

Among the non-FAP patients, all were classified as Spigelman 0 except one (score 1). None of the patients was diagnosed with ampullary adenoma or small bowel lesions.

**Conclusions** Our results support a suggestion of tailoring surveillance among patients with polyposis by including ampullary assessment only for those with FAP with more advanced duodenal adenoma stages. Further studies are needed to clarify the surveillance benefit in non-FAP polyposis patients.

## OP132 ENDOSCOPIC SLEEVE GASTROPLASTY FOR OBESITY: FEATURES INVOLVING THE LEARNING CURVE

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**DOI** 10.1055/s-0040-1704151

**Aims** Endoscopic sleeve gastroplasty (ESG) has positioned as one of the most promising incisionless technique to induce gastric volume restriction, leading to weight loss, having showed good short-term results within a safe profile. Its main drawback is a slow and challenging learning curve which has not yet been standardised.

We have conducted a prospective registry regarding the evolution in technique, compiling intraprocedural incidents, operating time, and adverse events within the first 70 consecutive ESG procedures performed in obese patients by a single endoscopist (AJPG) with previous several formation sessions in a pig-model.

**Methods** Evaluation of the first 70 consecutive ESG performed by the same endoscopist (AJPG) in a single center, since June 2017 to November 2019. The outcome measures were: length of procedure (OT); number of sutures and plicatures used per procedure; intraprocedural incidents description; length of hospital stay; and adverse events rate. All patients signed the informed consent and were done under antibiotic prophylaxis, CO<sub>2</sub> insufflation and general anesthesia in an inpatient basis. All procedures were done using the Apollo over-stitch system attached to a double channel Olympus 165 gastroscop after ruling out contraindications.

**Results** 70 consecutive patients (males) with a mean age years and mean BMI underwent ESG. OT decreased significantly across consecutive patients meanwhile the number of stitches and sutures did not differ significantly.

There was a decreasing trend in the number of intraprocedural incidents. Around 20 procedures were required to decrease the OT under 60 minutes, and around 50 surgeries to lower it below 50 minutes. There were two complications: two gastric bleedings solved by endoscopic treatments. Neither surgical rescue nor death were found.

**Conclusions** A progressive reduction in the length of procedure as augments the case load is expected during the learning curve of ESG as well as the number of incidents during the operating time.

## OP133 PERCUTANEOUS ENDOSCOPIC GASTROSTOMY IN PATIENTS WITH ACUTE STROKE. EARLY OR DELAYED PLACEMENT?

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**DOI** 10.1055/s-0040-1704152

**Aims** Percutaneous endoscopic gastrostomy (PEG) is indicated for patients with acute stroke and anticipated prolonged dysphagia for more than 28 days. The most favorable time for PEG placement is controversial. We aim to present our experience on the management of patients with acute stroke and dysphagia.

**Methods** As part of a clinical protocol, all patients admitted in the Neurology department of our hospital, from 11/2017-11/2019 for acute stroke and dysphagia were assessed. Patients eligible for PEG were scheduled for placement 28 days from the initial episode. PEG tubes 20-24Fr were placed (pull technique). Meanwhile enteral feeding was provided through nasogastric tubes. Early and long-term complications as well as outcome and mortality were recorded.

**Results** A total of 99 consecutive stroke patients with dysphagia were assessed [median(IQR) age 82(16.3) years, 55% female]. Ninety-four consented for PEG placement. The procedure was scheduled 34.5 (11.8) days after the stroke. Only 40.9% of the scheduled endoscopies were performed and PEG was placed in 34.4% of the patients originally assessed (84% of those scoped) all receiving aspirin. At the time of the appointment 28% have already recovered swallowing, 15% were deceased, 11% were lost follow-up, while in 6.5% PEG could not be placed due to lack of transillumination and endoscopically visible focal finger invagination (referral to surgical or radiologic PEG placement). In the follow-up period of 13.3 (10) months, 12.5% of those with PEG experienced early complications (3 hemorrhage, 1 respiratory tract infection), while 15% experienced late complications (1 buried bumper syndrome, 2 peri-stomal abscesses, 2 accidental removals). Two patients regained functional swallowing and PEG was removed.

**Conclusions** PEG placement in patients with stroke is safe and successful. Immediate placement after acute stroke does not appear cost-effective over delayed since almost half (43%) of the patients either regained functional swallowing or died due to disease severity within 30 days.

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Thursday, April 23, 2020

14:30 – 16:00

Polyp forensics: Colon advanced

Wicklow Meeting Room 3

Imaging 2

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## OP134 CLINICAL VALIDATION OF BLI ADENOMAS SERRATED INTERNATIONAL CLASSIFICATION (BASIC) FOR RESECT AND DISCARD STRATEGY FOR DIMINUTIVE COLORECTAL POLYPS (BIRD STUDY)

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Italy; 5 Humanitas Clinical and Research Center and Humanitas University, Digestive Endoscopy Unit, Division of Gastroenterology, Rozzano, Italy  
DOI 10.1055/s-0040-1704153

**Aims** Blue Light Imaging (BLI) Adenomas Serrated International Classification (BASIC) has been shown to accurately predict histology of  $\leq 10$  mm colorectal polyps in an artificial setting with BLI. Study aim: to validate BASIC in a clinical setting by using as reference standard the thresholds recommended by the American Society for Gastrointestinal Endoscopy for resect and discard (R&D) strategy.

**Methods** Consecutive outpatients referred for screening colonoscopy were included. Six endoscopists trained in BASIC participated in the study. All detected diminutive polyps were real-time BLI-characterized as adenoma or non-adenoma according to BASIC. All polyps were removed and sent for histopathology evaluation. Two thresholds were set:

I) a  $\geq 90\%$  accuracy in surveillance intervals prediction based on high-confidence predictions

of  $\leq 5$  mm polyps (and pathology for the others);

II) a  $\geq 90\%$  negative predictive value for  $\leq 5$  mm rectosigmoid polyps characterized with high-confidence.

The post-polypectomy surveillance intervals were based on both US Multisociety Task Force (USMSTF) and European Society of Gastrointestinal Endoscopy (ESGE) recommendations.

**Results** 333 patients (mean age $\pm$ SD: 62.7  $\pm$  8.1 years; M/F: 176/157) were included. BASIC accuracy in 748  $\leq 5$  mm polyps was 89% (95%CI: 85.9-90.6). The BLI-directed post-polypectomy surveillance interval was correctly predicted in 90% (95%CI: 86-93%) and in 96% (95%CI: 93-97%) of patients, according to USMSTF and ESGE recommendations, respectively. Out of 748  $\leq 5$  mm polyps, 334 were located in the rectosigmoid and 302 (90%) assessed with high-confidence; the negative predictive value for adenomatous histology was 91% (95%CI: 85-95%).

**Conclusions** The adoption of BASIC classification in clinical practice succeeded to match both of the reference thresholds for R&D strategy. (ClinicalTrialsRegistrationNumber: NCT03746171)

### OP135 COMPARISON OF THE PRECISION OF OPTICAL DIFFERENTIATION BETWEEN NEOPLASTIC AND NON-NEOPLASTIC SUBCENTRIMETRIC POLYP HISTOLOGY BY ENDOSCOPIC EXPERTS AND ARTIFICIAL INTELLIGENCE DEEP LEARNING NEURAL NETWORK (POLYPBRAIN)

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DOI 10.1055/s-0040-1704154

**Aims** **Background** Precise differentiation between sub-centimetric neoplastic and non-neoplastic polyps is important. New polyp classification systems such as BASIC classification and artificial intelligence deep learning algorithm-based Decision Support System (AI-DSS) are developed to achieve high accuracy necessitated by application of the resect-and-discard strategy in everyday practice for non-expert endoscopists.

Our aim was to compare the performance and accuracy of our recently developed AI-DSS to five colonoscopic experts (more than 2000 colonoscopy per year and 20000 during their career) familiar with BASIC classification in the differentiation between neoplastic (adenomas) and non-neoplastic (hyperplastic lesions) sub-centimetric polyps.

**Methods** AI-DSS was trained on our anonymous electronic database from a total of 1800 histologically identified sub-centimetric colorectal polyps and 26000 HD, electronic chromo-endoscopic images. All polyps were removed and sent for histology for final diagnosis. We excluded malignant, juvenile, inflammatory and sessile serrated polyps from the current study protocol. Test set contained 61 HQ pictures from randomly selected polyps (31 neoplastic and 30 non-neoplastic) that was made with Blue Light Imaging (BLI) combined with 50 times optical zoom technology. We made sure that the same polyp's images were not selected to both train and test sets.

**Results** In the prediction of histology, AI-DSS versus experts achieved similarly excellent results without significant differences in accuracy, sensitivity, specificity, PPV and NPV: 96.72% vs. 93.03%, 100% vs. 92.74%, 93.55% vs 93.34%, 100% vs. 93.85% and 93.75% vs. 93.09%, respectively. There was a good inter-observer agreement according to the BASIC classification predictors in each polyp and this was correlated with the final histology well.

**Conclusions** The potential of using our AI-DSS Polypbrain is that it could provide a highly accurate tool for real-time optical diagnosis of neoplastic and non-neoplastic polyps at a similar precision level as high quality expert endoscopists. (Our study was supported by EU Grant: GINOP 2.1.1.-15-2015-00128).

### OP136 COLON POLYP DETECTION USING LINKED COLOR IMAGING COMPARED TO WHITE LIGHT IMAGING: A SYSTEMATIC REVIEW AND META-ANALYSIS

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DOI 10.1055/s-0040-1704155

**Aims** Linked color imaging (LCI) is a novel image enhancing technology which enhances color differences between a colon lesion and surrounding mucosa with enough brightness to illuminate the wide colorectal lumen. The aim of this study is to compare colorectal polyp detection using LCI with white light imaging (WLI).

**Methods** This systematic review and meta-analysis were performed based on a registered protocol of the International Prospective Register of Systematic Review (PROSPERO, ID: CRD42019136918). Randomized controlled trials and prospective studies comparing LCI with WLI for colorectal polyp detection were selected. Outcomes included overall polyp/adenoma detection and additional polyp detection at a second observation. Outcomes were documented by pooled risk ratios (RR) with 95% confidence interval (CI) using the Mantel-Haenszel random effect model.

**Results** Six studies were included. LCI showed significant superiority for polyp and adenoma detection compared with WLI (RR 1.15, 95%CI 1.04-1.29,  $p=0.010$  for polyp detection, RR 1.29, 95%CI 1.14-1.47,  $p<0.001$  for adenoma detection). LCI had a greater likelihood of increasing the number of polyps detected per patient compared with WLI (mean difference 0.29, 95%CI -0.10-0.68,  $p=0.150$ ). LCI significantly increased the number of adenomas detected per patient compared with WLI (mean difference 0.27, 95%CI 0.03-0.50,  $p=0.030$ ). LCI had a trend toward an increased number of flat polyps detected per patient compared with WLI (mean difference 0.22, 95%CI -0.02-0.45,  $p=0.070$ ). LCI had a significantly higher rate of additional polyp detection compared with WLI in the right colon (RR 2.68, 95%CI 1.71-4.19,  $p<0.001$ ).

**Conclusions** LCI has significantly greater polyp and adenoma detection rates and detection rate of previously missed polyps compared with WLI. LCI has the potential to decrease the rate of interval cancers by improving colorectal polyp detection due to its brightness and color enhancement. We recommend the initial use of LCI for routine colonoscopy.

## OP137 VALIDATION OF THE BASIC CLASSIFICATION SYSTEM FOR THE OPTICAL DIFFERENTIATION BETWEEN NEOPLASTIC AND NON-NEOPLASTIC SUBCENTRIMETRIC POLYP HISTOLOGY BY ENDOSCOPIC EXPERTS AND TRAINEE ENDOSCOPISTS

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**DOI** 10.1055/s-0040-1704156

### Aims

**Background** Blue Light Imaging (BLI) is a new electronic chromoendoscopic technology that enhances mucosal pits and capillary patterns. A new BLI classification was recently developed to facilitate better endoscopic characterization of colorectal polyps (BLI Adenoma Serrated International Classification (BASIC)). The aim of our present study was to analyze and validate the BASIC classification in predicting polyp histology of experienced and trainee endoscopists.

**Methods** Five colonoscopic experts (more than 2000 colonoscopy per year and 20000 during their carrier) familiar with BASIC classification and five trainee endoscopist (1-2 year of colonoscopy experience and 500-1000 colonoscopy during their carrier) participated in this study. 61 HQ, HD polyp pictures made with BLI combined with 50 times optical zoom were randomly selected from our anonymous electronic database (31 neoplastic and 30 non-neoplastic). All participants evaluated these images to assess baseline accuracy, sensitivity, specificity, and positive and negative predictive values of polyp histology prediction. Each endoscopist was trained with the BLI classification from the BLI teaching website. Results were compared between trainees and experts regarding both interobserver agreement in each individual BASIC descriptor.

**Results** Experts achieved significantly more precise results in the prediction of more advanced histology (adenoma), as compared to trainees as follows in accuracy, sensitivity, specificity, PPV and NPV: 93,03% vs. 72,95%, 92,74% vs. 58,07%, 93,34% vs 88,34%, 93,85% vs. 83,49% and 93,09% vs. 67,82%, respectively. The interobserver level of agreement was good ( $K = 0.85$ ) in the experienced cohort and weak ( $K = 0.45$ ) in the trainee group.

**Conclusions** BLI combined with optical zoom technology is a useful tool for precise optical diagnosis of polyp histology to support the resect-and-discard strategy. The clinical application of BASIC with an adequate assessment of different predictors necessitates chromoendoscopic expertise, but in contrast non-expert trainee endoscopist get little aid from BASIC to get better differential diagnosis

## OP138 DIAGNOSTIC ACCURACY OF THE JNET CLASSIFICATION FOR ENDOSCOPIC DIAGNOSIS OF COLORECTAL LESIONS: A META-ANALYSIS

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**DOI** 10.1055/s-0040-1704157

**Aims** Magnification using narrow band imaging (NBI) has been established as a reliable method for differentiating neoplastic from non-neoplastic colorectal lesions emphasizing surface and vessel pattern of these lesions. Several classifications have been proposed but recently, a newer classification, the Japan NBI Expert Team (JNET) has been developed.

**Methods** A comprehensive literature search from the PubMed Central, Embase, Cochrane Library, and Ovid was performed with the following search terms:

JNET, NBI and colorectal lesions. Three studies were selected and validated using the QUADAS-2 model. Summary estimates; the pooled sensitivity, specificity, diagnostic odds ratio (DOR) and Areas under the Curve (AUC) of JNET for the diagnosis of colorectal lesions were computed using random-effects models using the R statistical software. The primary outcome of study was the diagnostic accuracy of the JNET classification in the endoscopic diagnosis of colorectal lesions in comparison to histopathologic findings.

**Results** Three trials comprising of 4,534 reviewed lesions were analyzed. The pooled sensitivity and specificity of the JNET classification in the endoscopic diagnosis of colorectal lesions were computed from the three trials. Type 1 was diagnosed with a pooled sensitivity of 82.74% (95% CI 73.91-89.03) and a pooled specificity of 99.43% (95% CI 96.21-99.91). JNET type 2A has a pooled sensitivity of 91.03% (95% CI 83.93-95.18) and a pooled specificity of 73.67% (95% CI 69.74-77.26). JNET type 2B has a pooled sensitivity of 58.08% (95% CI 43.59-71.29) and a pooled specificity of 90.22% (95% CI 82.32-94.81). JNET type 3 was diagnosed with a pooled sensitivity of 42.75% (95% CI 28.67-58.11) and a pooled specificity of 99.89% (95% CI 99.55-97).

**Conclusions** This study shows that as the colorectal lesion becomes endoscopically complex on NBI, the sensitivity of the JNET classification decreases while the specificity remains high. Endoscopists start to have varied endoscopic diagnosis for lesions that are JNET Type 2B and 3.

## OP139 AUTOMATED POLYP DETECTION ON CAPSULE ENDOSCOPY USING AN INTEGRATED 2D AND 3D DEEP NEURAL NETWORK

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**DOI** 10.1055/s-0040-1704158

**Aims** We report an integrated CNN framework that utilizes color and depth (3D) information for automated polyp detection. Our goal is to demonstrate advantages gained by adding 3D information.

**Methods** A region-based CNN (R-CNN) (focused on region of interest) was designed to take both color and depth into consideration.

**Results** The R-CNN backbone was initialized with ImageNet and COCO weights for performance studies. To produce depth information, a 3D depth CNN was designed and trained using NYU-Depth V2 dataset (1449 images). To train R-CNN, 530 CE frames with polyps extracted from 120 short de-identified videos were used. Polyps were annotated using VGG (Visual Geometry Group) Image Annotator. During network training, 60% of images were augmented (changed in scale and rotation) to ensure that the network used a different image set for every step. Performance of the trained networks was measured using 55 CE video frames. Table 1 shows detection and performance with ImageNet and COCO weights. Average performance was 76.38% and 85.07% on precision and sensitivity, respectively. There was inaccurate characterization of some debris, bubbles and reflected light as polyps.

**Conclusions** The R-CNN framework demonstrated marginally improved results over color based CNN. Image quality and different polyp views affected its performance. Since the 3D depth CNN was trained on non-GI tract video frames, the extracted depth information did not meet accuracy level for endoscopic application. Future work includes use of an accurate 3D training dataset obtained from close range images to improve 3D depth CNN, and performance of R-CNN.

► **Tab. 1** Performance with ImageNet and COCO weights

Weights	Precision	Sensitivity
ImageNet	64.71	82.09
COCO	88.06	88.06

## OP140 THE INCREMENTAL BENEFIT OF DYE-BASED CHROMOENDOSCOPY AS COMPARED TO HIGH-DEFINITION WHITE LIGHT AND VIRTUAL CHROMOENDOSCOPY FOR LESION ASSESSMENT AND PREDICTION OF SUBMUCOSAL INVASIVE CANCER

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**DOI** 10.1055/s-0040-1704159

**Aims** Analysis of the surface pit pattern (SPP), of large (>/=20mm) laterally spreading colonic lesions (LSL) can help predict the risk of submucosal invasion (SMI) has relied upon the use of dye-based chromoendoscopy (DBC) for a reliable assessment of SPP. However, the utility of virtual chromoendoscopy (VC), combined with high definition white light (HDWL) for lesion assessment remains unknown.

We sought to assess the incremental benefit of DBC in addition to HDWL plus VC for the assessment of SPP and prediction of SMI in colonic LSL referred for EMR.

**Methods** A prospective observational study of consecutive lesions referred for EMR at a single tertiary referral centre was performed (NCT03506321). Prior to resection lesion assessment of surface pit pattern was initially performed using HDWL + VC [Narrow band imaging (NBI), Olympus, Tokyo] by two trained independent blinded observers. The results were recorded by a third independent observer. Thereafter, DBC (0.2% indigo carmine) was performed and a repeat assessment performed by the same blinded observers.

**Results** Over 22 months to September 2019, 205 consecutive LSL in 205 patients (50.7% - male) were enrolled. The overall rate of SMI was 9.2% (19/205).

Presence of a demarcated area on the lesion surface for all lesions had a NPV of 95.1%, 95%CI(90.5-97.6) for predicting SMI at histology with no additional benefit from the addition of DBC (NPV [94.6%, 95%CI(90.0-97.3)]).

Rate of inter-observer agreement was high between the two blinded observers, independent of whether DBC was used; k-0.98 (SE - 0.03) with HDWL plus VC and k-0.96 (SE - 0.03) with HDWL, VC and DBC.

**Conclusions** The absence of a demarcated area (where a regular neoplastic pit-pattern becomes disordered) within LSL is strongly predictive for the absence of submucosal invasion histologically, can be determined without the need for dye-based chromoendoscopy and has a high rate of interobserver agreement amongst experts.

## OP141V ACETIC ACID (AA) AND NARROW BAND IMAGING (NBI) FOR BETTER DELINEATION OF MARGINS IN SESSILE SERRATED LESIONS (SSLs)

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**DOI** 10.1055/s-0040-1704160

**Aim** To examine if combination of AA spray with NBI would help in better delineation of margins in SSLs

**Methods** After identification of SSL, 10mls of AA(1.5%) is applied over the surface of the polyp flushing down the working channel. After 60s, the lesion is examined with NBI before resection

**Results** Use of AA and NBI resulted in better margin delineation in SSLs.

**Conclusions** As far as we know, there are no reported literature on use of acetic acid spray followed by NBI to accurately identify the margins in a SSL. The video demonstrates this can be easily done.

## OP142V ENDOSCOPIC ASSESSMENT OF ADVANCED SERRATED LESIONS OF THE COLORECTUM

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**DOI** 10.1055/s-0040-1704161

Sessile serrated lesions (SSLs) with dysplasia (irregardless of grade) are considered advanced lesions requiring en-bloc resection where appropriate. Careful endoscopic assessment is essential and facilitates optimal decision making and management. We suggest the following stepwise approach:

- 1) Careful washing of surface mucous.
- 2) Overview to demonstrate the Paris Classification and border delineation using an image enhancing modality such as NBI +/- chromo-endoscopy.
- 3) Close assessment of surface patterns, using near focus/magnification if available.

Endoscopic characteristics of advanced SSLs include; semi-pedunculated morphology, double elevation, central depression, reddishness and Kudo pit patterns type III-V in addition to type II pits.

**Thursday, April 23, 2020**

**16:30 – 18:00**

**Stent, seal, stitch. Advanced upper GI therapeutics**

**Ecocem Room**

## OP143 RE-DO ENDOSCOPIC SLEEVE GASTROPLASTY: TECHNICAL ASPECTS AND SHORT-TERM OUTCOMES

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**DOI** 10.1055/s-0040-1704162

**Aims** Endoscopic Sleeve Gastroplasty (ESG) is a restrictive endoscopic bariatric procedure providing excellent results in the recent years (16% TBWL at 6 months, 1.1% complications). As every endoscopic procedure, ESG is repeatable. In this short case series, we analyze the technical aspects and short-term outcomes of the re-do ESG.

**Methods** A retrospective analysis was done on a prospective database collecting data of all patients selected for bariatric endoscopy (ESG) by a multidisciplinary team between March-2017 and May-2019. Patients that underwent a re-do ESG because of progressive satiety loss, weight regain or insufficient weight loss due to high baseline BMI were included. %EWL, %TBWL and Bariatric Analysis and Reporting Outcome System (BAROS) questionnaire were evaluated during follow-up.

**Results** 120 ESG procedures were performed with mean %EWL 44.4 (+/- 19.5), mean %TBWL 18.3 (+/- 6.7) and mean BAROS 4.5 (+/- 1.7) at 12 months. Four patients underwent re-do ESG. Three of them had re-do ESG after 12 months from the 1<sup>st</sup> ESG, whereas one of them after 7 months. During the 2<sup>nd</sup> procedure, old threads were removed with a seizure and new stitches were positioned following a triangular pattern (maximum three bites per suture line) and avoiding overlapping the previous stitches. No adverse events were reported intraoperatively. Six months follow-up was available for 3 patients: mean %EWL and %TBWL were 44.2% (30.5%-59.1%) and 20.4% (16.7%-24.5%) respectively; BAROS questionnaire mean score was 6.3 (range 6-7). One patient had only 1 month follow-up: mean %EWL and %TBWL were 33.3 and 12.2 respectively; BAROS questionnaire reported score was 6. All included patients reported excellent satiety feeling after re-do ESG.

**Conclusions** The re-do ESG short term outcomes are completely satisfying in terms of safety and efficacy. Performing re-do ESG should be considered as a second step of the endoscopic treatment strategy and not as a failure of the previous procedure.

## OP144 GASTRIC ENDOSCOPIC SLEEVE PLICATION (GESP): AN INTERNATIONAL MULTICENTER PROSPECTIVE TRIAL

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**DOI** 10.1055/s-0040-1704163

**Aims** Obesity is a major disease, endoscopic procedures are becoming important tool for obesity treatment. The Gastric Endoscopic Sleeve Plication (GESP) procedure, performed using the Incisionless Operating Platform (IOP) (USGI, San Clemente, CA), involves a new pattern of full-thickness gastric plications with durable suture anchor pairs that both shortens and tabularizes the greater curvature of the stomach. This international, protocol-driven, prospective multicenter trial examined the impact of the safety and efficacy of the GESP procedure.

**Methods** 41 patients enrolled under an IRB protocol in three centers (2 Spain, 1 US under an FDA IDE). The same moderate intensity lifestyle intervention and follow-up implemented across all centers. Impact on satiety and satiation was measured using standardized questionnaires. Hepatic steatosis was measured via controlled attenuation parameter (CAP) with transient elastography.

**Results** 41 subjects (mean age 44.3±9.4 years, mean body mass index 37.3 ±1.7 kg/m<sup>2</sup>, 61% female) underwent GESP with 19 (IQR 13-21) suture anchor pairs. Mean procedural time was 37min ± 11min under general anesthesia. Percent total body weight loss (TBWL) was 17.53±6.59% at 9 months (n =32/33). Only one patient was lost to follow-up. No serious adverse events reported. Fasting and post-prandial satiety and satiation scores improved significantly at 2 and 6 months compared to baseline (p < 0.001) Alanine aminotransferase (n =36) improved from a baseline of 33.4 mg/dL to 19.1 mg/dL at 6 months (p = 0.0074), with a corresponding improvement in hepatic steatosis from a baseline CAP (n=15) of 299 dB/m to 220 dB/m at 6 months (p = 0.00024).

**Conclusions** GESP is a minimally invasive, effective, scalable, and durable procedure that targets multiple physiologic appetite pathways. It offers a real therapeutic option to fill the obesity management gap.

We also can see the metabolic effect of the procedure with improvement of hepatic function.

## OP145 EFFICACY OF INTRAGASTRIC BALLOONS FOR WEIGHT LOSS IN OVERWEIGHT AND OBESE ADULTS: A SYSTEMATIC REVIEW AND META-ANALYSIS OF RANDOMIZED CONTROLLED TRIALS

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**DOI** 10.1055/s-0040-1704164

**Aims** More than 1.9 billion adults are overweight, and 650 million are obese globally, and yet these overwhelming statistics continue to rise. Endoscopic bariatric and metabolic therapies (EBMTs) are minimally invasive procedures developed to complement the obesity treatment. Intra-gastric balloons (IGB) are the most widely used EBMT, but studies have shown variable weight loss outcomes. We aimed to evaluate the efficacy of IGBs in comparison to lifestyle interventions alone for weight loss in overweight and obese patients.

**Methods** The study was conducted in accordance with the PRISMA guidelines. Electronic searches were performed using MEDLINE, EMBASE, Cochrane CENTRAL, and Lilacs/Bireme databases from their dates of inception to November

2019. Only Randomized Controlled Trials (RCTs) were eligible for inclusion. The primary outcomes were the difference in mean percentage of excess weight loss (%EWL) and percentage of total weight loss (%TWL). Absolute weight loss (AWL), body mass index loss (BMIL), final BMI, and final weight were also analyzed.

**Results** A total of 6520 studies were screened for eligibility. Out of these, 13 RCTs with 1523 patients (859 in the intervention group and 664 in the control group) were finally included in the meta-analysis. The difference in mean %EWL and %TWL at follow up was 17.98% (95%CI 8.37-27.58), and 4.40% (95%CI 1.37-7.43), respectively, which was significantly higher in the IGB group. Similarly, the difference in mean final BMI, final weight, AWL, and BMIL between IGB group and control group as -3.02 (95%CI, -4.53 - -1.51), -5.68 kg (95%CI, -8.92 - -2.43), 6.12 kg (95%CI, 3.80 - 8.44), and 2.13 kg/m<sup>2</sup> (95%CI, 0.57 - 3.68), respectively. The BMI range was 27 to 65, and the duration of follow up after IGB varied between 3 months to 8 months.

**Conclusions** IGB therapy is more effective than lifestyle intervention alone for weight loss in overweight and obese adults.

## OP146 EFFICACY OF ENDOSCOPIC TOPICAL MITOMYCIN C APPLICATION IN CAUSTIC ESOPHAGEAL STRICTURES IN THE PEDIATRIC POPULATION: A SYSTEMATIC REVIEW AND META-ANALYSIS OF RANDOMIZED CONTROLLED TRIALS

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**DOI** 10.1055/s-0040-1704165

**Aims** Caustic ingestion and consequential esophageal strictures constitute a significant health problem in childhood. Multiple sessions of endoscopic dilatation are usually required to manage caustic esophageal strictures. Recently, the application of topical mitomycin C as an adjuvant treatment with endoscopic dilatation therapy has shown promising results in improving symptoms and decreasing the number of dilation sessions. We aimed of this study is to evaluate the efficacy of endoscopic topical mitomycin C application in the treatment of caustic esophageal strictures in the pediatric population.

**Methods** We searched MEDLINE, EMBASE, Central Cochrane, and LILACS databases, as well as the gray literature, to identify RCTs comparing topical mitomycin C application with endoscopic dilations and endoscopic dilations alone for treatment of caustic esophageal strictures in pediatric patients. The outcomes evaluated were dysphagia resolution rate, number of dilations performed in resolved cases, and the number of dilations performed in all patients.

**Results** Search results yielded a total of 534 records. Out of these, three RCTs with 190 patients were included for the final analysis. All dilations were performed using semiflexible thermoplastic bougies. Topical mitomycin C application group showed a significant increase in dysphagia resolution rate, corresponding to a 42% higher dysphagia resolution as compared to endoscopic dilation alone (RD 0.42 (95%CI: 0.29-0.56); p-value < 0.00001). The mean number of dilations performed in resolved cases were significantly less in the topical mitomycin application group compared to endoscopic dilations alone (MD: 2.84 (95%CI 1.98-3.69); p-value < 0.00001). Comparing the number of dilations in all patients, there was no statistical difference (MD: 1.46 (95%CI 1.53-4.44); p-value = 0.34).

**Conclusions** Application of topical mitomycin C with endoscopic dilations in caustic esophageal strictures was more effective in dysphagia resolution than endoscopic therapy alone in the pediatric population. Moreover, topical mitomycin C application also reduced the number of dilatation sessions needed to alleviate dysphagia.

## OP147 ENDOSCOPIC TREATMENT OF COMPLETE ESOPHAGEAL OBSTRUCTION: A COMPARISON BETWEEN TWO DIFFERENT APPROACHES

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**Aims** The development of esophageal stricture is frequently observed after radiochemotherapy (RCT). At the same time, with an incidence < 1%, complete esophageal obstruction is a rare complication of RCT. Nevertheless, complete obstruction is associated with significant impairment in the quality of life and renders patients susceptible for the development of secondary conditions such as aspiration pneumonia. Within this study, compared the outcome of two different techniques for lumen restoration of a completely obstructed esophagus.

**Methods** Technical success, complication rate and development of dysphagia during follow-up were compared in patients with aphagia and documented complete esophageal obstruction that were treated with either antegrade recanalization during EGD (Group A) or combined antegrade - retrograde recanalization perorally and through gastrostomy by endoscopic rendezvous (Group B).

**Results** A total of 14 patients (mean age 67.8 years) with complete esophageal obstruction were included. In Group A (n=6, antegrade approach), esophageal recanalization was performed by a single endoscopist with a mean procedure duration of 67 minutes. In two of the six patients, solely antegrade recanalization led to unintended formation of a false lumen (i.e. submucosal tunneling) followed by mediastinitis which resolved under conservative treatment. In group B (n=8, combined antegrade-retrograde rendezvous procedure) median procedure time to achieve esophageal recanalization was longer (mean duration 87 minutes) compared to group A; however, no intra- or postprocedural complications were observed. Median follow-up (FU) was 25 (Group A) and 26 months (Group B). Due to incompliance, five patients of group B, did not follow a regular bouginage protocol after restoration of esophageal patency, leading to re-occurrence of complete esophageal obstruction during FU. Importantly, all these re-occurred complete obstructions were successfully re-canalized with antegrade-retrograde endoscopic rendezvous.

**Conclusions** Rendezvous recanalization is a reliable and safe method to re-establish luminal patency and should be the preferred method for the treatment of complete esophageal obstruction

## OP148 ACUTE ESOPHAGEAL PERFORATION: DOES ENDOSCOPIC VACUUM THERAPY ABANDON SURGERY ?

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DOI 10.1055/s-0040-1704167

**Aims** Endoscopic vacuum therapy (EVT) has been proven to be an effective tool for closure of postoperative anastomotic leaks. We report a series of acute esophageal perforations treated with EVT successfully.

**Methods** EVT was started immediately after perforation (d0:4 d1:2). After positioning of a gastric feeding tube, the sponge (Esosponge, Braun) was inserted into the esophageal lumen covering the perforation site. Sponge were exchanged twice a week until complete endoscopic closure. Patients were covered with a broad spectrum antibiotic iv.

**Results** Between 5- 2018 and 11- 2019 6 patients (m:3; 3-79 y) experienced acute esophageal perforation, all treated with EVT. One 3 year old child with strictures four weeks after caustic ingestion emerged a 20 mm perforation in the middle esophagus during endoscopic dilatation therapy. In 3 patients (73 y,

78 y, 79 y) acute perforation occurred after endoscopic pneumatic balloon dilatation (30 mm, Rigiflex) for achalasia at the distal esophagus (30- 50mm). The other two perforations were located in the proximal esophagus. One patient (67 y) with esophageal involvement of pemphigus vulgaris emerged perforation (40 mm) during initial endoscopic esophageal intubation. A 25 year old man showed a 20 mm perforation directly below the upper esophageal sphincter after alcoholized ingestion of a broken piece of glass.

Mean number of sponge exchanges needed were 2.8 (1-5) with a mean duration of EVT therapy of 10.2 days (4-21). After endoscopic diagnosis of closure patients started to drink and gradual returned to solid food under clinical control. EVT resulted in complete closure of the acute esophageal perforation in all 6 patients.

**Conclusions** Endoscopic vacuum therapy is able to close acute esophageal perforation within 1 to 3 weeks. In our case series intraluminal positioning of the sponge was sufficient. Immediate start of EVT to prevent abscess formation and induce defect closure is crucial.

## OP149V CLOSURE OF TRACHEOESOPHAGEAL FISTULA USING ENDOSCOPIC SUTURING

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DOI

The patient is a 52-year-old male with a history of recurrent episodes of respiratory infections since childhood who presented with increased frequency of both respiratory infections and a feeling of coughing and choking with eating. Upon evaluation, he was diagnosed with a tracheoesophageal (TE) fistula via upper GI series and CT scan. Upper endoscopy showed the TE fistula with multiple openings. Given the complexity of the fistula, the TE fistula was closed with endoscopic suturing. The patient felt well post-procedure and was eating with no difficulty. Endoscopic suturing provides a minimally invasive solution in select cases of TE fistula.

## OP150V SERIOUS AND INFREQUENT COMPLICATION AFTER PLACEMENT OF LAMS - AXIOS - IN A REFRACTORY STENOSIS OF ESOPHAGOEYUNAL ANASTOMOSIS

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DOI 10.1055/s-0040-1704169

Placement of LAMS has been described to drain pancreatic collections and has been use to treat refractory gastrointestinal anastomosis.

We present a 64 year old male with stenosis of esophagoyeunal anastomosis, refractory to several endoscopic procedures (hydrostatic dilatation, stricturotomy, partially covered ultraflex stent), so we decided to place LAMS (AXIOS). Later, the patient suffered hemorrhagic shock. It was performed an angio-CT, with an aorto-enteric fistula, because of decubitus of the LAMS. It was solved with an aortic endoprosthesis. Despite of this, the patient died because of multiple complications.

This complication has never been described before in the literature.

## OP151V RECANALIZATION OF ESOPHAGEAL OCCLUSION BY ELECTROCAUTERY ENHANCED ENDOSCOPIC RENDEZ-VOUS

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DOI 10.1055/s-0040-1704170

A gastroscope was introduced per os, and an ultrathin gastroscope was introduced retrogradely, until esophageal occlusion.

After transillumination and X-Ray guided endoscopic alignment, a tunnel through the disconnected esophagus was performed using the electrocautery of "Hot Axios" stent. Axios stent was deployed but the proximal flange dislodged. A guide wire was introduced and a balloon dilation was performed.

The axios stent was removed and a fully covered stent was deployed, left in place for 4 months and withdrawn with "stent in stent" technique. Despite oral steroids, an esophageal stricture developed, that was solved with 4 dilation sessions and intralesional steroids.

Thursday, April 23, 2020

Pancreatic cystic lesions

16:30 – 18:00

Liffey Hall 1

### OP152 IMPACT OF DEEP TARGETED NEXT GENERATION SEQUENCING ON THE WORK-UP OF PATIENTS WITH PANCREAS CYSTS OR DILATED DUCT - A PROSPECTIVE STUDY WITH EUS-GUIDED FNA

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DOI 10.1055/s-0040-1704171

**Aims** Pancreas cysts or dilated pancreatic ducts were often detected by cross sectional imaging methods, but only mucinous neoplasia may develop pancreas cancer. Precise distinction between mucinous and non-mucinous cysts is crucial for clinical decision. We performed a prospective study (NCT03820531) on patients with pancreas cyst(s) and/or dilated main duct including Next Generation Sequencing (NGS) in the diagnostic work up of EUS-guided FNA.

**Methods** Pancreas cyst ( $\geq 10$ mm) or main duct fluid was analysed by CEA, cytology and deep targeted NGS using the OncoPrint Tag Sequencing Barcode Set of 14 known gastrointestinal cancer genes with a limit of detection level down to 0.01 % mutant allele frequency. Results were compared with histopathology and clinical follow up.

**Results** 93 patients with incidental pancreas cyst(s) and/or dilated pancreas main duct  $\geq 5$ mm were screened. 51 patients were excluded, mainly due to inoperability or small cyst size  $\leq 10$ mm. 42 patients and 7 negative controls were enrolled in further analysis. KRAS/GNAS-mutations were identified most often and were detected in all histologically proven mucinous neoplasia but not in non-mucinous cysts, chronic pancreatitis or acute pseudocysts. Some cysts harboured multiple KRAS/GNAS-mutations. Deep targeted NGS, cytology and CEA had a sensitivity and specificity of 100%/100%; 50%/100% and 58.3%/85.7% on the basis of 24 patients with final diagnosis. KRAS/GNAS-analysis had an impact on clinical decision in 29/42 (69%) patients (operation versus follow up versus end of follow up).

**Conclusions** Deep targeted NGS in pancreas cyst/duct fluid specifies the diagnostic work up of patients with pancreas cysts  $\geq 10$ mm and/or main duct dilation  $\geq 5$ mm and may direct clinical decision. Results have to be proven by a greater cohort.

### OP153 IMPACT OF CYST FLUID GNAS AND KRAS MUTATIONAL ANALYSIS ON PANCREATIC CYST CATEGORIZATION IN PATIENTS EVALUATED BY EUS-FNA: A SINGLE-CENTER EXPERIENCE OF 103 PATIENTS

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DOI 10.1055/s-0040-1704172

**Aims** Preoperative categorization of pancreatic cysts (PC) is hampered by lack of accurate imaging and ancillary markers. Somatic mutations in KRAS and GNAS in cystic fluid are specific for mucinous PC (mPC).

**Aims:** To describe the frequency of GNAS/KRAS mutations in PC fluid obtained by endoscopic ultrasound-fine-needle aspiration (EUS-FNA) and to analyze its impact over imaging/CEA/cytology in predicting mPC.

**Methods** Patients with PC who underwent USE-PAAF and GNAS/KRAS analysis in cystic fluid were prospectively collected. PC were categorized as mPC, non-mPC or indeterminate (iPC) based on magnetic resonance cholangiopancreatography and USE, intracystic carcinoembryonic antigen concentration (CEA) and fluid cytology.

**Results** 103 patients were analyzed. CEA was performed in 72 (70%) and cytology in 84 (81%). Imaging/CEA/cytology identified 47 (46%) mPC, 4 (4%) non-mPC (3 pseudocysts, 1 paraduodenal cyst) and 52 (50%) iPC. Either GNAS or KRAS mutations were found in 59 (57%) PC (38 mPC, 0 non-mPC, 21 iPC). Hence, GNAS/KRAS mutations reclassified 41% of iPC into mPC, yielding 69 (70%) mPC and 31 (30%) iPC. Of 69 mPC, 59 (85%) were GNAS and/or KRAS mutated, 49 (47%) only GNAS, 28 (27%) only KRAS and 19 (27%) both GNAS and KRAS. Mutational analysis showed better sensibility and specificity (85% and 100%) than CEA (35% and 75%) and cytology (33% and 96%) to predict mPC. Within CEA negative ( $< 192$  ng/mL) mPC (65%), 90% showed GNAS and/or KRAS mutations. Of 16 PC that were surgically resected, 12/13 (93%) mPC had GNAS/KRAS mutations and 3/3 non-mPC showed no mutations.

**Conclusions** There is a high prevalence of GNAS/KRAS mutation in mPC fluid obtained by EUS-FNA, which increases the diagnostic yield over imaging/CEA/cytology. These results support its use in the decision tree algorithm for PC typecasting.

### OP154 GLUCOSE LEVELS IN EUS-ASPIRATED CYST FLUID HAVE A HIGH ACCURACY FOR THE DIAGNOSIS OF MUCINOUS PANCREATIC CYSTIC LESIONS

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DOI 10.1055/s-0040-1704173

**Aims** Differential diagnosis (DD) between mucinous (M) and non-mucinous (NM) pancreatic cystic lesions (PCLs) is fundamental for appropriate patients' management. CEA levels  $> 192$  ng/ml are considered suggestive of mucinous cysts (MC),

yet with limited accuracy. Recent studies have suggested that low intracystic glucose levels are associated with MC.

Aim of the study was to assess diagnostic accuracy of intracystic glucose as compared to CEA levels in EUS obtained cyst fluid to differentiate MPCLs vs NMPCLs.

**Methods** We prospectively enrolled PCLs-EUS+FNA(22G-needle) from July 2018 to October 2019. Glucose and CEA levels were examined in hospital laboratory with same methods as for circulating levels. All the samples were evaluated by expert cytopathologists with rapid on site evaluation(ROSE). Glucose and CEA diagnostic accuracy was evaluated considering as "gold standard" the pathology report in case of surgery, FNA cytological report and/or imaging features(MRI,EUS) in other cases as agreed by 2 expert pancreatologists blind to PCLs fluid analysis.

**Results** 48 patients with PCLs were enrolled (mean age 60, cysts mean size 46 mm).

Final diagnosis, based on surgical pathology in 6 cases, on EUS-cytology in 15 cases and on endoscopic/imaging data in the remaining 27 cases, was of MPCLs in 50% (IPMNs), serous cystic adenomas in 33.3%, pseudocyst in 4.2%, cystic neuroendocrine tumors in 4.2% (Ki67: 2% and 3% respectively) and mesenteric cyst, simple cyst and Schwannoma in 1 case each.

Mean intracystic glucose level was 13 mg/dl (95% CI 2.2-24) in MPCLs and 93.6 mg/dl (95% CI 84.2-102.9) in NMPCLs ( $p < 0.0001$ ).

At ROC curve the best glucose cut-off to distinguish M- and NM-PCLs was 30 mg/dl. Intracystic glucose  $\leq 30$  mg/dl showed an AUC of 0.95 (CI 0.85-0.99), with 91.3% sensitivity and 100% specificity.

AUC for CEA  $\geq 192$  ng/ml was 0.69 (CI 0.54-0.81) with sensitivity 37.5% and specificity 100%.

There was no correlation between glucose levels and cyst-size or CEA-levels.

**Conclusions** Intracystic glucose dosage of cyst fluid obtained during EUS-FNA represents a valid and simple tool for M- vs NM-PCLs DD, being more accurate than CEA levels. Mechanisms leading to different glucose levels in different cyst types remain unexplored.

## OP155 ACCURACY OF NEEDLE-BASED CONFOCAL LASER ENDOMICROSCOPY (NCLE) IN THE DISCRIMINATION OF MUCINOUS VS NON MUCINOUS PANCREATIC CYSTIC LESIONS: AN ITALIAN MULTICENTER PROSPECTIVE STUDY

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DOI 10.1055/s-0040-1704174

**Aims** Pancreatic cystic lesions (PCLs) are considered a precursor of pancreatic cancer as some of them may carry malignant potential.

Confocal laser endomicroscopy is an innovative technique able to visualize to a micron resolution the mucosal layer, during endoscopic procedure. Its luminal application demonstrated excellent results in the distinction of neoplastic vs benign tissue. Limited data from 3 clinical trials are available about the accuracy of the technique. This study evaluated the accuracy of nCLE in patients with indeterminate PCL undergoing EUS-FNA to distinguish mucinous from non mucinous lesions.

**Methods** The study prospectively recruited patients who required EUS-FNA between January 2015 and December 2017 in four referral centers. All patients were followed up for at least 12 months with lab test and CT scan or MRI.

nCLE videos were independently reviewed from 6 observers to achieve an NCLE final diagnosis (mucinous vs non mucinous) based on criteria derived from previous studies; in case of disagreement  $>20\%$  a final diagnosis was discussed after a consensus re-evaluation. Sensibility, specificity and accuracy of nCLE were calculated.

**Results** 59 patients were enrolled in the study, 18 male, 41 female. Final diagnosis were derived from histopathological analysis where available (10 surgery, 2 cytology from FNA, 47 based on imaging and multidisciplinary team review). 3 patients were excluded from final diagnosis due to technical problems in imaging acquisition.

56 were included in the final analysis. Sens. spec. accuracy of nCLE were 80% (95% CI 65-90), 100% (95% CI 72-100) and 84% (95% CI 72-93) respectively. 6 (10%) adverse events occurred: 3 acute pancreatitis but none of them evolved to necrotizing pancreatitis; 2 intracystic self-limiting bleeding and 1 cyst infection.

**Conclusions** EUS-nCLE provides excellent performance rates compared to standard EUS-FNA for diagnosing indeterminate PCL

## OP156 DIAGNOSTIC PERFORMANCE OF ENDOSCOPIC ULTRASOUND THROUGH-THE-NEEDLE MICROFORCEPS BIOPSY (EUS-TTNB) OF PANCREATIC CYSTIC LESIONS: A SYSTEMATIC REVIEW WITH META-ANALYSIS

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DOI 10.1055/s-0040-1704175

**Aims** Endoscopic ultrasound through-the-needle biopsy (EUS-TTNB) is a useful tool for differential diagnosis among pancreatic cystic lesions (PCLs). Cystic fluid cytology (CFC) is recommended by guidelines, but its diagnostic accuracy is about 50%. The aim of this meta-analysis is to assess the clinical impact of EUS-TTNB in terms of diagnostic capacity and accuracy.

**Methods** Observational studies on EUS-TTNB were searched in MEDLINE and EMBASE, until May 2019. Data on feasibility, histological accuracy (HA), diagnostic yield (DY) and adverse events (AEs) were extracted and pooled. Diagnostic accuracy of EUS-TTNB for identification of mucinous PCLs was calculated using individual diagnostic data of patients underwent CFC and surgery.

**Results** Nine studies including 454 patients underwent EUS-TTNB met the inclusion criteria for the meta-analysis. Feasibility and HA of EUS-TTNB were respectively 98.5% (95% Confidence Interval [CI] 97.3% - 99.6%) and 86.7% (95% CI 80.1-93.4). DY was 69.5% (95% CI 59.2-79.7) for EUS-TTNB and 28.7% (95% CI 15.7-41.6) for CFC. Heterogeneity persisted significantly high in most of subgroup analyses. In the multivariate meta-regression cyst size was independently associated with higher DY. Sensitivity and specificity for mucinous PCLs were 88.6 and 94.7% for EUS-TTNB, and 40 and 100% for CFC. AEs rate was 8.6% (95% CI 4.0-13.1).

**Conclusions** This meta-analysis shows that EUS-TTNB is a feasible technique that allows to obtain a high rate of adequate specimens for histology; in about two thirds of patients a specific histotype diagnosis could be assessed. The number of adverse events is slightly higher respect to standard EUS-FNA, but complications are very rarely severe.

## OP157 PROGRESSION OF CYSTIC PANCREATIC NEOPLASMS - A UNI-CENTER COHORT STUDY OVER 6 YEARS

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**DOI** 10.1055/s-0040-1704176

**Aims** The purpose of this study was to evaluate the malignant potential of pancreatic cystic lesions and the precision of endosonographic diagnoses including the early detection of cysts with malignant potential.

**Methods** All patients referred between January 2012 and December 2018 to our tertiary referral center for EUS of pancreatic cystic lesions were included in this retrospective analysis. EUS was performed by 3 experienced gastroenterologists with Hitachi Preirus and Pentax echoendoscopes.

**Results** 456 patients with pancreatic cystic lesions were included in a database. 224 patients had cystic pancreatic neoplasms, the median age was 69.5 years. EUS diagnosis was 139 BD-IPMN, 16 MD-IPMN, 46 serous cystic neoplasia and 6 mucinous cystic neoplasia. Progression of size was rare. In 52 BD-IPMN with more than one examination only 6 lesions showed increase of  $\geq 2$ mm. In 29 cases, a histopathological diagnosis was available after surgical resection. 27.6% of the patients who had surgical resection had high-grade dysplasia or cancer. The pre-operative EUS diagnosis was correct in 27.6%. The correct preoperative differentiation between mucinous and non-mucinous lesions was possible in 73.3%. The European Consensus Guidelines' list of risk criteria showed to be a very sensitive (100%) and specific (93.5%) predictor of malignancy. No cystic lesion without an indication for resection showed malignant transformation during the mean observation period of 15.5 months (range 1 - 62).

**Conclusions** Pancreatic cystic lesions showed a very low rate of progression or malignant transformation during the first 5 years of observation. EUS alone shows a moderate accuracy to differentiate between serous and mucinous cystic neoplasia. Our results support surveillance for patients who are fit for surgery following the European Consensus Guidelines.

## OP158 INTEROBSERVER AGREEMENT OF ENDOSCOPIC ULTRASOUND ASSESSMENT AND MANAGEMENT OF PANCREATIC FLUID COLLECTIONS (PFCs) - AN INTERNATIONAL STUDY

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**DOI** 10.1055/s-0040-1704177

**Aims** Pancreatic and peripancreatic fluid collections (PFCs) are amongst the most ominous complications of severe acute pancreatitis and in this field Endoscopic Ultrasound (EUS) is emerging as an accurate tool for diagnostic and

therapeutic approach. EUS-guided drainage is a common procedure in advanced endoscopic centres but guidelines or specific recommendation are still lacking.

**Methods** Twelve experts in interventional EUS from 9 European and US tertiary endoscopy centers were invited to evaluate 50 EUS videos of pancreatic fluid collections and were asked to express their opinion on specific details of size, type, morphological signs and therapeutic decision. The primary endpoint was to assess the Interobserver agreement (IA) among endosonographers for EUS diagnosis and classification of PFCs. The secondary endpoint was to evaluate their agreement about endoscopic and non-endoscopic drainage of fluid collections

**Results** A moderate agreement was found in terms of type of lesion (K= 0.49) while a fair or poor agreement was stated for the presence of infection (K 0.2079), the evaluation of the wall of the PFC, the gut wall visibility, the distance from the PFC and the presence of interposed vessels (k= 0.1372, k =0.0375 and k=0.0557, K = 0.2308 respectively). Wirsung visibility and its communication showed poor agreement (K= 0.0579 and K= 0.1271, respectively). A fair agreement was also stated in terms of treatment (k =0.3976).

**Conclusions** The diagnosis and management of pancreatic fluid collections by EUS-procedures are still based on single-center experience and there is no a good agreement between expert endosonographers. Further studies, guidelines and consensus are needed to establish a common evidence-based management in the Western endoscopic centers.

## OP159V MORAY THROUGH-THE-NEEDLE MICRO-FORCEPS COULD UNMASK THE REAL NATURE OF A PANCREATIC CYST

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**DOI** 10.1055/s-0040-1704178

Prompt identification of cyst with stigmata of malignant transformation, could be the key for pancreatic cancer prevention. As well, detection of benign features could stop worthless follow-up and reassure patients.

We report the case of a 63-yo man, in follow-up for a pancreatic cyst since 2002, suspected for branch-duct IPMN, without worrisome features. Due to an increase in size, he underwent an EUS-FNA, confirming an unilocular pancreatic tail cyst, with mild wall thickening. During EUS, we evaluated CH-EUS enhancement and sampled the cyst wall with a through-the-needle micro-forceps, with the surprising histological result of a rare cystic neuroendocrine tumor.

## OP160V ENDOSCOPIC ULTRASOUND DIAGNOSIS OF A MAIN DUCT INTRADUCTAL PAPILLARY MUCINOUS NEOPLASM IN A TYPE 1 PANCREAS DIVISUM

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**DOI** 10.1055/s-0040-1704179

To characterize unspecific and incidental CT findings.

A dilated main pancreatic duct (MPD) was described in a CT. A linear endoscopic ultrasound (EUS) was performed.

At the body and tail, a dilated MPD with intraductal content was observed. At the head, a filiform MPD was initially seen with an abnormal Santorini duct, raising suspicion of a MD intraductal papillary mucinous neoplasm (IPMN) in a pancreas divisum. This was confirmed after observing the "fish mouth" sign at the minor papilla.

EUS allows IPMN diagnosis and characterization. The "fish mouth" sign may only be present at the minor papilla in pancreas divisum.

Thursday, April 23, 2020

16:30 – 18:00

Removing doubt from the red-out:  
Upper GI hemostasis

Liffey Meeting Room 1

### OP161 PRE-ENDOSCOPIC INTRAVENOUS PROTON PUMP INHIBITORS HAVE NO IMPACT ON CLINICAL OUTCOMES IN ACUTE UPPER GASTROINTESTINAL BLEEDING: A PROSPECTIVE MULTICENTER ITALIAN COHORT STUDY

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**DOI** 10.1055/s-0040-1704180

**Aims** Incidence of hospital admission for acute upper gastrointestinal bleeding (AUGIB) has decreased by 20% during the past 10 years, due to the changing epidemiology. The use of pre-endoscopic intravenous proton pump inhibitors (PPIs), currently recommended, is debated.

**Aim** to verify if the use of pre-endoscopic PPIs improves the death and outcomes rate in these patients

**Methods** Data on consecutive patients admitted for AUGIB were collected from January 2014 to December 2015, in 50 participating centers in Italy. Bleeding-related death was defined as any event occurring within 30 days from admission for non-variceal bleeders (NVB) and within 42 days for variceal bleeds (VB). Clinical outcomes measured were: 1. hospital stay (mean duration of in hospital admission); 2. therapeutic endoscopy rate (any hemostatic procedure performed during the first endoscopy); 3. rebleeding rate (occurred after a successful hemostatic endoscopic treatment) 4. Surgery rate (any surgical procedure occurred after endoscopy).

**Results** 3.324 patients were included [560 VB (16.9%) and 2.764 (83.1%) NVB]. Overall, 68.7% patients received PPIs. Comorbidities were present in 79.8% of the patients with NVB and 96.9% in VB. Among the VB, the use of PPIs did not affect mortality ( $p < 0.21$ ), nor the rebleeding rate ( $p = .92$ ). Among the NVB, 1910 received a PPI, while 854 did not. The use of PPIs did not affect mortality (YPPI 6.0% vs. NPPI 5.1%,  $p < 0.36$ ) or the measured outcomes (rebleeding rate  $p < 0.97$ ; surgery rate  $p < 0.24$ ; therapeutic endoscopy rate  $p < 0.04$ ). Moreover, in a subgroup of patients [1456 (43.8%)] identified after endoscopy as ulcer bleeders, the administration of PPIs before endoscopy did not affect any clinical outcome ( $p = ns$  for all).

**Conclusions** A large proportion of patients admitted for AUGIB received PPIs before endoscopy. In our cohort of patients the administration of PPIs before endoscopy did not improve the death rate nor the other outcomes considered.

### OP162 SINGLE OTSC CLIP IS SUPERIOR COMPARED TO STANDARD THERAPY FOR ACUTE UPPER GI BLEEDING IN LARGE UK SERIES- IS IT TIME TO CHANGE?

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**DOI** 10.1055/s-0040-1704181

**Aims** To determine whether the use of the OTSC was associated with lower upper GI haemorrhage rebleeding rates and mortality in the UK.

**Methods** Consecutive episodes of upper GI haemorrhage treated with the OTSC were identified from a prospective database in a UK tertiary centre over a 3-year period. Treatment with OTSC was opted for patients with high risk features or failed conventional endoscopic therapy. Over the same time period, all patients with upper GI haemorrhage treated with standard endoscopic therapy were retrospectively identified, and a propensity score-matched cohort was generated. Patient demographics, 7 day re-bleeding rate, 30 day re-bleeding

rate and 30 day mortality rates were compared. T-test and Pearson's Chi-square test were used as appropriate.

**Results** 617 episodes of upper GI haemorrhage were identified requiring endoscopic intervention. Of these 71 high risk lesions were treated with the OTSC and 89 high risk lesions with standard endoscopic therapy in the matched control group. The sites of lesions treated with the OTSC included oesophagus (10%), stomach (22%) and duodenum (68%). The lesions were described as forest 1a-18%, 1b-33%, 2a-32%, 2b-17%. Pathology included ulcers (78.9%), Mallory-Weiss tears (9.6%) Dieulafoy (7.0%) post-angiographic coil ulcer (1.4%) post-EMR (1.4%) anastomotic bleed (1.4%).

Compared to the control group, the OTSC group had lower 7-day re-bleeding rate (19.3% vs 2.8%,  $p < 0.01$ ) and a lower 30-day re-bleeding rate (25.0% vs 7.0%,  $p < 0.01$ ). There was a trend toward reduction in all-cause mortality in the OTSC group (14.8% vs 8.5%,  $p = 0.20$ ) but a significantly lower haemorrhage related mortality in the OTSC group (4.5% vs 1.4%,  $p = 0.02$ ).

**Conclusions** This is one of the largest series of patients treated with OTSC for upper GI haemorrhage, demonstrating a significant reduction in both early and late rebleeding in addition to haemorrhage related mortality and thus needs to part of the treatment armamentarium.

### OP163 THE SOONER, THE BETTER: EARLY ENDOSCOPY IS ASSOCIATED WITH LOWER 30-DAY MORTALITY IN LOW-RISK NON-VARICEAL UPPER GASTROINTESTINAL BLEEDING PATIENTS

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**DOI** 10.1055/s-0040-1704182

**Aims** Although upper gastrointestinal bleeding (UGIB) management has improved substantially during the past decades, there is still much controversy regarding the optimal timing to perform endoscopy. Recent guidelines suggest performing early endoscopy within 24 hours of non-variceal UGIB (NVUGIB) presentation, although its impact in different risk patients remains unclear.

**Aim** To evaluate the impact of performing endoscopy within 24 hours on NVUGIB outcomes.

**Methods** Retrospective unicentric cohort study including consecutive patients undergoing upper endoscopy for suspected NVUGIB over 4 years. Demographic, clinical, biochemical, endoscopic and outcome data were collected. Lower-risk was defined as a Glasgow-Blatchford score (GBS) of  $< 12$  and high risk was defined as a GBS of  $\geq 12$ .

**Results** Two hundred and ninety-eight patients with suspected NVUGIB were included, 55% were high-risk patients. Endoscopy was performed within 24 hours in 62.1% of patients. In lower-risk patients, performing endoscopy within 24 hours was associated with higher need of endoscopic treatment ( $p = 0.003$ ); lower 30-day mortality ( $p = 0.03$ ) and lower need for transfusion ( $p = 0.03$ ). Lower-risk patients that performed endoscopy later than 24 hours were significantly older ( $70.8 \pm 15.2$  vs  $63.5 \pm 16.7$ ;  $p = 0.01$ ), with more comorbidities (Charlson Comorbidity Index:  $4.0 \pm 2.1$  vs  $3.1 \pm 2.5$ ;  $p = 0.02$ ), lower hemoglobin levels ( $10.1 \pm 3.1$  vs  $11.3 \pm 2.8$ ;  $p = 0.03$ ), and with higher weekend/holiday presentation (27 vs 0;  $p < 0.001$ ). In high-risk patients, there were no statistically significant differences in NVUGIB outcomes in performing endoscopy within 24 hours.

**Conclusions** Endoscopy within 24 hours of presentation was associated with lower need for transfusion, higher need for endoscopic treatment and lower 30-day mortality in lower-risk but not high-risk NVUGIB patients. Our study suggests that performing endoscopy within the first 24 hours of presentation may have a positive impact in NVUGIB outcomes in lower-risk patients, particularly in older ones with more comorbidities and lower hemoglobin levels.

## OP164 REAL LIFE EXPERIENCE WITH THE USE OF A HEMOSTATIC POWDER IN 152 PATIENTS UNDERGOING URGENT ENDOSCOPY FOR GASTROINTESTINAL BLEEDING

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DOI 10.1055/s-0040-1704183

**Aims** In the recent years, topical hemostatic powders have been used for the management of upper gastrointestinal bleeding (UGIB). The aim of this study was to report on the use of an hemostatic powder (TC-325) in a non-working hour context by an on-call endoscopist during urgent endoscopic procedures.

**Methods** In this retrospective multicenter cohort study, consecutive patients having undergone an urgent endoscopy with the use of TC-325 from November 2015 to December 2018 in the Paris region were included. We collected clinical and biological data, as well as endoscopic findings. The outcomes such as the recurrence rate, repeat endoscopy and hemostatic treatment need, complications and survival were collected as well.

**Results** A total of 152 patients (mean 65 year-old, 70.4% male) were included. Amongst the 31 endoscopists, 11 were "more experienced", and performed 48% of the endoscopies. The most common causes of bleeding were peptic ulcers (52.0%), malignancy (22.4%) and esophagitis (12.5%). Most bleedings originated from the upper GI tract (95.0%). TC-325 was used as a salvage therapy in 60.8% of cases. Other hemostatic techniques were used in 52.9% of cases. Immediate bleeding cessation was noted in 79.0% of cases, recurrence in 39.9% of cases, and 26.4% of patients benefited from a repeat endoscopic hemostasis treatment. A total of 34 (23.0%) patients required a non-endoscopic treatment. At day 30, the survival rate was 71.6%. Only one complication was reported (perforation).

**Conclusions** Hemostatic powder application by an on-call endoscopist during non-working hours is feasible, with satisfactory outcomes given the severity of the illness of these patients.

## OP165 TIME TRENDS IN ACUTE UPPER GASTROINTESTINAL BLEEDING: IS SOMETHING CHANGED IN PAST 10 YEARS?

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DOI 10.1055/s-0040-1704184

**Aims** To evaluate changes in clinico-epidemiologic characteristics of patients who presented with acute upper gastrointestinal bleeding (AUGIB) during the last 10 years in Serbia

**Methods** Data from 126 patients admitted with AUGIB in our center from January 1. to December 31., 2018. were compared with retrospectively collected data from 124 patients admitted with AUGIB in 2013. year and with 121 patients from 2008. year.

**Results** Mean age of patients increased from 63.84±14.1 years to 65.71±14.27 and 68.92±12.77, and the number of patient's comorbidity, too. The percentage of NSAID's and antiplatelets use remained stable (63.63% vs.

68.55% vs. 65.87%), whereas the use of oral anticoagulants drugs increased significantly during this period (from 6.44%, across 12.1% in 2013. to 16.67%,  $P=0.041$ ). In 2008. year 31.4% of AUGIB was from duodenal ulcer following gastric ulcer (26.44%), variceal bleeding (15.7%), gastric erosions (12.4%), duodenal erosions (8.26%), gastric and oesophageal cancers (7.44%) and other reasons in 5.79%. Main reason for AUGIB in 2013. year was also duodenal ulcer (25%), duodenal erosions are second with 19.35% whilst gastric ulcer (15.32%), gastric erosions (10.48%), gastric and oesophageal cancers (12.9%) and variceal bleeding (6.45%) are coming after. In the year 2018. most frequent reason for AUGIB were duodenal erosions with 24.6%, following duodenal ulcers 23.42%, gastric ulcers (15.87%), variceal bleeding (11.11%), gastric erosions (8.73%), gastric and oesophageal cancers (8.73%) and other reasons with 16.67%. During the period of these 10 years duodenal erosions increased significantly ( $X^2=11.84$ ,  $p=0.0027$ ,  $p<0.05$ ) while gastric ulcer decreased significantly ( $X^2=6.21$ ,  $p=0.044$ ,  $p<0.05$ ). Overall mortality was 14.05% in 2008., 9.68% in 2013. and 10.32% in the year 2018.

**Conclusions** Patients with AUGIB are older with more comorbidities, their mortality remains unchanged. Main risk factors for AUGIB are NSAID's use with clear trend of decreasing of peptic ulcer disease, mainly gastric ulcers like a reason of haemorrhage.

## OP166 THE EVOLUTION OF GASTROESOPHAGEAL VARICES IN NON CIRRHOTIC PORTAL HYPERTENSION BY INFRA-HEPATIC BLOCK

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DOI 10.1055/s-0040-1704185

**Aims** The aim of this study is to specify the evolution of oesogastric varices and thus haemorrhagic recurrence risk in patients with portal hypertension (PHT) by portal vein thrombosis (PVT).

**Methods** It is a retrospective analytical descriptive study from January 1991 to May 2019, including 192 patients followed for PHT due to PVT without liver disease.

**Results** The mean age of patients was 40,08±16 years. The sex ratio M/F was 0,45. In all patients, upper GI endoscopy was performed. Hypertensive gastropathy was found in 27.9%, grade I oesophageal varices(OV) in 7,8%, II in 26,4%, III in 48,8% and gastric varices in 22,5% . These varices were the site of red signs in 27,1%. All patients had abdominal doppler ultrasonography showing a PVT in 42,6% . A portal cavernoma was found in 57.4%of whom 68% had a portal biliopathy on MRCP performed systematically. The ligation of OV (OR=0.28,  $p=0.03$  CI=0.084-0.92) was made in 41.1%, resulting in eradication of OV (OR=0.73, $p=0.01$ CI=0.25-0.92) in 99%. Sclerotherapy was done in 12% of cases, resulting in eradication of OV in 90% of cases. 42.6% of the patients had a PVT and only 14% were put on anticoagulant treatment. On the evolutionary level, in case of PVT, no haemorrhagic recurrence was noted in 85.2%, and in case of portal cavernoma no recurrence was noted in 79.7%. PVT was reduced in 70% in anticoagulated patients and stabilized in 30%, reduced in 4% in non-anticoagulated and stabilized in 96%. With a mean follow-up of 9 years, no haemorrhagic recurrence was noted in 80% of cases, rebleeding was noted in 17% and death in 3% of cases.

**Conclusions** In multivariate analysis, ligation and eradication of OV are the 2 statistically significant protective factors against bleeding recurrence. The presence of thrombosis does not interfere with the progression of OV in patients with PHT infra-hepatic block.

## OP167 RADIOFREQUENCY ABLATION USING BARRX FOR THE ENDOSCOPIC TREATMENT OF GASTRIC ANTRAL VASCULAR ECTASIA (GAVE) AND RADIATION PROCTITIS: A SINGLE CENTRE EXPERIENCE

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DOI 10.1055/s-0040-1704186

**Aims** Radiofrequency ablation (RFA) is a new endoscopic technique recently introduced to treat gastric antral vascular ectasia (GAVE) and chronic radiation proctitis. Data from literature are limited for samples, treatment schedule and costs. We here assess safety and efficacy of RFA in these patients.

**Methods** From January 2016 to November 2018 all patients with GAVE and radiation proctitis were enrolled at our Endoscopic Unit: clinical and endoscopic data were collected.

**Results** 44 patients (mean age 74 years) were treated with RFA by the HALO system (38 with transfusion dependent GAVE (28/38 cirrhotics, 22/38 refractory to argon plasma coagulation) and 6 with chronic radiation proctitis) for a total of 74 procedures. The technique is easy to perform after adequate training and very well tolerated. Side effects occurred in 3.1 % of treated cases. Overall, 93% (41/44) of the patients had cessation of bleeding after 1-4 treatments (mean 1.7, follow up 6-27 months), performed every 8 weeks until complete endoscopic eradication. Mean number of red blood cells transfusion significantly decreased (1.7 vs 19.1 units,  $p < 0.0001$ ) with significant increase of hemoglobin level (11.1 vs 7.3 g/dl,  $p > 0.0001$ ). The treatment was cost-effective (mean 574.036 euros before vs 25.078 euros post treatment).

**Conclusions** In our experience RFA ablation is a safe and effective endoscopic tool for the treatment of GAVE and radiation proctitis, and it should become the first-line treatment in this setting.

## OP168V EMERGENCY ENDOSCOPIC TREATMENT OF A MASSIVE UPPER GASTROINTESTINAL BLEEDING OF VERY UNCOMMON ORIGIN

**Authors** Sferazza S<sup>1</sup>, Maida M<sup>2</sup>, Vieceli F<sup>1</sup>, de Pretis G<sup>1</sup>, Lisotti A<sup>3</sup>, Fusaroli P<sup>3</sup>

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DOI 10.1055/s-0040-1704187

A 70-year-old man was admitted to our unit in March 2018 for hematemesis with severe anemia and hypovolemic shock.

His medical history included quadriplegia due to horse-riding accident and absolute dysphagia treated with enteral feeding through percutaneous endoscopic gastrostomy.

Computed tomography angiogram of the chest showed an aorto-esophageal fistula in the presence of a double aortic arch system. Following surgical consultation, the placement of a vascular endoprosthesis was excluded due to the presence of this congenital anatomical variant. A second EGD was performed with placement of a fully covered metal stent with full resolution of bleeding and hemodynamic stabilization.

## OP169V DEALING WITH A MISS DEPLOYED OESOPHAGEAL STENT PLACED FOR VARICEAL BLEEDING

**Authors** Küttner-Magalhães R<sup>1</sup>, Rodrigues-Pinto E<sup>2</sup>, Lemos-Rocha M<sup>1</sup>, Dias E<sup>2</sup>, Pinto C<sup>1</sup>, Silva J<sup>1</sup>, Ferreira JM<sup>1</sup>, Pedoto I<sup>1</sup>

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DOI 10.1055/s-0040-1704188

A 54-year-old male, with Child-Pugh C cirrhosis underwent band ligation of large oesophageal varices due to beta blockers intolerance. Four ligation-induced ulcer bleeding episodes occurred and a fully covered SX-Ella Danis metal stent was placed. On endoscopic evaluation, stent distal end was proximal to oesophago-gastric junction with major bleeding occurring in the distal, non-covered oesophagus. After sclerosant injection, bleeding flow diminished. The retrieval stent loop was grasped, allowing slight constriction and distal placement of the stent, with adequate coverage of distal oesophagus and bleeding control. Stent was later removed after transjugular intrahepatic portosystemic shunt.

Thursday, April 23, 2020

16:30 – 18:00

Unlock en-bloc 2

Wicklow Hall 1

## OP170 POLYSACCHARIDE HEMOSTATIC POWDER TO PREVENT BLEEDING AFTER ENDOSCOPIC SUBMUCOSAL DISSECTION: A PROSPECTIVE MULTICENTER RANDOMIZED CONTROLLED TRIAL

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DOI 10.1055/s-0040-1704189

**Aims** Endoscopists have a chance to face an increasing number of patients with high risk of post-ESD bleeding (PEB) due to antithrombotic agents. In order to verify the efficacy for prevention method of PEB, we designed the first randomized controlled trial (RCT) on the efficacy of the hemostatic powder (HP) for the prevention of PEB.

**Methods** Patients who underwent ESD for gastric neoplasms with high risk of PEB were enrolled in this multicenter, prospective RCT. High risk patients were defined as patients with gastric neoplasms which resected specimen size was expected to be more than 40 mm and patients who took antithrombotic agents regularly. Patients were randomly assigned to one of two groups (HP group or control group). After ESD, the patients in the HP group was applied hemostatic powder on the ESD ulcer base.

**Results** Between May 2017 to September 2018, 143 patients were enrolled (73 in HP group and 70 in control group). The resected size of lesion was 48.9 mm in HP group and 46.9 mm in control group, respectively. En-bloc resection rate of all ESD was 99.3%. The complete resection and curative resection rate were 93.7% and 90.9%, respectively. PEB rate was 5% (4/73) in HP group and 7.1% (5/70) in control group, respectively ( $P = 0.742$ ). Endoscopic hemostasis was achieved in all PEB cases, and the proportion of high-risk bleeding lesions (Forrest Ia, Ib or IIa) was 25.0% in HP group and 40.0% in control group. All PEB in the HP group occurred in late-phase. PEB rate in large resection cases (over 40mm) was 2.9% (2/69) in HP group and 7.2% (5/69) in control group ( $p=0.441$ ).

**Conclusions** Although there is no significant difference of PEB between HP and control groups, there is a tendency to reduce the PEB ratio in large resected lesion and early phase in HP group.

## OP171 SSMH SCORE (SIZE, MANEUVERABILITY, SITE, HISTORY) A NEW SCORE TO PREDICT EFFICACY AND COMPLICATIONS OF COLORECTAL ENDOSCOPIC SUBMUCOSAL DISSECTION (ESD)

**Authors** Jacques J<sup>1</sup>, Legros R<sup>2</sup>, Albouys J<sup>2</sup>, Lepetit H<sup>2</sup>, Dahan M<sup>3</sup>, Sautereau D<sup>3</sup>, Rivory J<sup>4</sup>, Pioche M<sup>4</sup>

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**DOI** 10.1055/s-0040-1704190

**Aims** ESD is the gold standard for the treatment of large colorectal superficial lesions. The objective of this study was to identify pre-procedural predictive factors of R0 resection and perforation and try to design a predictive score.

**Methods** Prospective cohort study including all cases of ESD from a French referent center between 12/2012 and 09/2019. Primary endpoint was to identify predictive factors of R0 Resection, secondary endpoints was validation of a new score that could predict R0 and non R0 resection.

**Results** 466 lesions were included, 198 (42.4%) rectal lesions and 268 (57.6%) colonic.

The en bloc, R0 and curative resection rates were 94.8%, 80.2% and 75.7%, respectively.

In multivariate analysis: size of more than 8 cm (OR: 0.335, p = 0.034), poor endoscopic maneuverability (OR: 0.285, p = 0.001), localization anal verge, sigmoid or right angle (OR 0.386; p = 0.001), were significant pre-procedure risk factors for non-R0 resection.

A new score called SSMH (Size-Maneuverability-Site-History) was created to predict through pre-procedure criteria the effectiveness of colorectal ESD.

This score is divided into 3 groups 1 (< 4 points); 2 (> = 4 and < 8 points); 3 (> = 8 points) of increasing difficulty.

Applied to our prospective cohort 72 (15.9%) patients were classified as SSMH 1, 196 SSMH 2 (43.3%) and 185 SSMH 3 (40.8%).

There was a significant difference between the 3 groups:

- R0 resection rate: SSMH 1: 90.3%; SSMH 2: 84.6%; SSMH 3: 74.6% p = 0.0057

- Perforation rate: SSMH 1: 4.1%; SSMH 2: 5.6%; SSMH 3: 12.4% p=0.02

**Conclusions** SSMH score is able to predict results of colorectal ESD based on pre-procedural data. This new score should to help physicians to target their lesions according to their expertise. Independent validation cohort is needed.

## OP172 COLORECTAL (CR) ENDOSCOPIC SUBMUCOSAL DISSECTION (ESD) IN WESTERN COUNTRIES WHEN HISTOLOGY SHOWS LOW GRADE DYSPLASIA: IS THE RISK ACCEPTABLE?

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**DOI** 10.1055/s-0040-1704191

**Aims** The ESGE has recently published a curriculum for ESD training in Europe. However, there are no recommendations concerning the maximum acceptable percentage of lesions with histology showing Vienna category  $\leq 3$ . This quality measure seems relevant because colonic perforation after EMR of LSLs occurs in 1-2% cases and related surgery is seldom needed (0.1%).

**Methods** Consecutive patients were enrolled in a prospective multicentre Spanish CR-ESD registry since January 2016 to August 2019.

**Results** We recruited 896 CR neoplasms submitted for ESD and performed by members of the ESD interest group of the GSEED Endoscopic Resection Working Group. At least 1 CR-ESD was performed in 25 hospitals. Seven centres met the proposed standard of the ESGE of performing > 25 ESD/year. The histology showed a Vienna category (VC)  $\leq 3$  in 505 cases (56.3%). These specimens were significantly smaller than those with VC  $\geq 4$  (median: 35 mm vs. 40 mm; p < 0.0001). Severe fibrosis was less common in VC  $\leq 3$  (20.2% vs. 26%; p = 0.04). In lesions VC  $\leq 3$ , the percentages of LSLs-G homogeneous type (14.3% vs 9%; p = 0.01) and NG FE type were higher (38.6% vs 16.4%; p < 0.0001). The intraprocedural perforation rate (15.4 vs 14.1%; p=0.5) and the delayed perforation rates were similar between both groups (2.2% vs. 2.6%; p = 0.7). There were no differences in the need for surgery because of perforation in both groups (2% vs. 2%; p = 0.94). When perforation rates and need for surgery in hospitals with high case load (>25 ESD/year) were compared with the remaining, the differences were not statistically significant.

**Conclusions** In our multicentre CR-ESD series, >50% of the cases showed VC  $\leq 3$  and the intraprocedural perforation rate was at least 7 times higher than those of EMR. Additionally, the need for surgery was 20-fold.

## OP173 PREVALENCE OF INTRAPROCEDURAL AND DELAYED PERFORATION IN COLORECTAL ENDOSCOPIC SUBMUCOSAL DISSECTION. RESULTS OF A MULTICENTER SERIES

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**DOI** 10.1055/s-0040-1704192

**Aims** To describe the prevalence of IP and DP and compare the consequences of both events.

Endoscopic perforation continues to be the most concerning complication associated with Colorectal Endoscopic Submucosal Dissection (CR-ESD). There are two main types: intraprocedural perforation (IP), diagnosed along or just after CR-ESD; delayed perforation (DP), presenting 8-72 hours after the CR-ESD.

► **Tab. 1** Perforation in CR-ESD

	Prevalence (%)	Extra Hospital Stay, days, Md (IQR)	Surgical treatment required (%)	Mortality
IP	77 (27.8)	1 (5)	6 (7.8)	0
DP	4 (1.4)	7.5 (7.5)	3 (75)	0
P value	<0.001	0.14	0.07	

**Methods** Data were based on a prospective registry of all the CR-ESD procedures performed by the same endoscopist (AH) or under his close supervision in three hospitals in Madrid. The first 50 cases were excluded to discard the effect of the learning curve.

**Results** Between January 2012 and July 2019, 277 CR-ESD cases were performed and analyzed. The prevalence of IP and DP was 27.8% and 1.4%, respectively (table 1). Endoscopic treatment was successful in 92% of the IP cases, with a median of 1 day of extra hospitalization. Only 6 cases of IP required surgical treatment. DP was mostly diagnosed within 24 hours after ESD, with 75% of the cases undergoing surgical treatment and a mean 7.5 days of extended hospital stay.

**Conclusions** IP in CR-ESD might be high in Western centers, but endoscopic treatment seems successful in most of the cases, with a short addition of hospital stay. Although DP rate in CR-ESD is very low, it is associated with a high probability of surgical management and longer hospital stay.

### OP174 CLINICAL OUTCOMES OF ENDOSCOPIC SUBMUCOSAL DISSECTION FOR RECTAL TUMORS EXTENDING TO THE DENTATE LINE

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DOI 10.1055/s-0040-1704193

**Aims** Endoscopic submucosal dissection (ESD) is a well-established and widely accepted resection technique for colorectal lesions. However, the endoscopic excision of lesions extending to the dentate line involves specific difficulties related to the particular anatomical features of the anorectum. As a result, current guidelines give no recommendations on the ideal treatment strategy for these lesions. This study aimed to evaluate the efficacy and safety of ESD for the treatment of rectal tumor extending to the dentate line.

**Methods** All consecutive rectal lesions submitted to ESD in our center, between January 2013 and October 2019, were enrolled. Time of procedure, rates of *en bloc* resection, R0 resection and curative resection, complications and tumor recurrence were analyzed, and a comparative analysis was carried out between lesions involving the dentate line (DL) and not involving the dentate line (NDL).

**Results** 149 rectal lesions were included: 39 in the DL group (26%) and 110 in the NDL group (74%). Median procedure time was comparable between groups (DL 78 vs NDL 75 min,  $p=0.959$ ). No significant difference among the groups was found in the *en bloc* resection rate (DL 97% vs NDL 93%,  $p=0.447$ ), R0 resection rate (DL 69% vs NDL 79%,  $p=0.202$ ) or curative resection rate (DL 64% vs NDL 77%,  $p=0.139$ ). Incidence of complications was similar (DL 10% vs NDL 11%,  $p=1$ ) and none required surgery. During follow-up, recurrence was observed in 3 patients (2 in the DL group and 1 in the NDL group) and was treated endoscopically.

**Conclusions** ESD is an effective and safe treatment for rectal tumor extending to the dentate line, with similar outcomes compared to ESD in other rectal

areas, when performed by experienced endoscopists. Therefore, it should be considered in the management of these lesions.

### OP175V THE OPENING OF THE ILEOCAECAL VALVE THANKS TO COUNTERTRACTION USING A DOUBLE CLIP AND RUBBER BAND FACILITATES R0 EN BLOC RESECTION OF ILEOCAECAL LSTs

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DOI 10.1055/s-0040-1704194

We developed a new technique to better expose ileocaecal valve (ICV) and facilitate R0 *en bloc* resection of ileocaecal LSTs with adenomatous extension in the distal ileum.

Two cases of ESD are presented here. Visualization of ileal adenoma margins were difficult. We set up two systems of countertraction by double clip and rubber band on the lips of the ICV to open it and make it gaping.

This allowed us to clearly delimit the lesions and achieve R0 *en bloc* resection in both case.

This technique seems useful for facilitating R0 *en bloc* resection of LSTs with ileal extension.

### OP176V SELF-COMPLETION ENDOSCOPIC SUBMUCOSAL DISSECTION FOR COLORECTAL NEOPLASMS

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DOI 10.1055/s-0040-1704195

We invented a self-completion endoscopic submucosal dissection (SESD) using a novel needle-type endo-knife, Endosaber, which can perform cutting, coagulation and injection by itself. The merit of this method is to eliminate the need for assistant or use of additional devices, such as an injection needle and hemostatic forceps. We present a case of successful SESD for 35 mm lateral spreading tumor at the rectum. SESD was completed and *En-bloc* resection was achieved without any complication. SESD allows a simple and cost-effective ESD procedure to remove colorectal neoplasms.

### OP177V ESD INSIDE A COLON DIVERTICULUM OF THE CECUM, USING THE CLIP AND BAND TECHNIQUE, THE SALINE IMMERSION TECHNIQUE AND THE POCKET CREATION METHOD

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DOI 10.1055/s-0040-1704196

**Aims** Presentation of a case of endoscopic submucosal dissection (ESD) of a polyp at the cecum located inside a diverticulum.

**Methods** Several techniques were used including the clip and band countertraction, the pocket creation method and the under saline immersion technique.

**Results** The lesion was successfully removed without any adverse events.

**Conclusion** ESD in the setting of diverticulum is feasible by means of internal countertraction, tunneling and under saline dissection.

## OP178 INFLUENCE OF INDIVIDUAL PROTON PUMP INHIBITORS ON CLINICAL OUTCOMES IN CORONARY ARTERY DISEASE PATIENTS RECEIVING CLOPIDOGREL: A SYSTEMATIC REVIEW AND META-ANALYSIS

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DOI 10.1055/s-0040-1704197

**Aims** We aimed to determine efficacy and safety of clopidogrel only vs. clopidogrel added PPIs in the treatment of patients with percutaneous coronary intervention.

**Methods** A systematic search of MEDLINE, EMBASE, and Cochrane Library was conducted for studies recording the occurrence of MACEs in patients with exposure to concomitant use of clopidogrel and individual PPIs up to October 2019. Adjusted ORs or HRs for MACEs were combined using a random-effects model.

**Results** We identified ten studies comprising 75689 patients. The adjusted ORs or HRs for the composite of cardiovascular or all-cause death, myocardial infarction, and stroke were reported in 2 RCTs, 2 posthoc analyses of participants in RCTs, and 10 observational studies with data on individual PPIs. Random-effects meta-analyses of the 14 studies revealed an increased risk for MACEs for those taking omeprazole (HR 1.31; 95% CI 1.22-1.39), lansoprazole (HR 1.15; 95% CI 1.06-1.24), or pantoprazole (HR 1.37; 95% CI 1.28-1.45), or esomeprazole (HR 1.28; 95% CI 1.20-1.37) compared with patients on no PPI. This association was not significant for rabeprazole (HR 1.16; 95% CI 0.98-1.39). For further validation of the results, we repeated the entire analysis, excluding the study reporting adjusted HRs only. Moreover, there were no significant changes for the summary OR estimates for any of the individual PPIs or overall PPI effect estimates. The increased risk of MACEs was similar in 4 classes of PPIs (omeprazole, lansoprazole, esomeprazole, and pantoprazole), but rabeprazole (OR: 1.36; 95% CI: 0.93-1.98) was not. Sensitivity analyses for the coronary artery disease population (acute coronary syndrome versus mixed) and exclusion of a few studies due to heterogeneity of reported results didn't have a significant influence on the effect estimates for any PPIs.

**Conclusions** Although the results for rabeprazole were not robust, it was the only PPI that did not yield a significantly increased risk of MACEs.

## OP179 USEFULNESS OF NARROW-BAND IMAGING WITH NEAR-FOCUS MAGNIFICATION FOR DISCRIMINATING THE GASTRIC TUMOR MARGIN BEFORE ENDOSCOPIC RESECTION: A PROSPECTIVE RANDOMIZED MULTICENTER TRIAL

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DOI 10.1055/s-0040-1704198

**Aims** This prospective randomized multicenter study investigated the usefulness of near focus with narrow-band imaging (NF-NBI) for determining gastric tumor margins compared with indigo carmine chromoendoscopy (ICC) before endoscopic submucosal dissection (ESD).

**Methods** Patients with gastric adenoma or differentiated adenocarcinoma undergoing ESD were enrolled and randomly assigned to the NF-NBI or ICC group. A point on the margin on the most proximal side of the lesion was marked after inspection. Tumor delineation was considered accurate when the marking dots were located within 1 mm of the tumor margin under microscopic observation.

**Results** Finally, 200 patients in the NF-NBI group and 195 patients in the ICC group were included. No significant differences were observed in clinicopathological characteristics between the two groups. The distance from the marking dot to the margin of the tumor was significantly shorter in the NF-NBI group than in the ICC group ( $0.8 \pm 0.8$  mm vs.  $1.2 \pm 1.3$  mm,  $p < 0.01$ ). The delineation accuracy rate was 84.5% in the NF-NBI group and 81.0% in the ICC group ( $p = 0.44$ ). Although NF-NBI and other clinicopathological factors were not significantly associated with accurate delineation, carcinoma in the NF-NBI group was a significant predictive factor (odds ratio, 3.55, 95% confidence interval: 1.42-8.85,  $p = 0.03$ ).

**Conclusions** This prospective multicenter study showed that NF-NBI is not superior to ICC in terms of accurately delineating gastric tumors. However, the results suggest a potential benefit of NF-NBI for tumor delineation as an alternative to ICC.

## OP180 COLONOSCOPY QUALITY ASSURANCE IN AN ORGANIZED FIT-BASED COLORECTAL CANCER SCREENING PROGRAM

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DOI 10.1055/s-0040-1704199

**Aims** High quality colonoscopy is essential for optimal performance of a colorectal cancer (CRC) screening program. Therefore, endoscopists performing within the Dutch CRC screening program have to receive accreditation and fulfill minimum standards. In this study we assessed the quality of colonoscopies performed by the certified endoscopists.

**Methods** We obtained data for all first colonoscopies after a positive FIT (2014-2018). We determined quality indicators regarding completeness of visualization (cecal intubation rate [CIR], bowel preparation and withdrawal time [CWT]), removal rates (procedures with all polyps removed [PRR]), detection rates (cancer detection rate, adenoma detection rate [ADR], mean number of adenomas per procedure [MAP] and per positive procedure [MAP+]) and patient satisfaction (Gloucester comfort score). We evaluated minimum standards for CIR ( $\geq 95\%$ ), bowel preparation ( $\geq 90\%$  sufficient), CWT ( $\geq 90\% \geq 6$  minutes), PRR ( $\geq 90\%$ ) and ADR ( $\geq 30\%$ ) for each endoscopist who performed  $\geq 50$  colonoscopies. We assessed CWT in colonoscopies without detected lesions.

**Results** In total 431 endoscopists performed 237,092 first colonoscopies. In these colonoscopies, CIR was 97.0%, bowel preparation was sufficient in 97.5%, CWT was  $\geq 6$  minutes in 96.7% and PRR was 96.4%. CRC detection rate was 7.3%, ADR was 64.2%, MAP was 1.7 and MAP+ was 2.5. Patients experienced moderate or severe discomfort in 4.2% of colonoscopies. Of all endoscopists, 401/431 (93.0%) performed  $\geq 50$  colonoscopies. Minimum standards for CIR, bowel preparation, CWT and PRR were met by  $\geq 90\%$  of these endoscopists. All endoscopists achieved ADR  $\geq 30\%$ , moreover ADR was  $\geq 40\%$  for 399 endoscopists (99.5%) and  $\geq 50\%$  for 396 endoscopists (98.8%).

**Conclusions** Colonoscopies, performed after a positive FIT in the Dutch CRC screening program, are of high quality. All minimum standards are met by over 90% of endoscopists. ADR is much higher than the current minimum standard, so the minimum standard for ADR should be increased to  $\geq 40\%$  for optimal quality assurance in FIT-based CRC screening programs.

### OP181 DO ADVANCED COLONOSCOPISTS PERFORM BETTER?

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**DOI** 10.1055/s-0040-1704200

**Aims** Colonoscopy is the 'gold standard' investigation for assessment of the large bowel which detects and prevents colorectal cancer, as well as non-neoplastic conditions. The Joint Advisory Group (JAG) on GI Endoscopy suggests monitoring key performance indicators such as CIR and the ADR. There has been a drive to increase utilization of endoscopy units nationwide in the UK by offering extra endoscopy lists during weekends and evenings to deal with increasing service demands. Our aim was to investigate the quality of colonoscopies carried out during Saturdays and evening lists in our unit and compare against JAG standards of quality for colonoscopies.

**Methods** We retrospectively collected and analyzed demographical and procedure related data for non- screening colonoscopies performed between January

2016 and April 2018. Procedures were grouped according to the day of the week and timing of session (weekday, evening and Saturday). We also compared those performed by advanced colonoscopist and non-advanced colonoscopist. Advanced colonoscopist was defined as a BCSP colonoscopist or an advanced EMR colonoscopist.

**Results** There were a total of 17653 colonoscopies that were carried out, 56.8% (n=10025) were less than 70 years. Table 1 summarizes the differences between weekdays, evening and Saturdays' colonoscopies regarding the CIR and ADR. We noted that the KPIs (ADR, CIR) met the JAG standards. Advanced colonoscopists had better KPIs when compared to the non-advanced colonoscopists.

**Conclusions** JAG standards were maintained for colonoscopies done on weekdays, evening and Saturdays. Advanced colonoscopists had higher CIR and ADRs. Other units should explore the options of doing planned OOH colonoscopies to meet service demands.

### OP182 ASSOCIATION OF ASPECTS OF PROCEDURE WITH REPORTING OF FLAT AND PROTRUDED LESIONS: OBSERVATIONS FROM THE EUROPEAN COLONOSCOPY QUALITY INVESTIGATION QUESTIONNAIRE

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**DOI** 10.1055/s-0040-1704201

► **Tab. 1**

	Weekdays No. =14200	Evenings No.=1391	Saturdays No.=2062	P Values
Total	AD- R=28.9% CI- R=90.5%	AD- R=24.4% CI- R=90.7%	AD- R=24.2% CI- R=91.3%	AD- R=<0.001 CI- R=0.508
Advanced colonoscopists	No.=1728 AD- R=44.2% CI- R=94.5%	No.=135 AD- R=32.6% CIR=97%	No.=334 AD- R=34.7% CI- R=95.2%	AD- R=<0.001 CI- R=0.411
Non advanced colonoscopists	No. =12472 AD- R=26.7% CI- R=89.9%	No.=1256 AD- R=23.5% CI- R=90.0%	No.=1728 AD- R=22.1% CI- R=90.5%	ADR= <0.001 CIR= 0.741
Advanced vs. Non-advanced colonoscopist	P Value (ADR) = <0.001 P Value (CIR) = <0.001	P Value (ADR) = 0.019 P Value (CIR) = 0.007	P Value (ADR) = <0.001 P Value (CIR) = 0.005	

► **Tab. 1** Frequency of flat lesions, according to Paris classification, per colon segment

	Right	Transverse	Left	Any Segment
Flat elevation lesion: flat elevation of mucosa 0-Ila/flat elevation with central depression 0-Ila/c	296/15	161/9	280/23	597/46
Flat lesion: flat mucosal change 0-Ilb	24	11	17	46
Flat lesion: mucosal depression 0-Ilc/mucosal depression with raised edge 0-Ilc/Ila	8/7	0/2	4/8	11/17

**Aims** To assess how aspects of a procedure associate with reporting of flat and protruded lesions, according to Paris classification.

**Methods** The development of the European Colonoscopy Quality Investigation (ECQI) Group questionnaire has been previously described (UEGW 2015 and 2016). We analysed data collected between 2/6/16 and 30/4/18.

**Results** Of 6445 procedures, 2621 reported a polyp in at least one segment (40.7%). Protruded lesions were reported in 2160 procedures and flat lesions in 692 procedures.

Use of high-definition (HD) equipment significantly increases reporting of both flat lesions (13.2% vs 5.5%,  $p < 0.0001$ ) and protruded lesions (35.8% vs 23.6%,  $p < 0.0001$ ). Chromoendoscopy was increasingly used when both flat lesions (23.4% vs 7.9%,  $p < 0.0001$ ) and protruded lesions (61.4% vs 27.2%,  $p < 0.0001$ ) were reported. The use of assistive technology significantly increases flat lesion reporting (21.3% vs 10.3%,  $p < 0.0001$ ). Assistive technology does not influence reporting of protruded lesions ( $p = 0.712$ ).

The reporting of flat ( $p = 0.019$ ) and protruded ( $p = 0.015$ ) lesions varies according to the time of day the procedure was performed. Flat lesion reporting was highest in the morning (07:00-11:59): 13.9% vs 11.3% afternoon (12:00-17:59) vs 8.4% evening (18:00-19:59). Conversely, protruded lesion reporting was higher in the evening and afternoon than morning: morning 30.1% vs afternoon 33.8% vs evening 39.2%.

**Conclusions** The reporting of both flat and protruded lesions was improved by use of HD equipment or chromoendoscopy. Assistive technology improves detection of flat but not protruded lesions. Reporting of flat lesions is higher in the morning, while protruded lesions are more commonly reported in the afternoon and evening.

## OP183 POST-POLYPECTOMY SURVEILLANCE COLONOSCOPY, ARE WE FOLLOWING THE GUIDELINES?

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**DOI** 10.1055/s-0040-1704202

**Aims** The Aim of this study was to assess the adherence of gastroenterologists to International Post-Polypectomy guidelines.

**Methods** Israeli gastroenterologists answered a questionnaire, consisting of 30 items, regarding the recommendation for Post-Polypectomy surveillance following colonoscopy.

**Results** 112 gastroenterologists, representing 23% of the total number of Israeli gastroenterologists, participated in this study, by responding to the web-based questionnaire (mean age is  $47 \pm 10$  years, males, 74 (66%) . From the total responses, 54.7% were compatible with the updated European Post-Polypectomy Guidelines. The recommendations appeared remarkably inappropriate when applied to polyps that were identified as having low risk tubular adenoma, tubular adenoma with high grade dysplasia, and small serrated adenoma. In 37.2% of questionnaires, the recommended time to follow up colonoscopy was shorter than currently stated in the guidelines. The appropriate polypectomy technique was chosen by 62% of the responses. Gastroenterologists younger than 45 years of age adhered more strongly to the international guidelines, particularly in cases of Piecemeal Polypectomy or High-Risk Adenoma Polypectomy.

**Conclusions** Gastroenterologists follow the clinical guidelines for Post-Polypectomy Surveillance intervals partially. 57.4% of the recommendations were compatible with the guidelines, whereas 37% of the recommendations were for shorter interval.

## OP184 NOVEL METHOD TO ASSESS COLD SNARE POLYPECTOMY QUALITY FOR 1-10 MM COLORECTAL POLYPS - MEASURING THE MINIMUM EXTENT OF A HEALTHY RESECTION MARGIN

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**DOI** 10.1055/s-0040-1704203

**Aims** Measuring quality of polypectomy in clinical practice remains a challenge. We examined the extent of a normal healthy tissue margin around neoplastic tissue of the resected polyp specimen as a potential quality measure for polypectomy.

**Methods** Prospective single center study in patients who underwent a colonoscopy with non-cautery (cold) polyp resection. All non-fragmented polyps were included. Snares were rotated monthly (one snare type each month). The healthy margin was defined as the difference between specimen and neoplasia size (serrated or adenomatous; measured by the pathologist) divided by two. We assessed the healthy margin across endoscopists, by type of snare, and by polyp characteristics.

**Results** 561 patients with 1724 polyps were included. The mean size as estimated by the endoscopist was 4.0 mm (median 4 mm). This estimate was approximately 50% greater than the measured neoplasia size of 2.6 mm (median 2.0 mm). The healthy margin varied across endoscopist from 0.8 to 1.4 mm ( $p < 0.001$ ), with an almost 2-fold variation of a minimum margin of  $\geq 1$  mm (29% to 57%) across endoscopists ( $p < 0.001$ ). Attending-gastroenterologists resected polyps with a greater margin than trainees ( $p < 0.001$ ). Dedicated cold snares achieved a larger resection margin than standard snares (1.4 vs 1.0 mm,  $p < 0.001$ ), and a greater proportion of margins  $\geq 1$ mm (56% vs 39%,  $p < 0.001$ ). There was no difference in the margin by polyp size, proximal location, or histology.

**Conclusions** The study examined the healthy tissue margin surrounding polyp neoplasia as a potentially novel quality marker for polyp resection. The margin varied two-fold across endoscopists, in particular between attendings and trainees, and was larger when dedicated cold snares were used. The findings encourage future validation of this new measure.

## OP185 ANALYSIS OF PERFORMANCE MEASURES IN DEVICE ASSISTED ENTEROSCOPY (DAE)

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**DOI** 10.1055/s-0040-1704204

**Aims** The European Society of Gastrointestinal Endoscopy (ESGE) small-bowel working group identified a list of performance measures for small-bowel endoscopy with the final goal of quality improvement. The aim of this study is to analyze the performance measures for device assisted enteroscopy (DAE) at a service level.

**Methods** Cross-sectional analysis of DAE performed between 01/2015-07/2019 in our center. The authors evaluated 10 performance measures (6 key and 4 minor) associated to 6 quality domains. DAE interrupted because of inadequate bowel preparation or gastric stasis, or DAE performed in the setting of endoscopic retrograde cholangiopancreatography (ERCP) were excluded from our analysis.

**Results** The authors analyzed 128 DAE, 51.6% males, with a mean age of  $65.6 \pm 15.8$  years-old. Key performance measures: appropriate indication for DAE according to ESGE guidelines in 82.8% (106/128); tattooing the point of

maximal insertion depth in 60% (18/30, excluding subsequent DAE or DAE in which panenteroscopy was not pretended); diagnostic yield of 76.5% (91/119); tattooing of lesions detected/treated, intended for further treatment (endoscopic resection or surgery) in 85.7% (6/7). No complications were described and the patient comfort was not audited after DAE. Minor performance measures: proper instructions for bowel preparation in 95.1% (97/102 excluding emergency DAE and patients with ongoing bleeding); reporting the depth of insertion in 98.4% (126/128); accurate photodocumentation of pathology/lesions detected in 85.7% (78/91) and successful therapeutic intervention in 87.2% (68/78).

**Conclusions** The following performance measures were achieved: proper instructions for bowel preparation ( $\geq 95\%$ ), reporting the depth of insertion ( $\geq 80\%$ ), diagnostic yield ( $\geq 50\%$ ), successful therapeutic intervention ( $\geq 80\%$ ) and complication rate ( $< 5\%$ ). Although some standards were not achieved (i.e. indication and accurate photodocumentation  $\geq 95\%$ ), feedback to the staff involved in the procedure should be given to increase performance indexes and achieve the proposed standards.

### OP186 THE PRIMARY AIM WAS TO ASSESS THE AVERAGE NUMBER OF POLYPECTOMIES REQUIRED TO ACHIEVE COMPETENCY FOR POLYPS $\leq 2$ CM

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DOI 10.1055/s-0040-1704205

**Aims** The primary aim was to assess the average number of polypectomies required to achieve competency (polyps  $\leq 20$ mm) using DOPyS

**Methods** Trainees who had performed  $< 5$  polypectomies were recruited. Every polypectomy performed was assessed prospectively using DOPyS until a trainee was certified as 'competent' by a trainer (competence defined as scoring "independent" on two DOPyS each for cold snare, hot snare and endoscopic mucosal resection). Kaplan-Meier methods were used to illustrate competency percentages and to calculate median learning curves.

**Results** 36 trainees recruited from 16 centres (9 countries). Data from 29 trainees analysed (25 international and 4 UK). 63% (18) trainees had performed  $< 50$  colonoscopies at baseline assessment.

616 polypectomies were scored using DOPyS (mean size = 7mm). Most common sites were AC (25.8%) and SC (24%). More than half (51%) were cold snare polypectomy.

None of the international trainees attained competency as per criteria and hence the analysis was performed separately for cold and hot snare polypectomy (► **Table 1**).

In the UK, results suggested that two trainees achieved competency with median number of 38 polyps.

► **Tab. 1** International trainee data- Polypectomies to competency.

Polypectomy method	Number of trainees	Number competent	Polypectomies to competency (Median)
Cold snare	19	4	15
Hot snare	14	3	*

Median polyps to competency not calculated as  $< 50\%$  reached competency

**Conclusions** The study highlights the number of cases for achieving competency in the different techniques of polypectomy can vary and identifies a potential number of cold snare polypectomies required. It is likely that a higher number may be needed for competence in hot snare polypectomy. This knowledge may be used to plan polypectomy training and aid trainees achieve skills for safe and competent polypectomy. The study was limited by difficulties in recruiting full data sets due to dropouts and sustainability of using DOPyS internationally.

Friday, April 24, 2020

08:30-10:30

Squeaky clean

Wicklow Meeting Room 1

### OP187 RANDOMIZED CONTROLLED TRIAL COMPARING THE BOWEL CLEANSING EFFICACY OF NOVEL 1 LITRE POLYETHYLENE GLYCOL+ASCORBATE NER1006 VERSUS HIGH-VOLUME POLYETHYLENE GLYCOL USING A SPLIT DOSING REGIMEN

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DOI 10.1055/s-0040-1704206

**Aims** Efficacy and acceptability of bowel preparations are relevant for accuracy and patient-experience of colonoscopy. A novel 1L-PEG+Ascorbate(PEG+A)solution has been successfully validated against low-volume regimens only. This multicenter-randomized-trial compared the efficacy, acceptability, tolerability, and safety of the 1L-PEG-A ner1006 versus a high-volume PEG regimen, both as split-dose regimens (NCT03742232).

**Methods** 399 patients referred for screening, surveillance or diagnostic colonoscopy were randomly assigned to receive either ner1006 or 4L-PEG in 5 endoscopy centers in Italy. Endoscopists blinded to the preparation assessed level of cleansing using the Boston Bowel Preparation Scale (BBPS). A centralized review of colonoscopy videos and BBPS evaluation was also performed by an independent group of expert endoscopists blinded to the preparation modality. Acceptability and patient compliance were assessed using a questionnaire for self-reported patient-experience. Level of cleansing, acceptability and patient compliance were compared between the two groups through odds ratios calculated from univariate logistic regressions. Blood tests monitoring renal function and electrolytes were performed one week before colonoscopy and at the time of the procedure.

**Results** 374/399 enrolled patients (male:47.6%; median age: 60 years) were included in the analysis. Of these, 188 (50.3%) were assigned to ner1006 and 186 to 4L-PEG, and the cecal intubation rate was 100% (188/188) and 97.3% (183/186), respectively ( $p=0.122$ ). The overall BBPS score was greater with ner1006 than with 4L-PEG, with a mean of 8.3 (95%CI:8.1-8.5) versus (7.7; 95%CI:7.5-7.9;  $p< 0.01$ ), resulting in an OR of 2.51 (95%CI:1.31-4.81;  $p=0.005$ ). Concordance between local and centralized review was 98.9%. Self-reported moderate to severe discomfort (OR:0.88; 95%CI:0.58-1.32;  $p=0.536$ ), nausea (OR:1.47; 95%CI:0.93-2.33;  $p=0.097$ ), cramps/pain (OR:0.91; 95%CI:0.51-1.61,  $p=0.736$ ) and bloating (OR:0.93; 95%CI:0.57-1.51,  $p=0.759$ ) did not differ

between study arms. The percentage of patients who would not repeat the preparation in the future (22.7% vs. 32.2%) was lower with ner1006 than 4L PEG (OR:0.62; 95%CI:0.39-0.98; p=0.041). Treatment compliance was higher with ner1006 than with 4L PEG (93.0% vs 81.4%; OR:2.31; 95%CI:1.14-4.93; p=0.024). No statistically significant changes were recorded in blood tests between the two groups (mean Na<sup>+</sup>143.7 ner1006 vs 141.4 4L; K<sup>+</sup>4.6 vs 4.4; Cl<sup>-</sup>140.0 vs 140.7; p>0.05 for all).

**Conclusions** The novel 1L-PEG-Abowel preparation ner1006 is more effective and better tolerated than the high-volume 4L-PEG, supporting its use in clinical practice. No serious adverse events have been observed in the study population. Blood tests have shown that both the preparations used in this trial are not associated to significant shift of ions or modifications of renal functions.

## OP188 HOW TO IDENTIFY HOSPITALIZED PATIENTS AT HIGHER RISK OF INADEQUATE COLON CLEANSING FOR COLONOSCOPY: AN OBSERVATIONAL MULTICENTRE PROSPECTIVE STUDY AND A PREDICTIVE MODEL

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DOI 10.1055/s-0040-1704207

**Aims** Hospitalization is a strong predictor for inadequate colon cleansing before colonoscopy, increasing missed pathology and costs for healthcare

system. We aimed to identify factors associated to inadequate colon cleansing among inpatients, and to derive and validate a predictive model.

**Methods** Multicentre prospective observational study in 12 Italian hospitals. Consecutive adult inpatients were enrolled from February to May 2019 (derivation cohort) and from June to August 2019 (validation cohort). Inadequate cleansing was defined as BBPS < 2 in ≥1 colon segment. Multivariate logistic regression was applied.

**Results** 1,524 patients underwent colonoscopy (54% male; mean age 69 ± 16 years). Adequate colon cleansing rate was 68% (n=1,032). Meetings to optimize bowel preparation (OR 0.42, CI 0.27-0.65), written and oral instructions to patients (OR 0.48, CI 0.36-0.65), admission to Gastroenterology ward (OR 0.71, CI 0.51-0.98), split-dose regimen (OR 0.27, CI 0.20-0.35), the administration of a 1-Litre polyethylene glycol-based bowel purge (OR 0.39, CI 0.23-0.65), and ≥75% intake of bowel preparation (OR 0.09, CI 0.05-0.15) were protective factors against inadequate colon cleansing, whereas bed-ridden status (OR 2.14, CI 1.55-2.98), constipation (OR 2.16, CI 1.55-3), diabetes mellitus (OR 1.61, CI 1.18-2.20), anti-psychotic drugs use (OR 3.26, CI 1.62-6.56), ≥7 days of hospitalization (OR 1.02, CI 1.00-1.04) were risk factors for inadequate colon cleansing.

A predictive model (see ► **Table**) was derived in derivation cohort (n=1,016) and validated in validation cohort (n=508), showing good calibration (p=0.317 and p=0.638) and discrimination (accuracy 80%, CI 77-83%; 78%, CI 74-82%) in both cohorts. An app was developed.

**Conclusions** Our study is the first to identify setting-, patient- and preparation-related factors influencing colon cleansing among inpatients. We derived and validated a predictive model for clinicians.

## OP189 IMPROVING BOWEL PREPARATION FOR COLONOSCOPY WITH A CARTOON EDUCATIONAL BROCHURE: SINGLE-BLINDED, RANDOMIZED, CONTROLLED TRIAL

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DOI 10.1055/s-0040-1704208

**Aims** The bowel preparation before colonoscopy is still a major concern, and various methods have been development to improve its quality. The aim of this randomized controlled trial was to assess the cartoon educational brochure on improving the quality of bowel preparation.

**Methods** The patients were randomized assigned into two groups: cartoon educational brochure group and without cartoon educational brochure group. The primary outcomes were quality of the bowel preparation based on Ottawa score and polyp detection rate (PDR) of colorectum. The secondary outcomes included adherence for bowel preparation, patient tolerance of bowel procedure, caecal intubation rate, caecal insertion time, and withdrawal time. We performed logistic regression analysis to investigate the factors predicting the poor bowel preparation and high PDR. This study was registered on Chinese Clinical Trials register (ChiCTR1900024022).

**Results** We included 660 patients totally, with 330 patients in cartoon educational brochure group (Method A) and 330 patients without cartoon educational brochure (Method B). We analyzed 292 interventions and 294 controls. The median Ottawa scores were 5 in both the in cartoon educational brochure and the control group. 66.7%, 65.5% of patients were regard as qualified bowel preparation (Ottawa score < 6) in patients with or without cartoon educational brochure, respectively (P=0.603). No significant difference was observed in PDR (17.0% vs 20.0%, p=0.316). The secondary outcomes were similar between groups. Constipation and incorrect diet restriction were the independent factors associated with poor bowel preparation. Age and withdraw time were the independent factors associated with high PDR.

**Conclusions** The cartoon educational brochure did not improve the quality of bowel preparation. Further more effective methods are warranted to develop to improve its quality.

► **Tab. 1** Predictive model including patient and preparation-related variables for inadequate bowel cleansing as derived in the derivation cohort.

Included predictors	OR (95%CI)	Included predictors	OR (95%CI)
Bed-ridden patient	2.02 (1.44-2.83)	Compliance to preparation (≥75% intake vs. <75%)	0.10 (0.05-0.20)
Constipation	1.91 (1.37-2.66)	Split-dose or same-day regimen (vs. day-before)	0.30 (0.22-0.41)
Diabetes	1.80 (1.29-2.52)	PEG-1L bowel prep	0.45 (0.25-0.83)
Anti-psychotic drugs use	3.16 (1.40-7.10)	≥7 days of hospitalization before colonoscopy	1.94 (1.41-2.68)

## OP190 VALIDATION OF PREDICTIVE MODELS FOR INADEQUATE BOWEL PREPARATION IN COLONOSCOPIES IN A TERTIARY HOSPITAL POPULATION

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**DOI** 10.1055/s-0040-1704209

**Aims** According to the ESGE, bowel preparation is a major quality criteria for colonoscopies. Several models were developed to identify patients at risk for inadequate preparation but none is yet validated in external cohorts.

Our aim was to validate inadequate bowel preparation predictive models in our population.

**Methods** All colonoscopies performed between April-November/2019 were retrospectively included. Bowel preparation was considered adequate if Boston Bowel Preparation Scale (BBPS)  $\geq 6$ . Patients with insufficient data, incomplete colonoscopies and colectomized patients were excluded.

Two predictive models were tested: model-1 by Dik V. et al, 2015 (tricyclic antidepressants, opioids, diabetes, constipation, previous abdominal surgery, previous inadequate preparation, admitted patient and ASA score  $\geq 3$ ); Model-2 by Gimeno-Garcia A. et al, 2016 (co-morbidities, tricyclic antidepressants, constipation and previous abdominal surgery).

Statistical analysis: chi-square test;  $\alpha=0.05$ .

**Results** We included 514 patients (63% males; average age  $61.7 \pm 15.6$ ), 448 with BBPS  $\geq 6$ . The main indications for colonoscopy were endoscopic treatment (24.9%), inflammatory bowel disease (26.1%) and colorectal cancer surveillance (12.3%). Most patients used a polyethyleneglycol solution (72.2%). Previous abdominal surgery (36.2%), ASA score  $\geq 3$  (23.7%) and diabetes (21.4%) were the most commonly identified risk factors.

Model-1 identified 202 patients with inadequate cleansing while model-2 identified 186 and both were associated with accurate predictions ( $p < 0.01$  for both). Model-1 had a sensitivity, specificity, positive predictive value (PPV) and negative predictive value (NPV) of 64.5%, 65.5%, 92.6% and 21.3%, respectively. Model-2 had sensitivity, specificity, PPV and NPV of 67.6%, 62.1%, 92.4% and 22%, respectively.

**Conclusions** Both models had a similar performance to the original papers (66% and 50% sensitivity for model-1 and model-2; 79% and 80% specificity for model-1 and model-2) and were validated in our population. Both models identified the majority of patients with low risk of inadequate bowel preparation (92.6% and 92.4%, respectively) but also identified more than 60% of patients with inadequate bowel preparation.

## OP191 EFFECT OF A LOW RESIDUE DIET DURING ONE DAY VERSUS THREE DAYS ON BOWEL CLEANSING, DIET TOLERANCE AND COLONOSCOPY PERFORMANCE: A NON-INFERIORITY RANDOMISED CLINICAL TRIAL

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**DOI** 10.1055/s-0040-1704210

**Aims** There are no quality studies regarding the optimal length of low residue diet. In order to assess the efficacy and tolerance of a low-residue diet (LRD) during one day versus three days, we designed this trial in participants referred for a screening colonoscopy.

**Methods** This is a non-inferiority, randomized and masked for the researcher trial conducted in a tertiary care center. We defined a 5% no-inferiority margin, 95% power and 5%  $\alpha$ .

Participants followed one or three days of LRD. There were no other differences in the preparation. All of them received Moviprep in split dosing. In case of risk of insufficient preparation, we added 10mg of bisacodyl the day before. Bowel cleansing was evaluated using the Boston Bowel Preparation Scale (BBPS). Inadequate cleansing was defined as a BBPS  $< 2$  in any segment. Diet and preparation tolerance were assessed using a Likert scale.

**Results** A total of 835 subjects, 420 and 415 in 1 and 3 days diet group respectively, were analyzed. There are no differences in the characteristics nor in the time-lapse from the end of bowel preparation to colonoscopy. One day diet reached a 95.8% of adequate cleansing and three days 95.5%. This makes a difference of -0.3% (-0.31, 0.25 95% CI). Intubation and withdrawal time are similar, 06:10 min and 16:28 min respectively. Regarding tolerance one day obtained a maximum tolerance score in 47.7% of the preparations versus 28.7% in the other group ( $p < 0.05$ ). There are no differences in Moviprep tolerability (33.2% vs. 27.8% ( $p > 0.05$ )) nor in adenoma (71.3% vs 71.6%) and polyp detection rates (76.7% vs 74.6%). Only 1 subject experienced an adverse event in 1-day group while 4 in the other.

**Conclusions** One day of LRD improves tolerability and does not impact bowel cleansing quality nor colonoscopy performance.

## OP192 NOVEL PATIENT SUPPORT PROGRAMME, INCLUDING ARTIFICIAL INTELLIGENCE ENABLED CHATBOT FOR ENHANCED PATIENT INSTRUCTION IN BOWEL PREPARATION

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**DOI** 10.1055/s-0040-1704211

**Aims** New ESGE guidelines strongly recommend use of enhanced instructions for patients taking bowel preparation. Technology based patient support programmes (PSP) require minimal clinical resource. We discuss a new method for enhanced instructions through an artificial intelligence enabled chatbot.

**Methods** A novel, innovative, enhanced PSP, including SMS reminder service, personalised dosing schedules and a chatbot, was launched alongside PLENUVU to enhance patient experience during bowel preparation. It aims to ensure optimal adherence and therefore successful bowel preparation. The chatbot uses natural language processing to understand a patient's question intent and provide the corresponding answer. The chatbot is available at all times to answer questions online. It features videos, hyperlinks and contacts for medical information services. Questions were identified from search engine and medical information records. The chatbot can be accessed through the product website.

**Results** From October 2018-November 2019, 1743 questions were asked with an average of 2.4 questions per session, from an estimated 35 countries. Of the total patients using the website 33% choose to use the chatbot. The chatbot has identified useful insights into patient concerns and knowledge gaps. The most commonly asked questions are outlined in ► **Table 1**.

**Conclusions** PSP uptake and particularly the chatbot has been promising. A comprehensive patient support programme may ensure consistently high-quality bowel preparation versus traditional instructions. The digital basis of this PSP may limit participation based on access to technology. However, 87.7% of the European population are internet users. It remains important to measure the direct impact of this PSP on bowel preparation outcomes.

► **Tab. 1** Top 5 questions asked on the chatbot, number of times and response provided.

When will PLENVU start to work?	304/1743	The time PLENVU takes to work varies from person to person. Stay close to a toilet once you start taking PLENVU. If you don't have a bowel movement within 6 hours of taking PLENVU, stop taking it and contact your doctor immediately.
How do I prepare PLENVU?	161/1743	PLENVU should always be prepared and taken exactly as described in the Patient Information Leaflet, or as your doctor, pharmacist or nurse has told you. Read the Patient Information Leaflet here. Click below to find out more about preparing Dose 1 or preparing Dose 2. [Button 1: Prep Dose 1], [Button 2: Prep Dose 2], [Button 3: Patient Information Leaflet]
How do I prepare PLENVU? What do I do if I cannot complete the whole dose?	105/1743	Try to drink as much of each dose of PLENVU as you can, including at least 500ml of clear fluids after each dose. It may be easier to take if you drink it through a straw or if you refrigerate it once it has been made up. If you are unable to finish the full dose, make a note of how much PLENVU you were able to take, and tell your doctor or nurse before your procedure. Click below to see which clear fluids are recommended.
How long will PLENVU work for?	73/1743	The time PLENVU takes to work varies from person to person. Stay close to a toilet once you start taking PLENVU. If you don't have a bowel movement within 6 hours of taking PLENVU, stop taking it and contact your doctor immediately.
What clear fluids can I drink?	66/1743	Clear fluids include water, clear soups, herbal tea, black tea or coffee (without milk), soft drinks/diluted cordials (NOT blackcurrant) and clear fruit juices (without pulp). Do not drink alcohol, milk, anything coloured red or purple, or any other drinks containing pulp material.

## OP193 HIGH CLEANSING EFFICACY WITH OVERNIGHT SPLIT DOSING 1L NER1006 ACROSS SCREENING, DIAGNOSTIC AND SURVEILLANCE COLONOSCOPY: POST HOC ANALYSIS OF TWO RANDOMISED PHASE 3 CLINICAL TRIALS

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**DOI** 10.1055/s-0040-1704212

**Aims** We compared, per reason for colonoscopy (screening, surveillance or diagnostic), the cleansing performance of 1L polyethylene glycol NER1006 (PLENVU) versus two preparations.

**Methods** This post hoc analysis of two phase 3 clinical trials compared the efficacy of pooled PLENVU versus pooled 2L polyethylene glycol plus ascorbate (2LPEG) or oral sulfate solution (OSS) using overnight split-dosing. Pooling increased subgroup sample sizes. The primary endpoint was the bowel cleansing success, assessed by treatment-blinded central readers using the Harefield Cleansing Scale (HCS). Patients with no primary efficacy data were imputed as failures; the resulting estimates of efficacy were therefore conservative. Overall cleansing success and the mean number of high-quality cleansed segments per patient were calculated per reason for colonoscopy.

**Results** A total of 1103 patients were included. The pooled PLENVU arm (N=551) achieved a numerically higher overall cleansing success than the pooled 2LPEG/OSS arm (N=552) (88.6% vs 86.2%; P=0.328) (► **Table**). Overall cleansing success rates were consistently high for PLENVU across reasons for colonoscopy (range 86.7%-89.7%) and numerically higher for pooled PLENVU versus comparator: screening (89.1% vs 86.2%; P=NA), surveillance (86.7% vs 85.5%; P=0.3513) or diagnostic (89.7% vs 87.4%; P=0.4095). The mean number of high-quality cleansed segments per patient was significantly greater with PLENVU than 2LPEG/OSS in all performed comparisons (P< 0.009).

**Conclusions** PLENVU was highly effective across reasons for colonoscopy. It achieved overall cleansing success rates of similar high magnitude to the overall population and comparable to those achieved by 2LPEG/OSS. Greater high-quality cleansed segments with PLENVU is consistent with previous trial-specific assessments.

► **Tab. 1** Overall success rates and high-quality segments per patient in all patients and by reason for colonoscopy

	All patients	Screening	Surveillance	Diagnostic
Overall cleansing success rate (Pooled PLENVU vs 2LPEG/OSS), % (n/N)	88.6% (488/551) vs 86.2% (476/552)	89.1% (271/304) vs 86.2% (262/304)	86.7% (130/150) vs 85.5% (124/145)	89.7% (87/97) vs 87.4% (90/103)
1-sided P-value	0.328	NA	0.3513	0.4095
High-quality cleansed segments per patient (Pooled PLENVU vs 2LPEG/OSS), mean ± SD	2.3 ± 1.8 vs 1.8 ± 1.8	2.2 ± 1.8 vs 1.8 ± 1.8	2.3 ± 2.0 vs 1.7 ± 1.8	2.5 ± 1.8 vs 1.8 ± 1.8
1-sided P-value	<0.0001	0.0002	0.0089	0.0016

## OP194 REAL-WORLD PATIENT EXPERIENCE WITH 1L NER1006 AS A BOWEL PREPARATION FOR COLONOSCOPY: A PROSPECTIVE, MULTI-CENTRE SURVEY COVERING 707 HEALTH CARE PROVIDERS IN THE UNITED STATES

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**DOI** 10.1055/s-0040-1704213

**Aims** A survey assessed real-world patient experience and treatment satisfaction in US adults who received 1L polyethylene glycol (PEG) NER1006 (PLENVU).

**Methods** Patients from US community gastroenterology practices completed an online survey within 2 weeks post-colonoscopy. Questions covered patient history of colonoscopy and prior bowel preparation(s) prescribed, experience during administration of PLENVU, and patient satisfaction with the bowel preparation process. Nine-point grading scales captured the ease of preparation and consumption; importance of volume requirement; and patient satisfaction. Results are presented descriptively.

**Results** Among 1630 enrolled patients from 707 health care providers, 1606 underwent colonoscopy (male/female/NA 34.9%/62.5%/2.6%, mean age 54.4 years). 74.7% patients had no family history of colon cancer, 62.6% had previous colonoscopy, and 64.8% were having a screening colonoscopy. Among 1598 patients who completed the survey Sept-2018 to Feb-2019, 91.6% took PLENVU as overnight split dosing and 8.4% in morning of colonoscopy. Nearly all (97.6%) consumed all or most of their treatment (► **Table**). The low total required ingestion volume of PLENVU was at least medium important for 93.2% patients. Among the 1005 patients with previous bowel prep experience 89.5% were at least moderately and 62.5% were very satisfied with PLENVU overall. Most, 65.3%, stated a much better or better experience with PLENVU versus bowel preps they had previously used.

**Conclusions** This first real world patient experience survey for PLENVU showed that patient experience with PLENVU was favourable and adherence was high. The majority of patients were very/moderately satisfied with the overall experience and found it much better/better than other bowel preparations used.

► **Tab. 1** Selected topics with response categories

	Patients, n (%); n = 1598
Volume of bowel preparation regimen completed All; Most; At least half; Less than half	1392 (87.1); 167 (10.5); 29 (1.8); 10 (0.6)
“How important is it to you that using PLENVU required only 64 US fl oz of total solutions?” Very important (score, 7-9); Medium important (score, 4-6); Not important (score, 1-3);	1206 (75.5); 283 (17.7); 109 (6.8)
“How was your experience with PLENVU compared to the other bowel cleansing medications(s) you previously used?” Much better/better (score, 7-9); About the same (score, 4-6); Worse/much worse (score, 1-3);	656 (65.3); 195 (19.4); 154 (15.3); n = 1005
“How satisfied were you with PLENVU, overall?” Not satisfied (score, 1-3); Okay (score, 4-6); Very satisfied (score, 7-9);	161 (10); 433 (27); 1004 (63)

## OP195 EFFECTIVENESS AND TOLERABILITY OF NER1006 COMPARED TO HIGHER-VOLUME PEG PREPARATIONS FOR COLONOSCOPY: A PROSPECTIVE, MULTICENTER OBSERVATIONAL STUDY

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**DOI** 10.1055/s-0040-1704214

**Aims** The effectiveness of bowel cleansing is essential for a quality colonoscopy since it affects diagnostic accuracy. The study aims to assess the efficacy and tolerability of the 1L PEG preparation with NER1006 (Plenvu Norgine, Harefield, UK), compared to 4L and 2L PEG solutions in a real-life setting.

**Methods** All in- and out-patients scheduled for a screening, surveillance or diagnostic colonoscopy, after an afternoon-only or afternoon-morning 1, 2 or 4L PEG-based preparation were consecutively enrolled from September 2018 to February 2019 in 5 Italian centres. Bowel cleansing was assessed through the Boston Bowel Preparation Scale (BBPS). Cleansing success was defined by a total BBPS≥6 with a partial BBPS≥2 in each segment and high-quality cleansing of the right colon by a partial BBPS=3. Tolerability was evaluated through a semi-quantitative scale.

**Results** Overall, 1289 patients meeting inclusion criteria were enrolled in the study. Of these, 490 performed a 4L PEG (Selgesse), 566 a 2L PEG (Moviprep or Clensia) and 233 a 1L PEG preparation (Plenvu).

A cleansing success was achieved in 72.4%, 74.1% and 90.1% ( $p < 0.001$ ), while a high-quality cleansing of the right colon in 15.9%, 12.0% and 41.4% ( $p < 0.001$ ) for 4L, 2L and 1L-PEG preparation groups, respectively. No serious adverse events were reported.

Multiple regression models confirmed that preparation with the 1L-PEG was an independent predictor of overall cleansing success over the 2L-PEG (OR=1.79, 95% CI=1.04-3.08;  $P=0.035$ ), an independent predictor of high-quality cleansing of the right colon both over the 4L-PEG (OR=1.58, 95% CI=1.02-2.44;  $P=0.041$ ) and the 2L-PEG (OR=3.13, 95% CI=2.08-4.72;  $P < 0.001$ ), and an independent predictor of tolerability both over the 4L-PEG (estimate 0.57, 95% CI=0.25;0.90;  $P=0.001$ ) and the 2L-PEG (estimate 0.72, 95% CI=0.41;1.03;  $P < 0.001$ ).

**Conclusions** This study shows that the 1L-PEG preparation with NER1006 presents greater effectiveness compared to higher-volume PEG preparation with the advantage of better tolerability.

## OP196 IS TELEPHONE RE-EDUCATION PREVIOUS TO BOWEL PREPARATION A REAL ASSET?

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**DOI** 10.1055/s-0040-1704215

**Aims** Despite all the innovations in bowel preparation methods, the quality of bowel preparation in some patients undergoing colonoscopy remains a major limitation. Recently, some studies suggest that telephone re-education(TRE)on the day before colonoscopy is associated with better quality of preparation.

**Aim** to compare the quality of bowel preparation based on written, oral and telephone information (TRE) versus only written and oral information.

**Methods** Single-center, prospective, randomized, blinded study. All patients received regular instructions during appointment (oral) and written by mail. Those scheduled for colonoscopy were randomly assigned to receive TRE two days before colonoscopy for bowel preparation or no TRE (control group). TRE was performed by an experienced nurse in endoscopy and it consisted of a phone call of about 10 min in which an explanation of the preparation with practical tips was given, and all the patients' doubts were clarified.

**Results** After applying exclusion criteria, 585 patients were included, median age 61 (18-86) years, 54.4% male, 47.9% (n=280) received *Plenvu* and 52.1% (n=305) *Moviprep*. Patients that received TRE were significantly older (63.0 vs 60.0; p=0.031). Patients on the TRE more frequently performed colonoscopy in the morning period (78.0% vs 55.2%; p<0.001).

We verified that 177 (30.3%) of our population were on TRE group, 51.4% received *Plenvu* and 48.6% *Moviprep*. We found no differences in patients with or without TRE regarding adequate bowel preparation (Boston Bowel Preparation Scale  $\geq 6$ , with no subscore less than 2) (81.9% vs 81.2%; p=0.89) or quality of preparation by segment (p>0.05). When we compared the presence of adequate bowel preparation in both groups in the morning (78.3% vs 71.7%; p=0.169) and in afternoon (94.9% vs 93.4%; p=0.727), no statistical significant differences were observed.

**Conclusions** In our study, we found no influence of telephone re-education (TRE) in the quality of bowel preparation. Therefore, good clarification during appointments and well-written information such as in our center to reinforce the importance of bowel preparation for the success of the colonoscopy seem sufficient for a good preparation.

## OP197 POLYETHYLENE GLYCOL: DECREASING THE VOLUME DOES NOT COMPROMISE EFFECTIVENESS!

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DOI 10.1055/s-0040-1704216

**Aims** Success of colonoscopy is linked to the adequacy of bowel cleansing. Polyethylene glycol (PEG) solutions are widely used for colonic cleansing but with limitations concerning tolerability and acceptability. *Plenvu* is the first PEG-containing bowel preparation that requires only 1L of water for dissolution and ingestion.

The aim of this study was to compare the efficacy of two low volume PEG preparations: *Plenvu*-1L versus *Moviprep*-2L. Secondary endpoint was to compare the patient's satisfaction with the two bowel preparation regimens based on a validated questionnaire performed on the day of the colonoscopy that evaluated the tolerability and the occurrence of adverse effects.

**Methods** Single-center, prospective, randomized, blinded study. Patients received either *Plenvu*-1L or *Moviprep*-2L (1:1).

**Results** After exclusion criteria, 449 patients were included, median age 59 (18-86) years, 52.3% male, 50.3% (n=226) received *Plenvu* and 49.7% (n=223) *Moviprep*. Both groups were homogeneous regarding age, gender, co-morbidities and medication.

There were no differences between the groups regarding the rate of adequate bowel preparation (Boston Bowel Preparation Scale [BBPS]  $\geq 6$ , with no subscore less than 2) (88.1% vs 83%; p=0.125); Although there was a trend towards the *Plenvu* group presenting more frequently with excellent preparation (BBPS 8-9), it did not reach statistical significance (60.6% vs 51.6%; p=0.053).

Moreover, patients on *Plenvu* group classified the flavor of the preparation as unpleasant more frequently (49.1% vs 32.3%; p<0.001) and presented more frequently with nausea (43.8% vs 32.3%; p=0.012) or vomit (20.4% vs 11.2%; p=0.008).

Although nearly half of patients found the preparation unpleasant, none discontinued, and the overall cleansing success was still achieved in these patients.

**Conclusions** Patients on *Plenvu* group presented more frequently an excellent quality of preparation compared to patients on *Moviprep* however, not statistically significant. High-quality cleansing may become performance target for pre-colonoscopy bowel preparation over other quality measures. *Plenvu* group reported more frequently unpleasant flavor and more adverse events (nausea and vomiting) but achieved overall cleansing success.

## OP198 A NOVEL ARTIFICIAL INTELLIGENCE SYSTEM FOR THE ASSESSMENT OF BOWEL PREPARATION

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DOI 10.1055/s-0040-1704217

**Aims** The quality of bowel preparation is an important factor that can affect the effectiveness of a colonoscopy. Several tools, such as the Boston Bowel Preparation Scale (BBPS) and Ottawa Bowel Preparation Scale, have been developed to evaluate bowel preparation. However, understanding the differences between evaluation methods and consistently applying them can be challenging for endoscopists. There are also subjective biases and differences among endoscopists. Therefore, this study aimed to develop a novel, objective, and stable method for the assessment of bowel preparation through artificial intelligence.

**Methods** We used a deep convolutional neural network to develop this novel system. First, we retrospectively collected colonoscopy images to train the system and then compared its performance with endoscopists via a human-machine contest. Then, we applied this model to colonoscopy videos and developed a system named ENDOANGEL to provide bowel preparation scores every 30 seconds and to show the cumulative ratio of frames for each score during the withdrawal phase of the colonoscopy.

**Results** ENDOANGEL achieved 93.33% accuracy in the human-machine contest with 120 images, which was better than that of all endoscopists. Moreover, ENDOANGEL achieved 80.00% accuracy among 100 images with bubbles. In 20 colonoscopy videos, the accuracy was 89.04%, and ENDOANGEL continuously showed the accumulated percentage of the images for different BBPS scores during the withdrawal phase and prompted us for bowel preparation scores every 30 seconds.

**Conclusions** We provided a novel and more accurate evaluation method for bowel preparation and developed an objective and stable system—ENDOANGEL—which could be applied reliably and steadily in clinical settings.

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Friday, April 24, 2020

08:30 – 10:30

How to maximize quality in GI-endoscopy?

Liffey Meeting Room 1

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## OP199 IMPROVING STANDARDS OF UPPER ENDOSCOPY FOR BARRETT'S OESOPHAGUS BY IMPLEMENTING KEY PERFORMANCE MEASURES - A QUALITY IMPROVEMENT INITIATIVE

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DOI 10.1055/s-0040-1704218

**Aims** Quality metrics for Barrett's oesophagus are lacking in comparison to colonoscopy. They may be equally important in detection of neoplasia

► **Tab. 1** Key Performance Measures

Key Performance Measure	Pre-Implementation Long Segment (n=11)	Pre-Implementation Short Segment (n=24)	Post-Implementation Long Segment (n=19)	Post-Implementation Short Segment (n=9)
Prague Classification; Seattle Protocol	72.7% (8); 45.5% (5)	58.3% (14); 20.8% (5)	100%; 84.2% (16)	77.8% (7); 66.7% (6)
Time (1min/cm); Advanced Imaging	63.6% (7); 72.7% (8)	100%; 58.3% (14)	94.7% (18); 89.5% (17)	100%; 66.7% (6)

and improving clinical outcome. The ESGE has published key performance measures in Barrett's assessment. Our study aimed to assess the impact of implementing performance measures in improving quality of endoscopy in Barrett's oesophagus.

**Methods** A retrospective audit was performed at baseline and 8 weeks after implementation of performance measures. Key performance measures used were: 1) appropriate indication, consent and safety checklist (100% of patients) and 2) use of Prague classification, Seattle protocol, and inspection time of 1 minute per cm in 90% of cases. We also recommended use of advanced imaging techniques in 90% of patients with long segment Barrett's. We documented cases of adenocarcinoma and dysplasia through a multidisciplinary process.

**Results** Initially, 807 procedures were assessed to identify 35 cases of Barrett's oesophagus with 11 long segment and 24 short segment disease. Implementation of performance measures was done through education meetings and pictorial descriptions within the endoscopy room. Post implementation, 420 procedures were audited to identify 28 cases of Barrett's with 19 long segment and 9 short segment disease. 100% of pre-procedure metrics were met. 3 cases of high-grade dysplasia and 1 case of adenocarcinoma were identified initially (11.4%) and low-grade dysplasia rate was 2%. Post implementation audit identified 1 case of adenocarcinoma and 2 of low-grade dysplasia (7%). Detailed results are shown below.

**Conclusions** Quality metrics are important in upper endoscopy especially for pre-malignant conditions such as Barrett's. Our study suggests that implementation of the ESGE performance measures improves quality of assessment of Barrett's oesophagus.

## OP200 ESD CURRICULUM IN FRANCE: A COMPARATIVE STUDY OF LEARNING CURVES IN 3 FRENCH CENTERS WITH DIFFERENT TRAINING METHODS

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 DOI 10.1055/s-0040-1704219

**Aims** Development of ESD in Europe remains limited compared to Japan. ESGE lately published a position statement for the training in ESD. We aimed to compare the learning curves of three french centers, with different curriculum.

**Methods** We prospectively included 450 patients to analyse the learning curves of the 150 first ESD of three centers: a center with two operators trained independently on animal model only (A), a center with a single operator trained on animal model with exchanges with french experts (B) and a center with a single operator with a one-year fellowship in an european expert center and animal model (C). The primary endpoint was the curative resection rate. Secondary endpoints were the monobloc resection rate, the size of lesions, the speed of resection, the complication rate and the location.

**Results** Monobloc resection rates were 96,0%(A), 91,3%(B) and 94%(C), histological complete resection rates were 79,3%(A), 77,3%(B) and 81,8%(C) and curative resection rates were 73,3%(A), 73,3%(B) and 73,4%(C) without any significant difference.

All centers experienced significantly increased curative resection rate after the 75th case (77,8% vs 68,9%, p=0,034).

Perforation rates were 8,0%(A), 2,7%(B) and 7,5%(C).

The size of lesions increased with experience (1507mm<sup>2</sup> before 75 cases vs 1904mm<sup>2</sup> after 75 cases, p< 0,0001) whereas the length of procedures decreased (126,3min vs 90,7min, p=0,036).

Location of lesions was different with more colonic lesions for centers B and C, more recently trained.

Centers B and C more often used double-clip and rubber band countertraction than center A (respectively 63,3%, 67,7% and 25,33%, p< 0,0001) and performed more colonic ESD (57,3%(B), 38,0%(C) vs 19,3%(A), p< 0,0001).

The average time to perform 30 ESD was 247 days, decreasing over time.

**Conclusions** Training in ESD is possible in Europe with curative resection rates close to Japanese studies, and seems faster for recently trained centers, maybe thanks to countertraction.

## OP201 QUALITY OF COLONOSCOPY «QUACOL». THE RESULTS OF THE PROSPECTIVE MULTICENTRE STUDY «QUACOL 2» COMPARED WITH RESULTS OF THE «QUACOL 1» STUDY IN RUSSIA

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 DOI 10.1055/s-0040-1704220

**Aims** In Russia, colorectal cancer (CRC) represents the second most common cancer in women, the third in men. The long-term efficacy of colonoscopy in preventing Colorectal Cancer is strictly related with the risk of interval cancer, which in turn is associated with colonoscopy quality indicators: Adenoma Detection Rate (ADR), Cecal Intubation Rate (CIR), Colonoscopy Withdrawal Time (CWT), Bowel preparation. The aims of our «QuaCol 2» study were to assess quality of colonoscopy in Russia after performing educational project «QuaCol» and to compare the results of «QuaCol 2» and «QuaCol 1» studies.

**Methods** For the first time the quality of colonoscopy was examined within «QuaCol 1» study in Russia in 2014. Cohort of 8829 patients was included in «QuaCol 1» from 14 centers. The quality of colonoscopy in Russia within «QuaCol 1» was recognized as suboptimal. Then the educational «QuaCol» project was performed. After that the quality of colonoscopy in Russia was assessed within «QuaCol 2» in 2019.

**Results** Cohort of 22380 patients (male 58%, female 42%, mean age 52,3) was included from 82 centers between November 2018 and March 2019 within

«QuaCol 2». The results were compared with «QuaCol 1». Bowel preparation was adequate 89 % in «QuaCol 2» vs 77% in «QuaCol 1» ( $p < 0,001$ ). Two factors associated with bowel preparation quality were: split-regimen and 2 liters of laxative. The split-regimen 70 % vs 25 % ( $p < 0,001$ ). CIR 96,2% vs 86 % ( $p < 0,001$ ). CWT was examined in 74,5 % vs 64 % ( $p < 0,001$ ). ADR 25,8 % vs 18 % ( $p < 0,001$ ).

**Conclusions** The «QuaCol 2» study showed that after carrying out an educational project «QuaCol» the colonoscopy quality in Russia improved and became optimal according to ESGE recommendations. Our study revealed that the medical educational project can be a key factor for improving colonoscopy quality.

## OP202 IMPROVING ENDOSCOPIC ASSESSMENT AND MANAGEMENT OF LARGE NON-PEDUNCULATED COLORECTAL LESIONS IN A WESTERN CENTER OVER 10 YEARS: LESSONS LEARNT AND IMPACT ON PATIENTS' OUTCOMES

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DOI 10.1055/s-0040-1704221

**Aims** Outcomes of endoscopic management of large colorectal (CR) non-pedunculated lesions (LNPLs) are still under evaluation, especially in Western settings. We analysed the clinical impact of changes in LNPLs' management over the last decade in a European center.

**Methods** All consecutive sessile/laterally spreading (LST) LNPLs  $\geq 20$ mm endoscopically assessed between 2008-2019 were retrospectively included. Lesions', patients' and resections' characteristics were compared among clinically relevant subgroups. Multivariate logistic regression (for predictors of submucosal invasion [SMI] and recurrence), Kaplan-Meier curves and ROC curves (for temporal cut-offs in trends analyses) were used.

**Results** 395 LNPLs were included (30mm[IQR 20-40]; SMI=9.6%; primary endoscopic resection [ER]=88.4%). SMI risk was associated to lesion morphologies (from 1.9% of granular-homogeneous to 35% of non-granular-pseudodepressed LSTs;  $p < 0.0001$ ), dimensions ( $\geq 40$ mm OR=2.9[1.5-5.8]) and location (distal to splenic flexure OR=2.3[1.2-4.6]). However, at multivariate logistic regression, only the presence of pseudo-depression (OR=4.6[1.1-19.7]) and a JNET classification 2b/3 (OR=51.8[12.5-215.5]) independently predicted SMI beyond other factors.

After complete ER, the involvement of ileocecal valve/dentate line, a piecemeal resection and a high-grade dysplasia independently predicted recurrence. 5-years' Recurrence-free, Surgery-free and Cancer-free survivals were 77.5%, 98.6% and 100%, with 93.8% recurrences endoscopically managed and no death attributable to ER or colorectal cancer (versus 3.4% primary surgery mortality).

ROC curves identified the period  $\geq 2015$  (following educational interventions on pre-resection lesion assessment and the introduction of Endoscopic Submucosal Dissection [ESD]) as associated with improved lesions' characterization, increased en-bloc resection of SMI lesions (87.5% vs 37.5%;  $p=0.0455$ ), reduced primary surgery (7.5% vs 16.7%;  $p=0.0072$ ), primary surgical referral of benign lesions (5.1% vs 14.8%;  $p=0.0019$ ), and recurrences (15.5% vs 27.5%;  $p=0.0347$ ).

**Conclusions** ESD introduction and educational interventions allowed ER of more complex lesions, offset by increased complementary surgery for incomplete resections or advanced histology. Notwithstanding, they have overall reduced surgery demand and increased appropriateness and safety of LNPLs' management in our center.

## OP203 COLONOSCOPY QUALITY AFTER INTENSIVE TRAINING OF INEXPERIENCED ENDOSCOPISTS IN A NORWEGIAN SCREENING TRIAL FOR COLORECTAL CANCER

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DOI 10.1055/s-0040-1704222

**Aims** High-quality colonoscopies are essential to achieve an effective colorectal cancer (CRC) screening program. Limited colonoscopy capacity is a bottleneck for CRC screening. To inform the Norwegian health authorities of the feasibility of CRC screening, a screening pilot project was launched. Most of the endoscopists who performed the screening colonoscopies had little endoscopy experience and were given intensive training (one-to-one supervision by an experienced endoscopist) for three to six months before performing endoscopies. The aim of this work is to show colonoscopy performance of inexperienced endoscopists.

**Methods** The project was introduced as a randomised effectiveness trial comparing once-only sigmoidoscopy and biennial fecal immunochemical testing (FIT). A positive screening test was followed by a colonoscopy. Colonoscopies were performed between 2012 and 2019. We measured well-established quality performance indicators: cecum intubation rate (CIR), mean withdrawal time for diagnostic colonoscopies, adenoma detection rate (ADR). We calculated these measures for the first colonoscopy per participant, performed by an inexperienced endoscopist who had performed  $\geq 100$  colonoscopies in the course of the trial. We state the patient reported outcomes abdominal pain and satisfaction in colonoscopies performed between 2012-2018.

**Results** Between 2012 and 2019, 8,857 colonoscopies were performed. The CIR was 97.2% (95% confidence interval [CI] 96.8%-97.5%). The mean withdrawal time was 13.6 minutes (95% CI 13.3-14.0 minutes). ADR after positive FIT was 57.7% (95% CI 56.4-59.0); 51.3% (95% CI 49.3%-53.2%) for women and 62.8% (95% CI 61.1%-64.4%) for men. The feed-back questionnaire was completed by 85.6% regarding pain and 72.4 % of participants regarding satisfaction. 9.5% of colonoscopy participants who submitted the form, experienced severe pain and 91.1% were very content with the examination.

**Conclusions** Colonoscopies performed by newly trained endoscopists were performed with high quality, achieving recommended benchmark standards. Our results confirm that intensive training of inexperienced endoscopists is feasible in a screening setting with good results.

## OP204 IMPACT OF “MOTION TRAINING” ON ACQUIRING CANNULATION SKILLS FOR NOVICE ENDOSCOPISTS TRAINING ON A VALIDATED MECHANICAL ERCP SIMULATOR: INTERIM ANALYSIS FROM A RANDOMIZED CONTROL TRIAL

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DOI 10.1055/s-0040-1704223

**Aims** ERCP training remains a sensitive issue, with current data showing that traditional training methods, based on a hands-on, master-disciple paradigm, fall short of producing competent trainees. We aimed to evaluate whether a novel approach to training might improve the learning curve for novice endoscopists training in ERCP.

**Methods** We conducted a multicenter randomized control trial, using a validated mechanical simulator (the Boskoski-Costamagna trainer). Trainees with no experience in ERCP were either assigned to a group undergoing standard cannulation training or a group undergoing “motion-training”, which implied performing familiar motor functions such as writing and drawing, using instruments previously unfamiliar to the trainee (e.g. duodenoscope and dedicated ERCP catheters), before undergoing standard cannulation training. All trainees were timed and graded on their performance in selective cannulation of 4 different papilla configurations, with the aid of a validated score (TEESAT).

**Results** 30 trainees (13 E-motion group, 17 standard group) each performed 20 timed-cannulation attempts, for a total of 600 procedures. Successful cannulation of the bile duct was achieved in 582/600 attempts (97%), with no significant difference between the two study groups (96.2 vs. 97.6%,  $p=0.33$ ). Trainees in the E-motion group had significantly lower median cannulation times compared to trainees in the standard group (35 vs 44 seconds,  $p=0.036$ ). On subgroup analysis, this difference was only statistically significant in terms of the first 20 attempts (papilla type 1), with further timed cannulation attempts not differing significantly between the study groups. The overall performance assessment by the supervisor using the TEESAT score showed similar results between the two study groups ( $p=0.559$ ).

**Conclusions** We concluded that “motion training” had a positive impact on cannulation time during the first stages of the training, with potential added value in training novice endoscopists. Future studies need to establish its usefulness in supplementing current training programmes.

## OP205 EDUCATIONAL TELEPHONE INTERVENTION NEAR THE COLONOSCOPY AS A SALVAGE STRATEGY AFTER A BOWEL PREPARATION FAILURE. A MULTICENTRE RANDOMIZED TRIAL

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DOI 10.1055/s-0040-1704224

**Aims** The most important predictor of unsuccessful bowel preparation (BP) is a previous failure. There are no standardized recommendations to prepare those patients.

The aim of this study was to analyse the efficacy in BP success of a nurse-led educational intervention by telephone within the 48 hours before the colonoscopy, in patients with previous BP failure.

**Methods** Multicentre randomized clinical trial with parallel groups (control and phone), endoscopist-blind. Consecutive patients with inadequate BP were included. A sample size of 652 participants was calculated to show a 10% improvement in BP success. Both groups received the same BP protocol including 4 liters PEG in split dose regimen. The main outcome was successful BP, defined as all colon segments with a Boston Bowel Preparation score with 2 or 3 points. No efficacy data were considered BP failures. Intention to treat (ITT) analysis included all randomized participants. Per protocol (PP) analysis included participants that could be contacted by telephone and control cases. Clinicaltrials identifier: NCT03055689

**Results** The investigators included, 651 consecutive participants in 11 hospitals.

ASA I score was more frequent in the control group, without other differences in the baseline characteristics. In the ITT analysis, comparing control and phone groups; BP success was 72% and 77.3%, absolute risk difference (ARD) 5.3%, ( $p=1.2$ ). The attendance rate was 92% and 94% ( $p=0.25$ ). In the phone group, 266 (83%) patients were contacted by telephone. Per protocol analysis showed a significant BP success increase, 83.5%, ARD 11.5 ( $p=0.001$ ).

**Conclusions** This is the first multicenter randomized trial evaluating an educational intervention in patients with high risk of poor bowel preparation. A nurse-led telephone call did not reach a significant increase of BP success. However, when patients were effectively contacted and educated by phone, with an applicability of 83%, the bowel preparation success was significantly improved.

## OP206 HAS COLONOSCOPY WITHDRAWAL TIME CHANGED SINCE THE INTRODUCTION OF NATIONAL ENDOSCOPY DATABASE REPORTING SOFTWARE?

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**Aims** Colonoscopy withdrawal time (CWT) is a core quality indicator affecting Adenoma detection rate (ADR) and subsequently preventing colorectal cancer. However, studies have shown wide variation in CWT and ADR between different endoscopists. The National Endoscopy Database (NED) was implemented to ensure quality in all endoscopy units across the UK and also to avoid variation in practice. Our aim is to assess whether CWT changed since the introduction of NED compliant endoscopy reporting software (ERS) and whether CWT affected ADR.

**Methods** We collected the data regarding the CWT of 27 colonoscopists from NED for the 4 quarters of 2019. We compared this data against their

performance in 2016 from a previous study. We also wanted to see if there is link between CWT and ADR.

**Results** CWT ranged from 3 - 11.2 minutes in 2016 and 6.18 - 12.44 minutes in 2019, Mean withdrawal time in 2016 was 7.83 minutes (SD 2.43) compared to 9.3 minutes (SD 2.08) in 2019 ( $p=0.0002$ ). 74% of endoscopists (20/27) had CWT > 6 minutes in 2016 vs. 100% (27/27) in 2019, Longer CWT in 2019 positively correlated with the ADR ( $r=0.411$ ,  $p=0.033$ ).

**Conclusions** NED usage increased withdrawal times in colonoscopy. Longer withdrawal time was associated with higher ADR.

## OP207 WILL RANDOM 100 PROCEDURES BE ENOUGH TO ESTIMATE THE COLONOSCOPY QUALITY METRICS OF A FULL COLORECTAL CANCER SCREENING SETTING?

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**DOI** 10.1055/s-0040-1704226

**Aims** Recent guidelines suggest the possibility of evaluation of 100 procedures to estimate colonoscopy quality metrics in a cohort instead of a complete evaluation of the all cohort. We intend to compare both approaches in a colorectal cancer screening cohort.

**Methods** Prospective cohort study for evaluation of quality metrics in colonoscopies performed in a single unit in 2018-2019 with screening indication. Evaluation of quality metrics according ESGE guideline in the full cohort and in 100 procedures' sample. Recorded, demographics, Bowel preparation, polyp (PDR) and adenoma (ADR) detection rate, Cecal intubation rate (CIR), withdrawal time, polypectomy technic, complications and post-colonoscopy orientation. Automatic generated sample using SPSS. Statistical analysis with  $\chi^2$  and  $t$ -test.

**Results** 800 colonoscopies in the total cohort and a random sample of 100 procedures were compared. Comparing the 800 cohort vs. 100 sample: no differences regarding sex (male: 52.5% vs. 52%,  $p=0.3$ ); mean age (62.5 vs 62.6,  $p=0.81$ ) and risk factors for inadequate bowel preparation. Adequate bowel preparation was 91.5% vs. 90% ( $p=0.61$ ), with mean BBPS 7.37 vs. 7.14 ( $p=0.17$ ); a CIR of 95.7% vs. 95% ( $p=0.75$ ) and a mean withdrawal time of 8.3 vs. 7.9 minutes ( $p=0.79$ ). The PDR 52.5% vs 52% ( $p=0.93$ ) and ADR 40.7% vs. 37% ( $p=0.48$ ) were also similar. Appropriate polypectomy technique 97% vs. 96% ( $p=0.59$ ); Appropriate lesion description 93 vs. 89% ( $p=0.15$ ); Polyp retrieval rate 93.6% vs. 94.1% ( $p=0.85$ ); Complications 0.8% vs. 2% ( $p=0.24$ ), appropriate post-polypectomy surveillance recommendations 97.4% vs. 98% ( $p=0.72$ ) and patients experience reported as very good 80.6% vs. 81.6% ( $p=0.84$ ) were again similar.

**Conclusions** In our colorectal screening cohort, the use of just a 100-sample of procedures offers enough accuracy to infer on the quality metrics of the full colonoscopy cohort and might be used as a resource solution in cases where the full cohort cannot be assessed.

## OP208 IS ERCP TRAINING MODEL (THE BOSKOSKI-COSTAMAGNA ERCP TRAINER) USEFUL FOR TRAINEES?

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**Aims** There are few reports on ERCP training program using model. The aim of this study was to assess the usefulness of our training using the Boskoski-Costamagna ERCP Trainer.

**Methods** Between April 2016 and October 2019, a total of 326 ERCP cases underwent by 9 trainees over a period of 6 to 12 months. They are divided into 2 groups who had training with the Boskoski-Costamagna ERCP Trainer (Group 1: trainee A, B, C, D) and without the model

(Group 2: trainee E, F, G, H, I).

To evaluate the validity of our program, we analyzed the outcomes of ERCP cases performed by 9 trainees who graduated from medical school 4 to 9 years ago. We have criteria which trainees must meet before they perform ERCP.

Our program is as follows: First, trainees need to perform at least 800 cases of upper gastrointestinal endoscopy examinations. And exact gastric biopsy is required for precise movement of the scope. They observe specialist (who has performed more than 2000 ERCP cases) techniques and learn how to use devices and how to keep the stable position. In addition, they need to train with the model over 300 minutes to understand how they keep the scope position and how they use the devices. After that they start ERCP procedures under the mentorship of the specialist. The Trainees were allowed to start and performed ERCP for 10 minutes. Then the expert continued to accomplish the rest of the procedure.

**Results** The bile duct catheter insertion success rate for Group 1 (trainee A,B, C,D) were 29.5%, 45.2%, 56.7%, 63.6%, and Group 2 (trainee E,F,G,H,I) were 33.3%, 15.4%, 38.1%, 37.5%, 55.6%, respectively. PEP rate of Group 1 was 2.5% and Group 2 was 2.5%. A total completion rate of the procedures was 100%.

**Conclusions** Our training program enabled trainees to perform ERCP without decline of the treatment outcome.

## OP209 SAFETY AND EFFICACY OF A NEW SMARTPHONE-CONTROLLED VIBRATING CAPSULE FOR CHRONIC CONSTIPATION: A RANDOMIZED CONTROLLED TRIAL

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**DOI** 10.1055/s-0040-1704228

**Aims** Functional constipation (FC) is a functional bowel disorder, bringing huge financial burden, emotional and physical stress to patients. Recently, an innovative vibrating capsule (VC) has been developed, with the safety and efficacy in promoting defecation being elucidated in animal studies. Thus in the current study, we want to further validate the clinical application of VC in the treatment of FC.

**Methods** We conducted a prospective, double-blind, randomized controlled pilot study. The study included a 2-week run-in period and a 6-week treatment period, followed by a 2-week follow-up period. The randomization was based on a computer-generated list of random numbers. Efficacy analysis included amelioration of spontaneous complete bowel movement (SCBM), spontaneous bowel movement (SBM), capsule evacuation time and satisfaction level collected from diary cards. Satisfaction level were evaluated according to PAC-QOL questionnaire and PAC-SYM at each visit. Patients were continuously monitored for safety analysis at baseline and each visit.

**Results** we included 22 patients (three males) into analysis. Among them, seven, eight and seven patients received sham capsules, VCs in high or low frequency mode, respectively. For efficacy analysis, the change of mean SBM and SCBM were -1.00, 1.00, 1.00 ( $P=0.131$ ) and 0.00, 2.00 and 1.00 ( $P=0.182$ ) after six-week treatment. The mean capsule time during the whole treatment period were  $100.5 \pm 13.1$ ,  $63.6 \pm 8.6$  and  $59.8 \pm 6.6$  hours ( $P=0.007$ ), and patients in VC groups also had significant amelioration in satisfaction level ( $P=0.03$  for PAC-SYM,  $P=0.017$  for PAC-QOL). No abnormal physiological parameters, capsule retention and vibration related adverse events were observed during the whole treatment.

**Conclusions** Compared with those in the sham capsule group, patients in the VC groups had significantly shorter capsule evacuation time, improved SCBM/SBM and satisfaction level. This pilot study may strongly encourage further evaluation of the efficacy of VC as a potential alternative for FC with larger sample size and longer follow-up period.

## OP210 THE JOINT ADVISORY GROUP ON GI ENDOSCOPY (JAG) SURVEY OF UK ENDOSCOPY SERVICES: RESULTS FROM THE 2019 CENSUS

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**DOI** 10.1055/s-0040-1704229

**Aims** To understand factors related to endoscopy quality, workforce and training across services in the UK.

**Methods** The biennial census of all UK JAG-registered services was conducted in April 2019. Questions were devised by an expert panel covering domains of activity, workforce and waiting times.

**Results** The response rate was 68.4%. A total of 2,133,541 endoscopic procedures were performed in 2018. In March 2019, 31,938 endoscopy lists were delivered (mean 99.2 ± 95.7 per service).

The responding services employed 5,578 endoscopists (mean 17.32 ± 10.13, 12% non-medical), 1,366 trainees (mean 4.24 ± 6.43) and 12,680 nurses and allied health professionals (AHP) (mean 39.94 ± 284.81). There was a nursing and AHP vacancy rate of 7.29%. Region ( $\chi^2(9) = 19.18, p = 0.02$ ) and service type ( $\chi^2(2) = 78.74, p < 0.001$ ) had a significant association with vacancy. Out of the lists performed by trainees, 51.9% were for training only. An average of 7.46 (± 1.45) oesophago-gastroduodenoscopies and 3.86 (± 0.85) colonoscopies were booked for each training list. There was a significant regional influence on number of trainee lists ( $p < 0.001$ ).

In the first 3 months of 2019, waiting time targets were met by 73.7% of services for urgent cancer, 68.7% for routine waits and 63.4% for surveillance waits. There was a significant difference in meeting targets between region ( $p < 0.01$ ) and service type ( $p < 0.01$ ). The commonest reasons for this were endoscopist, physical and nursing capacity. JAG accredited services were more likely to meet routine and surveillance wait targets than unaccredited services ( $p < 0.001$ ). The mean standard DNA (Did Not Attend) rate for March 2019 was 3.48 (± 3.07).

**Conclusions** This census reflects the most extensive data regarding current UK endoscopy practice. There is evidence of service pressure, affecting wait times and training opportunities with significant regional and service-specific variability.

Friday, April 24, 2020

08:30 – 10:30

ERCP complications

Liffey Meeting Room 2

## OP211 ENDOSCOPIC MANAGEMENT OF POSTOPERATIVE PANCREATIC FISTULAS (POPF) ARISING AFTER DISTAL PANCREATECTOMY OR ENUCLEATION: A TERTIARY CARE CENTER EXPERIENCE

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**DOI** 10.1055/s-0040-1704230

**Aims** Only small series have described the endoscopic management of POPF. The purpose of this retrospective study was to describe the indications, technique and results of endoscopic treatment of POPF in our experience.

**Methods** consecutive patients with POPF receiving endoscopic retrograde cholangiopancreatography (ERCP)-based treatment between January 2010 and November 2018 were identified from a prospectively maintained database. POPF was classified according to the International Study Group of Pancreatic Fistula. The indications, the techniques and results of endoscopic drainage and the patients' outcomes were registered.

**Results** Among 9343 ERCPs performed during the inclusion period, 41 patients had POPF treated endoscopically (23 women, 18 men, mean age ± standard deviation [SD]: 65 years [±14]). Surgeries at the origin of the fistula were: distal pancreatectomy with spleen resection (n=26); spleen-preserving distal pancreatectomy (n=5); central pancreatectomy (n=3); enucleation (n=5); partial pancreatectomy (n=1); left nephrectomy (n=2), for the following indications: IPMN (n=8), pancreatic adenocarcinoma (n=7), neuroendocrine tumors (n=4), insulinoma (n=6), adrenocortical carcinoma (n=6), pancreatic metastasis (n=2), pheochromocytoma (n=1), cystadenoma (n=2), spleen artery aneurysm (n=1), serous cystadenoma (n=1), chronic pancreatitis (n=2), lymphoepithelial cyst (n=1). The median time between surgery and first ERCP was 29.0 days (SD = 132.4; range = [6-815]). Eight patients (19.5%) died from surgery-related complications. Among the 33 remaining patients, POPF complete resolution rate was 100% within an average of 120.2 days (SD = 79.6; range = [5-330]) after the first ERCP, after a mean number of ERCP performed per patient of 2.6 (SD = 1.1; range [1-6]). The mean follow-up was 747.8 days (SD = 848.0; range = [2.0-3186.0]) after the first ERCP. No late recurrence of pancreatic leak or collection occurred after the last removal of pancreatic stent.

**Conclusions** This retrospective study, the most important reported to date, shows that the endoscopic treatment of POPF resistant to medical therapy is an effective option.

## OP212 RISK ESTIMATE OF DUODENOSCOPE-ASSOCIATED INFECTIONS (DAI) IN THE NETHERLANDS

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**DOI** 10.1055/s-0040-1704231

**Aims** The likelihood of endoscopy-associated infections (EAI) is often referenced from a paper by Kimmery et al. (1993), proclaiming a risk of 1 exogenous infection for every 1.8 million endoscopies (0,00006%). Ofstead et al. pointed out that this was at least an underestimation by 6-fold, however, the original calculation is still often referred to. Multiple outbreaks of multi-resistant microorganisms (MDRO) related to contaminated duodenoscopes have been reported worldwide, leading to the assumption that the former risk calculation is indeed incorrect. We aim to calculate the duodenoscope-associated infection (DAI) risk for the Dutch ERCP practice.

**Methods** We searched and consolidated all Dutch patients reported in the literature to have suffered from a clinical infection linked to a contaminated duodenoscope between 2008 and 2018. From a national database the number of ERCP's performed per year in the Netherlands were retrieved. Actual numbers were available from 2012 to 2018. Numbers from 2008 to 2011 were assumed to be equal to 2012.

**Results** From 2008 to 2018, three MDRO outbreaks in Dutch hospitals were reported in the literature with 21 patients suffering from a clinical infection based on a microorganism proven to be transmitted by a duodenoscope. In that time period, approximately 203.500 ERCP procedures were performed. Hence, for every 1 out of 9690 procedures one patient developed a clinically relevant infection (DAI risk of 0.010%).

**Conclusions** The risk of developing a DAI is at least 30 to 180 times higher than the risks that were previously reported for all types of endoscopy-

associated infections. Importantly, the current calculated risk of 0.010% constitutes a bare minimum risk of DAI because endoscope related infections are under-reported. These data call for concerted action of medical practitioners, industry and government agencies to minimize and ultimately ban the risk of exogenous endoscope associated infections and contamination.

## OP213 POST-ERCP INFECTIONS CAUSED BY CONTAMINATED DUODENOSCOPES

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**Aims** Despite compliance to extensive reprocessing protocols, duodenoscopes have been related to multiple outbreaks of multi-drug resistant organisms (MDRO) due to persistent duodenoscope contamination. Reports of duodenoscope associated infections (DAI) usually describe outbreaks of MDRO. Outbreaks with susceptible microorganisms probably do occur, but are hard to recognize and thus underreported. We aim to find all potential DAIs that occurred in a large ERCP center within fifteen months.

**Methods** This retrospective observational study is partially based on a previous cohort study, in which all duodenoscopes in a tertiary health care center were sampled after reprocessing following ERCP procedures. Between July 2017 and October 2018, 460 duodenoscope samples were collected. This cohort was combined with patient samples. Infection is defined as positive culture from blood or liver bed (bile, drain, abscesses, etc.). Possible DAI was defined as the same microorganism at species level in the duodenoscope and patient culture within one year after the ERCP.

**Results** Data of 837 ERCPs was available. We found 20 patients (2.4%) with an infection within one year after ERCP with the same microorganism as found on the duodenoscope used during their ERCP. Thirteen of these 20 (65%) infections were gut flora, accounting for 1.6% of all 837 ERCPs. *Enterobacter cloacae* complex was the most common cultured microorganism (7 cases).

**Conclusions** We hypothesize that DAIs caused by susceptible microorganisms are still a blind spot in daily practice. In this study, 1.6% of 837 ERCP procedures was associated with an infection with gut flora potentially transmitted by contaminated duodenoscopes based on resemblance at species level. Further molecular typing is needed to definitely match microorganisms found on the duodenoscope with patient samples. These infections caused by exogenous bacteria are potentially preventable as opposed to infections caused by patients' own flora which are an inherent risk of endoscopic procedures.

## OP214 DUODENOSCOPE-RELATED INFECTIONS: AN ITALIAN PICK IN 2019

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**DOI** 10.1055/s-0040-1704233

**Aims** ERCP is performed with reusable duodenoscopes after manual and automated reprocessing. Recently, multidrug-resistant infection outbreaks associated with infected duodenoscopes have been reported. Our aim was to investigate the current Italian experience with duodenoscope-related infections and assess the criticality of the risk.

**Methods** Sixty-one Italian centers who perform ERCP were invited to complete a questionnaire about various aspects of duodenoscope-associated infection over the past 3 years.

**Results** Most centers (52, 85.2%) responded, 39 from Northern Italy (75.0%), 19 (36.6%) academic. Median number of duodenoscopes in use was 3.7/center with 39 (75.0%) using Olympus, 11 (21.2%) Pentax, 10 (19.2%) Fujifilm and 1 Storz (1.9%). Twenty-four (24, 46.2%) centers affirmed adopting reusable accessories, mainly Dormia baskets. Median number of ERCP/year was 300, with 38 (73.1%) reporting < 5% rate of ERCP-related complications, mostly pancreatitis. Thirty-six (69.2%) centers reported at least one episode of duodenoscope-related infection, with up to 25 patients/center contaminated. Isolated pathogens were *Klebsiella pneumoniae* (KP) (18, 50%), *Pseudomonas aeruginosa* (10, 27.7%) and *Escherichia coli* (8, 22.3%). Six cases of KP infection were due to carbapenemase-producing strain, while only one patient was infected with ESBL *E. coli*. In all cases but six the infective episode prolonged hospitalization. Only 1 center reported 1 death. Major problems reported by centers in reviewing duodenoscopes and local policies after the evidence of ERCP-related infections were damaged working channel and non-compliance with reprocessing procedures according to local and international guidelines. Forty-one (41, 78.9%) participants responded that duodenoscope-related infections are relevant for their daily practice and 49 (94.2%) stated that their center would agree to participate in a study on duodenoscope-related infections.

**Conclusions** These data represent the first Italian report pertaining to duodenoscope-associated infection with majority of Italian centers having experienced at least one case of ERCP-related infection. The rising number of cases reported worldwide makes it urgent to find a solution.

## OP215 STARK STUDY: MACHINE LEARNING APPROACH TO PREDICT POST-ERCP PANCREATITIS IN AN INTERNATIONAL MULTICENTER PROSPECTIVE COHORT STUDY

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DOI 10.1055/s-0040-1704234

**Aims** Post-endoscopic retrograde cholangiopancreatography(ERCP) acute pancreatitis(PEP) is ERCP most frequent complication. Predicting PEP onset risk can be determinant in reducing its incidence. However, studies conducted so far identified single risk factors that have never been used together to predict the risk effectively. The aim of our study was to build a mathematical model to predict PEP probability through machine learning techniques.

**Methods** "STARK project" is an international, multicenter,prospective cohort study developed within Pancreas 2000 Educational Program, carried out in 7 tertiary centers enrolling patients undergoing ERCP. Patients enrolled were followed-up to detect PEP.

The data was randomly split in training set(80%) and test set(20%). Two models were used to predict PEP probability: gradient boosting(GB) and logistic regression(LR). On both models the same data preparation and the same following procedure was applied: on the training set, a 10-split random cross-validation(CV) was applied to optimize parameters in order to obtain the best mean Area Under the Curve(AUC). Afterwards, the model was re-trained on the whole training set with the best parameters and then applied on the test set.

**Results** 1,150 patients were included. 70(6.1%) patients developed PEP. Model most relevant variables for the prediction of PEP were:total bilirubin level, body mass index,age, procedure time, units of alcohol/day, previous sphincterotomy.

GB model retrieved a ROC AUC in CV of 0.699±0.076 with 95% CI 0.64-0.76; ROC AUC in test was 0.671. LR model retrieved a ROC AUC in CV of 0.584 ±0.068 with 95% CI 0.58-0.63; ROC AUC in test was 0.555.

The statistical comparison between the two models in CV retrieved a p value of 0.01.

**Conclusions** This is the first study applying machine learning techniques for the prediction of PEP, with the GB model showing a significantly better performance than the LR model. The most relevant variables we observed were mostly pre-procedural variables except for the procedure time.

## OP216 COMPARATIVE STUDY BETWEEN URINASTATIN AND NAFAMOSTAT MESYLATE FOR THE PREVENTION OF POST-ERCP PANCREATITIS

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**Aims** A pancreatitis is a major complication of ERCP. Nafamostat mesylate (Futhan) and Urinastatin (Ulistin) are commonly used to prevent and treat pancreatitis in Korea. The aim of our study is to compare the efficacy of Nafamostat Mesilate and Urinastatin for post ERCP pancreatitis (PEP) prevention.

**Methods** From January 2016 to April 2019, a total of 1797 patients who underwent ERCP were analyzed. Patients received continuous infusion of 500 mL of 5% dextrose solution with 50 mg of nafamostat mesylate (1175 patients) or with 150,000 unit of Urinastatin (622 patients). PEP is diagnosed if two of the following three criteria is present; pain consistent with acute pancreatitis, raised serum amylase or lipase levels more than three times normal, and typical imaging findings.

**Results** There was a significant difference in the incidence of PEP between the Nafamostat mesylate and Urinastatin groups (4.1% vs 2.1%; odds ratio 0.5; 95% confidence interval 0.3 to 0.9, P = 0.03). Risk factors of PEP were a previous history of PEP, difficult cannulation defined as multiple pancreatic duct cannulation > 3 times or cannulation procedure time > 5 min, nafamostat mesylate use.

**Conclusions** Urinastatin prophylaxis is more effective in prevention of post-ERCP pancreatitis compared to Nafamostat mesylate.

## OP217 URINASTATIN VERSUS NAFAMOSTAT MESYLATE IN THE PREVENTION OF POST-ERCP PANCREATITIS

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**Aims** Pancreatitis is a major complication of ERCP. Nafamostat mesylate (Futhan) and Urinastatin (Ulistin) are commonly used to prevent and treat pancreatitis in Korea. However, there is no comparative study to evaluate efficacy of these two drugs. The aim of our study is a comparison of the efficacy of Mesilate and Urinastatin for PEP prevention.

**Methods** From January 2016 to Aprile 2019, a total of 1797 patients who underwent ERCP were analyzed. Patients received continuous infusion of nafamostat mesylate (1175 patients) or with 150,000 unit of Urinastatin (622 patients). Serum amylase and lipase levels were checked before ERCP, 4 and 24 hours after ERCP, and when clinically indicated. Patients usually present within a few hours with severe epigastric pain, often radiating to the back, nausea and mild fever with raised pancreatic enzyme levels. Pancreatitis is diagnosed if two of the following three criteria is present; pain consistent with acute pancreatitis, raised serum amylase or lipase levels more than three times normal and (or) typical imaging findings. The incidence of PEP ranges from 3 to 10%. Patient-related risk factors include previous history of PEP, suspected sphincter of Oddi dysfunction, female sex, younger patient age, normal serum bilirubin levels, history of acute recurrent pancreatitis, pregnancy, and cannabis use. Procedure related factors, such as difficult cannulation (multiple attempts or duration > 5-10 min) and large-balloon dilatation of the papilla of an intact biliary sphincter (especially for short duration (< 1 min) significantly increase the risk of PEP.

**Results** There was a significant difference in the incidence of PEP between the Nafamostat mesylate and Urinastatin groups (4.0851% vs 2.0900%, respectively; OR: 0.501295, 95% CI: 0.2694 to 0.9323, Z statistic: 2.181, P value: 0.0292).

**Conclusions** Urinastatin prophylaxis is more effective in prevention of post-ERCP pancreatitis compared to Nafamostat mesylate.

## OP218 A RETROSPECTIVE STUDY TO EVALUATE OPTIMAL PROCEDURE TIME TO PREVENT POST-ERCP PANCREATITIS USING DECISION TREE ANALYSIS

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**DOI** 10.1055/s-0040-1704237

**Aims** Pancreatitis after endoscopic retrograde cholangiopancreatography (ERCP) is a major concern among procedure-related adverse events. Although several risk factors were identified from previous studies, there was no study for optimal procedure time to prevent post-ERCP pancreatitis (PEP). We reviewed ERCP database to evaluate the association between procedure time and PEP.

**Methods** Database for ERCP procedure between September 2012 and July 2019 at Kyungpook National University Chilgok Hospital was prospectively reviewed. We enrolled patients with naïve papilla who underwent ERCP. Risk factors for PEP was evaluated and decision tree analysis was conducted to evaluate the association between procedure time and the occurrence of PEP.

**Results** We analyzed 896 consecutive patients with naïve papilla. Among them, PEP occurred in 61 patients (6.8%). The times for overall procedure and selective biliary cannulation in patients with PEP were longer than in those without PEP (26.2±11.6 vs. 20.2±11.1 minutes,  $P < 0.001$  and 12.5±9.0 vs. 8.1±6.6 minutes,  $P < 0.001$ ). Decision tree analysis revealed that overall procedure time of less than 20 minutes and selective biliary cannulation time of less than 6 minutes were decisive factors for the reduced risk of PEP with adjust P value of  $< 0.001$  and 0.011, respectively.

**Conclusions** According to our study results, we recommend that the procedure time for selective biliary cannulation might be not exceed 6 minute to avoid the occurrence of PEP and additional preventive management would be required in case of longer procedure time.

## OP219 HEMORRHAGIC RISK IN POST AMPULLECTOMY PATIENTS ON ANTITHROMBOTIC THERAPY

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**DOI** 10.1055/s-0040-1704238

**Aims** Endoscopic ampullectomy (EA) can cure ampullary adenomas. However, the morbidity remains high including 10% risk of bleeding. The primary objective of this single-centre study was to determine whether patients treated with antiplatelet or anticoagulant therapy (VKA) had increased morbidity or mortality risk.

**Methods** Between May 1999 and June 2019, 309 patients treated by EA for an ampullary tumor were included prospectively in a database. For patients on antithrombotic treatment, therapy was systematically suspended following a predetermined protocol. Post-procedure bleeding was considered significant if there was clinical evidence or a drop in hemoglobin  $> 2\text{g/dL}$ .

**Results** Of the 309 patients, 45 (14.5%) (Group A) were taking an antithrombotic drug (15 antiplatelet treatment, 28 VKA, 2 others); 264 (85.4%) patients (Group B) were not on antithrombotic treatment. Both groups were

comparable in terms of lesion size, the presence of a laterally spreading tumor component, the presence of adenocarcinoma on the histological report and the use of preventative measures for hemostasis. The mortality was 0.3% ( $n=1$ ), due to perforation following hemostatic procedure. Overall morbidity was 24.6%, with a statistically significant ( $p < 0.02$ ) greater risk in Group A (44%) compared with Group B (21%). There was no significant difference between the two groups in the rate of non-hemorrhagic complications. Bleeding complications were significantly more frequent ( $p=0.001$ ) in Group A: 14 (32%) versus 31 (11.7%) in Group B. In all cases bleeding resolved with observation or repeat endoscopic treatment. The average length of stay was significantly higher in Group A ( $p = 0.03$ ).

**Conclusions** In this study, patients undergoing antithrombotic treatment had significantly higher rates of secondary bleeding, transfusion and haemostatic endoscopic procedures after EA, but did not demonstrate a higher risk of non-hemorrhagic complications or mortality compared to patients not on antithrombotic drugs. EA remains a valid alternative treatment to surgical resection for patients on antithrombotic drugs.

## OP220 RISK FACTORS FOR FAILURE AND COMPLICATIONS OF ENDOSCOPIC PAPILLARY LARGE BALLOON DILATION (EPLBD) IN THE CLEARANCE OF DIFFICULT BILE DUCT STONES

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**DOI** 10.1055/s-0040-1704239

**Aims** To determine risk factors for failure and complications of EPLBD in the clearance of difficult bile duct stones.

**Methods** Prospective cohort study.

**Patients** With difficult bile duct stones defined according to stone and anatomic bile duct features.

**Intervention** Sphincterotomy followed by large balloon dilation (ES-LBD) (Balloon diameter: 12-20mm).

**Failure** Unsuccessful clearance of difficult bile duct stones in a single procedure.

**Complications** Appeared within 30 days post EPLBD.

**Results** There were included 188 patients (age:  $73.74 \pm 10.4$  years old, 41.5% women) who underwent ES-LBD due to difficult choledocholithiasis ( $n=181$ ) or anatomic biliary problems ( $n=7$ ). Diameter of largest stone:  $13.3 \pm 4.3\text{mm}$ . Distal common bile duct (CBD) diameter thinner than proximal CBD: 8%. Failure rate: 13.3%. In a multivariate analysis, the stone diameter larger than distal CBD/sphincterotomy: OR = 3.52 (1.38 - 8.99 CI95%) and the diameter of largest stone  $\geq 13\text{mm}$ : OR = 5.03 (1.53 - 16.52 CI95%) were associated to failure. Complication rate: 11.2%. Hemorrhage was the most frequent complication: 7.98% although greater than one third of them were mild and resolved during the same ERCP. The age  $< 78$  years old: OR = 3.07 (1.04 - 9.01 CI95%); distal CBD diameter thinner than proximal CBD: OR = 11.73 (3.02 - 42.9 CI95%), and the use of a balloon diameter  $\geq 15\text{mm}$ : OR = 5.54 (1.55 - 19.69 CI95%) were associated to the appearance of complications.

**Conclusions** The stone diameter larger than distal CBD/sphincterotomy and the diameter of largest stone  $\geq 13\text{mm}$  are risk factors for failure of endoscopic papillary large balloon dilation in the clearance of difficult bile duct stones. In the same way, the age  $< 78$  years old, distal CBD diameter thinner than proximal CBD and the use of a balloon diameter  $\geq 15\text{mm}$  are risk factors for the appearance of complications.

## OP221V SUCCESSFUL CLOSURE OF A LARGE TYPE I ERCP-RELATED PERFORATION WITH AN OVER-THE-SCOPE CLIP (OTSC) DEVICE: A VIDEO REPORT

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DOI 10.1055/s-0040-1704240

Duodenal perforations during ERCP are associated with high morbidity and mortality rates. Traditionally, duodenal perforations caused by the duodenoscope itself (Stapfer type I) have been treated surgically. The OTSC is already recommended for the treatment of iatrogenic perforations, but there is scarce data about its use related to ERCP-related duodenal perforations.

We present the case of a 91-year-old man, diagnosed with pancreatic head cancer, who underwent biliary stenting through ERCP. During the removal of the prophylactic pancreatic stent, a full-thickness defect of 20mm diameter was visible in the superior duodenal flexure. An OTSC successfully closed the perforation without further intervention.

## OP222V DUODENAL PERFORATION DUE TO PROPHYLACTIC PANCREATIC STENT

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An ERCP was performed in 85 years old woman due to choledocholithiasis. Precut pancreatic sphincterotomy was performed to allow biliary cannulation. A stone was removed with Fogarty balloon and plastic stent of 5cmx5Fr was placed to prevent acute pancreatitis.

After 2-days, the patient presented abdominal pain and inflammatory markers in blood test. A CT scan showed duodenal perforation due to pancreatic stent. An upper-endoscopy visualized the pancreatic stent coming out from papilla and nestling in contralateral duodenal wall. A hole of 5mm was exhibited after the stent was removed with foreign-body forceps. The drilling was closed with OTSC clip.

Friday, April 24, 2020

08:30 – 10:30

EUS-guided interventions

Liffey Meeting Room 3

## OP223 ENDOSCOPIC ULTRASOUND-GUIDED ANGIOTHERAPY WITH COMBINED COILS AND GLUE INJECTION FOR GASTRIC VARICES: AN EUROPEAN PILOT STUDY

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**Aims** Gastric varices (GV) represent 20% of patients with portal hypertension. Endoscopic cyanoacrylate injection is recommended in bleeding gastric varices.

Nevertheless, it's associated with more than 25% of re-bleeding and serious adverse events, mainly glue embolization. Endoscopic ultrasound (EUS)-guided and combined coil and glue injection provide a new alternative treatment for bleeding varices.

**Methods** This is a retrospective analysis of EUS-guided coil and glue injection for gastric varices bleeding from 10/2013 to 03/2019. We used linear therapeutic ultrasound endoscopes (Pentax EG-3870UTK and EG-38-110UT) without fluoroscopic control. The procedures were performed on general anesthesia and antibioprophyllaxia. We injected cyanoacrylate combined with Lipiodol after the application of one or many coils. A control EUS was done at

4 weeks. The primary outcomes were varices obliteration and the need of reintervention.

**Results** 33 patients were treated by EUS-guided coil and glue injection, 26 (78%) for recent bleeding varices and 7 (22%) for primary prophylaxis. There was 60% of males and the mean age is 61 years (28-84). Technical success was achieved in all patients (100%). The mean number of coil was 1.2 (1-3 coils) and the mean volume of glue injected was 1.5 mL (0.5-3 mL). Complete obliteration was confirmed for the 33 patients (100%), 30 after one session (91%), 2 after 2 sessions and one after 4 sessions. Post-procedure pain occurred in 3 patients (9%) during 1 to 7 days. No symptomatic embolization was observed with a mean follow-up of 436 days (21-1818).

**Conclusions** EUS-guided combined coil and glue injection for gastric and ectopic varices appears to be a feasible and highly effective technique with less re-bleeding and complication than the classic endoscopic glue-only injection.

## OP224 ENDOSCOPIC ULTRASONOGRAPHY-GUIDED GASTROENTEROSTOMY IS A PROMISING ENDOSCOPIC TECHNIQUE FOR PALLIATIVE TREATMENT OF GASTRIC OUTLET OBSTRUCTION. A MULTICENTER NATIONAL EXPERIENCE

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DOI 10.1055/s-0040-1704243

**Aims Background** Endoscopic ultrasound (EUS)-guided gastrojejunostomy (EUS-GJ) is an alternative for treating gastric outlet obstruction (GOO) in expert centers. It remains unknown if these results may be reproducible in less experienced institutions.

**Aims** To conduct a nationwide study to evaluate the outcomes of EUS-GJ at institutions with no experience on EUS-GJ.

**Methods**

**Study period:** 07/2017-11/2019.

**Inclusion criteria:** Patients undergoing EUS-GJ for palliative therapy of malignant GOO.

**Exclusion criteria:**

- 1) EUS-GJ performed by a non-malignant condition;
- 2) Patients from institutions with experience in EUS-GJ. **Technique:** Nasobiliary tube for irrigation of jejunum+EUS-guided hot-axios.

**Outcomes:**

- 1) Technical-success: successful hot-axios placement for EUS-GJ;
- 2) Clinical-success: ability to resume oral intake after EUS-GJ; and
- 3) Adverse events(AEs).

All institutions performing EUS-GJ in our country participated in the study and all attempts of EUS-GJ performed were recorded (intention to treat analysis).

**Results** 64 patients (age 72±11years; male:61%) from 8 institutions, meeting study criteria, were included. Aetiology for GOO: pancreatic/gastric cancer (42 patients:66%)/(22 patients:34%). The most common location of obstruction was second/third portion of duodenum (30/64=47%). A 10x20 mm LAMS was inserted in 42/64 patients (66%) and a 10x15 mm LAMS was placed in 22/64 (36%). Technical success: 62/64(97%;IQR: 89-99%) patients; clinical success: 61/64(95%;IQR:87-98%); adverse events: 5/64(8%;IQR:3-16%), the majority during the procedure (Median time to AE: 0 days;IQR:0-17;range:0-154):

- a) **Early-AEs:** Perforation in 1/64(1.6%), requiring endoscopic treatment; bleeding: 1/64(1.6%), requiring surgery; death in 1/64(1.6%) due to gastric aspiration;

b) **Delayed-AEs:** stent migration in 2/64(3.2%), occurring at 17 and 154 days, respectively and being solved endoscopically. No stent obstruction was found during follow-up (0%). Median follow-up time of the overall cohort was 56 days(IQR:0.5-141.5;range:0.5-514).

**Conclusions** EUS-GJ appears to be technically feasible, clinically effective and safe for treating malignant GOO in institutions with no prior experience. AEs are infrequent, mostly amenable for endoscopic repair, and tend to occur within the procedure.

## OP225 PATENCY OF EUS-GUIDED GASTROENTEROSTOMY IN THE TREATMENT OF MALIGNANT GASTRIC OUTLET OBSTRUCTION

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DOI 10.1055/s-0040-1704244

**Aims** Endoscopic ultrasonography-guided gastroenterostomy (EUS-GE) using a Lumen Apposing Metal Stent (LAMS), is a novel, minimally invasive technique in the palliative treatment of malignant gastric outlet obstruction (GOO). Several studies have demonstrated feasibility and safety of EUS-GE. However, evidence on long-term durability is limited. The aim of this study is to evaluate long-term patency of EUS-GE with a LAMS in the treatment of malignant GOO.

**Methods** A multicenter international retrospective study was performed in seven centers from four European countries. Patients who underwent EUS-GE with a LAMS (Hot AXIOS stent) between March 2015 and March 2019 for palliative treatment of symptomatic malignant GOO were included. Primary endpoint was recurrent obstruction, secondary endpoints were technical success, clinical success, adverse events and survival.

**Results** A total of 45 patients (48.9% male; mean age 69.9 ± 12.3 years) were included in this study. Median follow-up was 59 days (IQR 41-128). Recurrent obstruction after initial clinical success occurred in two patients (6.1%), after 33 and 283 days of follow-up. Technical success was achieved in 38 (84.4%) patients. Clinical success was achieved in 33 (73.3%) cases. Adverse events occurred in 12 (26.7%) patients, five (11.1%) of which were fatal.

**Conclusions** A total of 45 patients (48.9% male; mean age 69.9 ± 12.3 years) were included in this study. Median follow-up was 59 days (IQR 41-128). Recurrent obstruction after initial clinical success occurred in two patients (6.1%), after 33 and 283 days of follow-up. Technical success was achieved in 38 (84.4%) patients. Clinical success was achieved in 33 (73.3%) cases. Adverse events occurred in 12 (26.7%) patients, of which five (11.1%) were fatal.

## OP226 LUMEN-APPPOSING METAL STENTS (LAMS) VERSUS FULLY COVERED SELF-EXPANDABLE METAL STENT (SEMS) IN ENDOSCOPIC ULTRASOUND-GUIDED CHOLEDOCHODUODENOSTOMY (EUS-CDS) FOR DISTAL MALIGNANT BILIARY OBSTRUCTION (DMBO)

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DOI 10.1055/s-0040-1704245

**Aims** EUS-CDS is an alternative to PTBD in unresectable distal MBO after failed ERCP. Electrocautery enhanced delivery system (EC-LAMS) facilitates access to the target lumen simplifying the classic multi-step procedure of EUS-CDS. It is unknown if LAMS improve results obtained with SEMS. We sought to compare LAMS vs SEMS for EUS-CDS after failed ERCP in DMBO.

**Methods** This unicentric retrospective cohort-study was conducted on patients who underwent LAMS or SEMS placement by EUS-CDS for DMBO after failed ERCP between January-2011/January-2019. The primary endpoint was the clinical success after stent placement (reduction in serum *bilirubin levels* by at least 50% over baseline). Secondary endpoints included median time until event (death or reintervention), adverse events, recurrence and secondary interventions.

**Results** 57 patients were included in our study 37 LAMS and 20 SEMS were placed (► **Table**). Short-term clinical success was achieved in 94,6% (LAMS group) compared to 100% (SEMS group), with no *difference* between *groups* ( $p < 0,67$ ). The median time until event was 92.5 days in LAMS group and 77 days in SEMS group, also without differences. There were also no differences in the rates of adverse events, recurrence and secondary interventions.

**Conclusions** EUS-CDS represents an effective therapeutic option for patients with distal MBO, without differences between the use of LAMS and SEMS in terms of clinical success, adverse events, recurrence and secondary interventions. Even if the use of EC-LAMS simplifies the classic multi-step procedure, however, increased costs over the classical SEMS do not appear to translate into improved outcomes. Therefore, further studies are needed to establish the cost-effectiveness of LAMS for EUS-CDS.

► **Tab. 1**

	LAMS (n=37)	SEMS (n=20)	p
Edad, median (IQR)	81,8(69,9-84,6)	80,2(67,6-86,3)	0,97
Underlying disease, n(%) -Pancreatic adenocarcinoma -Other	29(78,4) 8 (21,6)	17(85%) 3 (15%)	0,40
ASA Group, n (%) -I/II -III/IV Not available	9(24,3%) 25 (67,7%) 3 (8,1%)	11(55%) 6 (30%) 3(15%)	0,04

## OP227 EUS-GUIDED INTRAHEPATIC ACCESS FOR RETROGRADE, ANTEGRADE OR TRANSGASTRIC BILIARY DRAINAGE: INDICATIONS, EFFICACY AND SAFETY FROM AN 8-YEAR TERTIARY CENTRE EXPERIENCE

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DOI 10.1055/s-0040-1704246

**Aims** Intrahepatic access for EUS-guided biliary drainage (IH-EBD) still lacks convincing evidence on advantages and risks over comparators. We revised the 8-year experience of a tertiary, academic, referral centre.

**Methods** All consecutive IH-EBDs performed between 2012-2019 were retrospectively included. Variables are reported as proportions or median [interquartile range].  $\chi^2$ -squared, Kruskal-Wallis test and Kaplan-Meier curves were used.

**Results** 104 IH-EBDs were identified [(malignancies=87(83.7%); failed ERCP=81(77.9%); post-surgical anatomy=23(22.1%)]. Distal, hilar and anastomotic strictures represented 50%, 28.9% and 14.4% of indications.

16 transhepatic ERCP-*rendez-vous* (RVs), 43 transhepatic antegrade biliary stentings (ASs) and 45 hepatico-gastrostomies (HG) were identified.

Overall technical success was 89.4%, while clinical success (lowering bilirubin or management of choledocholithiasis) was 94%. Using the ASGE lexicon, overall, severe and fatal complication rates were 16.7%, 3.0% and 0.9% respectively. Median hospital stay was 7[2-10] days, 4.5[1-9] in case of no complications. Stent dysfunction occurred in 17.1% after a median of 103.5[42.5-168.0] days. 6-months probability of stent-dysfunction-free survival was 72%.

Comparing the 3 techniques, benign diseases were more prevalent among RVs ( $p=0.0004$ ), while hilar/anastomotic strictures were mainly managed through HGs ( $p<0.0001$ ). Technical failures were higher among RVs. No difference in clinical success or severe adverse events was identified. A lesser bilirubin decrease was noticed among HGs ( $\geq 50\%$  decrease in 53.3% vs. 66.7% and 96% of RVs and ASs;  $p=0.007$ ), justifiable by the significantly higher rate of disconnected ducts (53.5% vs. 6.2 and 2.2%,  $p<0.0001$ ). A trend towards reduced stent dysfunction was noted when HGs were created with half-covered purpose-specific stents ( $N=17[38\%]$ ) vs. older stents (6.7% vs. 31.6%,  $p=0.0789$ ).

**Conclusions** The intrahepatic route for EUS-guided biliary drainage in failed ERCPs or surgically altered anatomy has a good clinical efficacy, a relatively low dysfunction rate and an acceptable safety profile. These results seem especially valuable for indications in which the only alternative would be percutaneous drainage.

## OP228 INDWELLING DOUBLE-PIGTAIL PLASTIC STENTS FOR THE TREATMENT OF DISCONNECTED PANCREATIC DUCT SYNDROME-ASSOCIATED PERIPANCREATIC FLUID COLLECTIONS: LONG-TERM SAFETY AND EFFICACY

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DOI 10.1055/s-0040-1704247

**Aims** Transmural indwelling double-pigtail stents (DPS) are recommended for patients with disconnected pancreatic duct syndrome (DPDS) and peripancreatic fluid collections (PFC). Long-term safety and efficacy of indwelling DPS placement were evaluated.

**Methods** Medical files of patients treated with transmural DPS for DPDS-associated PFC (walled-off necrosis or pseudocysts due to acute or chronic

pancreatitis) and minimum follow-up of 48 months were reviewed. Overall, early (< 28 days) and late complication rates were calculated. Long-term outcomes (efficacy and collection recurrence) were assessed.

**Results** From 2002 to 2014, 116 patients [86 (74.1%) men; age 48.1 $\pm$ 15 years; 57 (49.1%) chronic pancreatitis] with complete pancreatic duct rupture confirmed by MRCP or ERCP were identified. They underwent 175 transmural drainages (150 (85.7%) transgastric access; 2 DPS deployed in 71 (40.5%) of the cases). Sixty-nine (59.4%) of the initial drained collections were pseudocysts (94.2 $\pm$ 50mm) and the main drainage indication was infection (55/116; 47.4%). Mean follow-up was 80.6 $\pm$ 34.4 months. Per intervention complication rates were 20.5% (36/175), 11.4% (20/175) and 9.1% (16/178) for overall, early and late complications, respectively. Among early complications, 15/20 occurred peri-interventionally (bleeding and pneumoperitoneum) and 8 required further intervention or transfusion. Among late complications (stent-induced ulcer, bleeding, organ compression and abscess) only 2/16 required additional intervention other than stent removal. No death related to the procedure occurred. In per patient analysis, the complication rate was 1 per 21.6 patients-years of follow-up and 1 per 48.7 patients-years of follow-up regarding late complications. Migration (spontaneously or intended) of initial DPS occurred in 86/116 (74.1%) patients (42 $\pm$ 36.7 months). Early migration (< 6, < 12 and < 24 months) was associated with an increased risk of collection recurrence ( $p\leq 0.02$ ). At the end of follow-up endoscopic treatment was considered unsuccessful in 6/116 (0.05%) patients.

**Conclusions** Indwelling DPS for DPDS are associated with a low risk of long-term complications and a lower risk of PFC recurrence.

## OP229 IS LUMEN-APPPOSING METAL STENTS MORE EFFECTIVE THAN PLASTIC STENTS FOR THE MANAGEMENT OF PANCREATIC FLUID COLLECTIONS: AN UPDATED SYSTEMATIC REVIEW AND META-ANALYSIS

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DOI 10.1055/s-0040-1704248

**Aims** Recently, a new type of metal stent, named lumen-apposing metal stents (LAMS), has been designed to manage pancreatic fluid collections (PFC), and a few studies have reported its efficacy and safety. Therefore, we conducted this meta-analysis to investigate the role of LAMS for PFC.

**Methods** We searched the studies from Pubmed, Medline, Embase and Cochrane databases from inception to May 2019. We extracted the data and analyzed the technical success, clinical success and the adverse events (AEs) of LAMS to evaluate its efficacy and safety.

**Results** Twenty studies with 1534 patients were included. The pooled technical success, clinical success, AEs rate of LAMS for PFC were 96.2% [95% confidence interval (CI): 94.6%-97.4%], 86.8% (95% CI: 83.1%-89.8%), 20.7% (95% CI: 16.1%-26.1%), respectively. Eight studies including 875 patients compared the clinical outcomes of LAMS with plastic stents. The pooled RR of technical success and clinical success for LAMS and plastic stent were 1.01 (95% CI: 0.98-1.04,  $P=0.62$ ), 1.06 (95% CI: 1.01-1.12,  $P=0.03$ ), respectively. As for the overall AEs, the pooled RR was 1.51 (95% CI: 0.67-3.44,  $P=0.32$ ).

**Conclusions** Our current study revealed that LAMS has advantages over plastic stents for PFC, with higher clinical success rate and lower complication rate of infection and occlusion.

## OP230 THE ON-DEMAND NUMBER OF NECROSECTOMY SESSIONS DURING LUMEN APPOSING METAL STENTS DRAINAGE IN WALLED-OFF PANCREATIC NECROSIS CANNOT BE PREDICTED

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**DOI** 10.1055/s-0040-1704249

**Aims** To assess the possible prediction for the need of necrosectomy according to the amount of necrosis inside the WOPN assessed during endosonography (EUS).

**Methods** This is a single center prospective analysis at a single tertiary referral center. There were enrolled patients with symptomatic WOPN (pain, infection or gastric or biliary outlet obstruction) with more than 4 weeks after the onset of acute pancreatitis. The amount of necrosis was assessed by EUS in the session of LAMS placement. There were noted the clinical success regarding LAMS placement, the number of necrosectomies, the need for additional drainage (pigtail stents), the complications and the survival rate. The need for necrosectomy was performed on-demand when fever or inflammatory biological markers raised after LAMS placement. The patients were discharged when the inflammatory markers normalized and they were followed-up monthly by abdominal ultrasound and by CT scan at three months.

**Results** There were 28 patients included and more than half were infected. The median size of the PFC was 108mm (IQR: 81-146). LAMS was successfully placed in all patients, without immediate complications following the procedure. Necrosis was present in all patients and one third had more than 50% of the WOPN with necrosis. Necrosectomies were performed in 25/28 (89.2%) patients. The median number of endoscopic debridement sessions was 2 (IQR: 1-4). There was no statistically significant association between the size of the PFC and number of necrosectomies performed (Spearman's *r* coefficient was .153, *p*=0.427). The median duration until stent removal was 36 days (IQR: 24 - 55 days). Overall, PFC resolution at 3 months follow up was noted in 24/29 (85.7%) patients.

**Conclusions** The size of WOPN and the amount of necrosis prior LAMS drainage of WOPN cannot predict the need for on-demand necrosectomy sessions.

## OP231 EUS GUIDED RFA OF PNETS: RESULTS OF A PROSPECTIVE STUDY IN 11 PATIENTS

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**DOI** 10.1055/s-0040-1704250

**Aims** Radiofrequency tumor ablation (RFA) is currently used routinely for different primary tumors or metastases. We report our EUS-guided experience of EUS guided RFA for grade 1 PNETs and less than 30 mm in diameter.

**Methods** From September 2016 to January 2019, we treated 12 PNETs in 11 patients (8H, 3F) average age 65.7 years. The diagnosis of TNEP was obtained by a EUS-FNA. The average lesion size was 19.5 mm and all tumors were non-secreting, 2 were partially cystic. The EUS guided RFA was realized with the Star-Med system (Taewoong compangny) with a 19G needle.

**Results** 3 complications occurred, it was oedematous pancreatitis of the pancreatic tail and 2 pseudo-cystic collections that required a complementary drainage under EUS guidance. The median follow-up was 22 months. A complete response (objectified by the presence CT scan of an avascular area that does not enhance) was observed after a single session of RFA in 10 of 12 lesions. A second session was necessary for 2 other PNETs. Currently, all lesions treated are considered in complete answer either they have disappeared (6/12) or they are necrotic (zone avascular not elevating on the CT injected).

**Conclusions** EUS guided RFA is an effective treatment for grade 1 PNETs and less than 25 mm, it must now be discussed as an alternative to surgery in selected patients.

## OP232 ENDOSCOPIC ULTRASOUND-GUIDED RADIOFREQUENCY ABLATION (EUSRFA) AS FOCAL THERAPY FOR PANCREATIC METASTASES FROM RENAL CELL CARCINOMA: A MONOCENTRIC EXPERIENCE

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**DOI** 10.1055/s-0040-1704251

**Aims** Pancreatic metastases (PM) from renal cell carcinoma (RCC) are rare but associated with good prognosis. The usual management of PM is surgery or tyrosine kinase inhibitor (TKI) with sides effects. Endoscopic radiofrequency ablation (EUSRFA) is an innovative approach to focally treat deep metastasis and could be a relevant technic to control PM from RCC.

**Methods** We report a monocentric, prospective analysis for local control and toxicity in patients treated by EUSRFA for progressive PM from RCC. EUSRFA was performed under general anesthesia, with a linear EUS scope and a 19 G EUSRFA needle.

**Results** 10 pts were recruited between May 2017 and December 2018. Median age was 72y, 5/10 female. Median number of PM was 2 [1-3]. PM localizations was: head in 40%, body 40%, tail 20% and average size was 14 mm. Six of 10 had other mRCC spread, . We performed 20 EUSRFA procedures over 17 PM. Median number of EUSRFA sessions was 2 per patient [1-3]. With a median follow up of 18 months [4.6-35.6], 58.8% of treated PM was evaluated as complete response (10/18), 17 % as partial response (3/10) and 17 % as stable disease (3/10) at the last CT-evaluation. Only two patients were considered as progressive disease and PM focal control was 89%. Regarding sides effects, 1 patient treated concomitantly with TKI developed a paraduodenal abscess 2 months after EUSRFA and was drained endoscopically and 1 with biliary prothesis developed hepatic abscesses few days after EUSRFA. Regarding the size, all PM treated with diameter of  $\leq$  20mm was locally control versus only 75% of PM > 20mm.

**Conclusions** EUSRFA is feasible and displays an excellent local control for PM. Without any major side effect, it could be a valuable option, less morbid than pancreas resection, for well selected patients with progressive PM.

## OP233V ENDOSCOPIC ULTRASOUND GUIDED GASTROJEJUNOSTOMY FOLLOWED BY ERCP THROUGH AXIOS STENT USING PEDIATRIC COLONOSCOPE

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**DOI** 10.1055/s-0040-1704252

The indication was adenocarcinoma of the pancreatic head with duodenal infiltration, after ERCP (cholestasis). A standard endoscope was used to pass a guidewire and a catheter through the narrowing duodenal bulb to inject a contrast into the small intestine to endosonographic visualization of the Treitz ligament. Then, a gastrojejunostomy by Axios was created. After two weeks

the patient without symptoms of gastrointestinal obstruction, presented signs of advanced cholestasis. The procedure of old plastic stent removal and SEMS implantation was performed through the lumen of Axios by pediatric colonoscopy. Finally, Axios was removed. At 4<sup>th</sup> week without jaundice or gastrointestinal obstruction.

### OP234V DISCONNECTED PANCREATIC DUCT SYNDROME (DPDS): ENDOSCOPIC REPAIR BY MEANS OF STAGED EUS-GUIDED PANCREATICO-GASTROSTOMY (EUS-PG) COMBINED WITH ERCP

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**DOI** 10.1055/s-0040-1704253

**Introduction** DPDS requires distal pancreatectomy to avoid persistent/recurrent collections/pancreatitis/fistulas. We describe endoscopic reconnection, novel alternative.

**Description** Relapsing pancreatitis. EUS-pancreatography confirms DPDS with communicating pseudocyst. 3-Stage treatment: drainage, recanalization and remodeling. EUS-PG and transpapillary pseudocyst drainage by ERCP with dual-SEMS (Stage-1). Partial inward migration of PG-SEMS at 1-week requires distal repositioning through another EUS-guided puncture. 2-months later: pseudocyst resolution, SEMS removal, antegrade rendezvous recanalization of DPDS with through-and-through double-pig-tail (Stage-2). 9-months later, transpapillary-transgastric double-pig-tail exchanged for transpapillary intraductal 10F-plastic stent across DPDS pending definitive removal (Stage-3).

**Conclusions** Patient remains asymptomatic since drainage (19-months). DPDS is reconnected, awaiting final transpapillary stent removal.

Friday, April 24, 2020

11:00 – 13:00

Unlock en-bloc 2

Liffey Meeting Room 2

### OP235 COLONIC ESD WITH DOUBLE-CLIP TRACTION A REVOLUTION COMING FROM EUROPE!

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**Aims** ESD is the standard of care for removing large colorectal superficial lesions in Japan. In Europe, it is still debated due to good results of piece-meal EMR and mediocre results published so far by the Western teams. Colonic location is particularly challenging because of the thinness of the submucosa, the fold anatomy, poor maneuverability of the scope due to loops and respiratory movements. Our team has developed a counter-traction strategy using two clips and a dental rubberband (Double Clip Traction (DCT) strategy) to facilitate the procedure in a pilot study. The purpose of this study was to analyze the results of the systematic application of this strategy over 3 years of cases of consecutive colonic ESD.

**Methods** Prospective cohort study including all cases of colonic ESD performed consecutively using DCT in 3 French expert centers.

**Results** Between 03/2017 and 09/2020, 969 colorectal ESD were performed in 3 French expert centers. 621 lesions were included (exclusion of 262 rectal lesions, 51 recurrent lesions and 35 appendiceal lesions) and resected with DCT ESD. Mean lesion size was 52 x 41.4 mm. 69.2% of the lesions were

located upstream of the left angle (transverse or right colon). 14% of lesions were polypoid, 57.4% were granular LST, 28% were non-granular LST. Mean duration of procedure was 61 min for a mean speed of 38 mm 2/min.

En bloc, R0 and curative resection rates were 94.4%, 84% and 81.6%, respectively.

Perforation rate and post-procedural bleeding occurred respectively in 5% and 4.3%. Only 2 patients (0.3%) had emergency surgery for perforation.

**Conclusions** Colonic ESD is effective and safe in France thanks to the systematic use DCT strategy. Our results allow to consider a randomized controlled study comparing DCT ESD and piece-meal EMR for large benign colonic lesions.

### OP236 COLORECTAL ENDOSCOPIC SUBMUCOSAL DISSECTION: DO WE MEET THE RECOMMENDATIONS OF THE ESGE? A SPANISH MULTICENTRE PROSPECTIVE STUDY

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**DOI** 10.1055/s-0040-1704255

**Aims** The ESGE has recently proposed some quality metrics concerning CR-ESD: En bloc resection rates >90%, perforation rate < 3% and the need for surgery because of complications < 1%.

**Methods** Consecutive patients were enrolled in a prospective multicentre Spanish CR-ESD registry since January 2016 to August 2019. Since the ESGE recommends a minimum case load of 25 ESD procedures per year, the quality metrics were analysed in centres that met this proposed standard.

**Results** We recruited 896 CR neoplasms submitted for an ESD and performed by members of the ESD interest group of the GSEED Endoscopic Resection Working Group. Seven centres met the standard of performing > 25 CR-ESD/year. The mean CR-ESD/year values were 76 (hospital A), 66 (B), 56 (C), 34 (D), 32 (E), 32 (F), and 26 (G). The case load of CR-ESD for this period was: 244 (A), 192 (B), 121 (C), 63 (D), 57 (E), 71 (F) and 59 (G), respectively. Finally, 807 CR-ESD were analysed. The en bloc resection rate was: 96%, 89, 81, 96.8, 64.9, 87.3 and 76.3, respectively. The intraprocedural perforation rate was: 29.1%, 1, 14, 3.2, 14, 14.1 and 8.5%, respectively. The delayed perforation rate was: 2.1,

1, 5.2, 0, 5.4, 3.1 and 3.5%, respectively. The need for surgery because of perforation was: 2.9%, 1, 1.7, 0, 3.5, 2.8 and 3.4%, respectively. Additionally, the need for surgery because of bleeding was: 0.4%, 0.5, 0, 0, 1.8, 1.4 and 1.7%, respectively.

**Conclusions** Recommendations according the ESGE position statement were met in 2 centres concerning the en bloc resection rate (A and D). The statement regarding the overall perforation rate was met in 1 case (B), and the recommendation concerning the need for surgery was met in 1 hospital (D). None of them fulfilled all the quality criteria although 2 of them were close to meet them.

## OP237 CLINICAL OUTCOMES OF ENDOSCOPIC SUBMUCOSAL DISSECTION FOR Laterally Spreading Tumors Involving the Appendiceal Orifice

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**Aims** Though colorectal ESD has become standard therapy, the locations which are difficult to treat anatomically are still exist. Lesions involving the appendiceal orifice are known to be difficult to treat. The aim of this study is to evaluate the clinical outcomes of endoscopic treatment for the lesions near the appendiceal orifice.

**Methods** A total of 274 consecutive patients with the lesions involving the appendiceal orifice which were endoscopically resected at the NTT Medical Center Tokyo between January 2014 and September 2019 were enrolled. The lesions involving the appendiceal orifice were defined as the lesions within 3mm from the orifice (Group AO). We investigated those clinicopathological findings and treatment outcomes comparing to the lesions located in cecum (Group C).

**Results** Of 274 lesions analyzed, 76 were in Group AO and 198 in Group C. The mean diameter was smaller in AO group (29.6±15.1 vs. 34.4±15.5mm, P=0.01). In Group AO, SSA/P was more common (adenoma/SSA/P/cancer=25/32/19 vs. 102/39/57, P< 0.01). All lesions achieved en-bloc resection. On the other hand, the rate of complete resection was lower in Group AO (75.0% vs. 92.9%, P< 0.01). Procedure time was longer in Group AO (57.9±34.0 vs. 48.1±39.3min, P=0.03). According to complication, though there were no delayed bleeding, perforation was more frequent in Group AO (9.2% vs. 3.5%, P=0.06). As for the clinical outcomes, both fever

(35.5% vs. 16.7%, P< 0.01) and abdominal pain (26.3% vs. 10.6%, P< 0.01) were more common in Group AO. As a result, it took longer hospitalization (6.2±0.8 vs. 4.7±1.5d, P< 0.01). However, all cases were managed conservatively.

**Conclusions** Though the lesions involving the appendiceal orifice are often smaller than the lesions in cecum, they need longer time to be resected endoscopically and are difficult to achieve complete resection. Moreover, adverse event is more frequent. However, establishment of therapeutic strategy enabled endoscopic resection of them.

## OP238 NEED FOR COLORECTAL SURGERY IN EPITHELIAL LESIONS RESECTED BY ENDOSCOPIC SUBMUCOSAL DISSECTION. RESULTS FROM A SPANISH MULTICENTER COHORT

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**DOI** 10.1055/s-0040-1704257

**Aims** To evaluate the necessity for surgery after colorectal ESD. To compare the need for surgery between en bloc ESD and piecemeal-hybrid ESD, and to analyze other possible factors related.

**Methods** Prospective, multicenter study from Spain, including all patients with planned ESD between January 2016 and April 2019. In cases where ESD was not feasible, it was aborted or switched to en bloc/piecemeal hybrid ESD. The necessity for surgery was evaluated due to the following causes: technical difficulty, immediate complication, differed complication (1-30days) or non curative histology. Univariate analysis was carried out.

**Results** 930 patients were included. Endoscopic resection was completed in 886 cases (95.3%), 759 en bloc (81.6%) and 127 piecemeal (13.6%). 44 procedures were aborted (4.7%). In total surgery was carried out in 84 cases (9.1%). The reason for the surgery was:

- 44 aborted procedures: 35 due to technical difficulties and 9 to immediate perforation
- 40 surgeries after completed ESD: 17 (1.9%) due to differed complication and 23 (2.5%) to non curative histology

Among these 40 lesions: 31/759 (4.1%) were resected en bloc compared to 9/127 (7.1%) piecemeal resections (p=0.13)

Among the 17 patients that required surgery due to differed complication, the univariate analysis showed significant differences (when compared to lesions that did not need surgery) regarding duration of the procedure (170, 2min vs 123, 8min, p=0.02), size of the lesion (50, 8mm vs 41, 1mm, p=0.02) and type of resection (1.4% en bloc vs 4.7% piecemeal, p=0.01)

From the 23 lesions operated due to non curative histology, univariate analysis showed significant differences regarding morphology (9.5% NG- PD LST vs 1.7% others, p=0.001) and location (5.5% left colon vs 1.1% others, p=0.002). No differences were found regarding type of resection (2.6% en bloc vs 2.4% piecemeal, p=0.8).

**Conclusions** The global rate of surgery after ESD was 9.1%. Piecemeal hybrid ESD was significantly associated to a higher rate of surgery due to differed complication whereas no significant differences were found in global rate of surgery or surgery due to non curative histology regarding the type of technique.

## OP239 LONG-TERM OUTCOMES OF COLORECTAL ENDOSCOPIC SUBMUCOSAL DISSECTION IN DIFFICULT LOCATIONS: DENTATE LINE, ILEOCECAL VALVE AND CECUM

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**Aims** Endoscopic resection at the perineal rectum extending to the dentate line (RTDL), ileocecal valve (ICV), and cecum is difficult. Aim to assess ESD outcomes in these locations.

**Methods** Prospective single center European study from January 2013 to November 2018. Consecutive superficial neoplasms >20 mm or with a positive

no-lifting sign secondary to a previous resection in the rectum involving the dentate line (distal margin < 10 mm from the dentate line) (n.50) or proximally (n.92), ICV (n.27), cecum (n.67), ascending colon (n.118), were included. Outcomes were compared in adjacent segments. ESD was performed by the standard technique by an expert operator (prior case volume: 80). Residual rate was assessed after 12 months.

**Results** Tumor features and ESD outcomes are reported in the Table. Prevalence of scarring neoplasms was higher in rectal (15%) and ICV (19%) groups than other cases (mean 9%). No significant differences were observed in patient and neoplasm features. RTDL distal margin was at the squamous epithelium in 32 (64%) cases. Ileal invasion was observed in 8 (29%) ICV cases.

En bloc and R0 resection rates for RTDL and pelvic rectal tumors were not significantly different (82% and 76% vs. 89% and 82%, respectively). Residual rate was significantly higher in RTDL (12% vs. 0%,  $P=0.002$ ). ESD en bloc, R0 and residual rates for ICV, cecal, and ascending colon tumors were not significantly different (88% and 78%, 83% and 83%, 90% and 90%, respectively).

**Conclusions** ESD for RTDL and cecal tumors shows lower en bloc resection rates compared to adjacent segments, but it was similarly feasible and safe regardless a higher scar prevalence. The narrowness of the perineal rectum and the nonlinear ICV anatomy are associated to clinically relevant residual rates, and follow-up within 12 months is advisable.

## OP240 ENDOSCOPIC SUBMUCOSAL DISSECTION FOR COLORECTAL (CR-ESD) MALIGNANT POLYPS: RESULTS OF A PROSPECTIVE WESTERN COHORT

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DOI 10.1055/s-0040-1704259

**Aims** To describe the feasibility, technical success, en-bloc resection and complications of CR-ESD for malignant polyps in a western cohort.

**Methods** We evaluated all the cases of CR-ESD in malignant polyps (histology showing invasion of submucosa) included between January 2016 and January 2019 in a prospective multicenter Spanish database.

Comparative data according to location was analyzed. Categorical data was compared using Pearson's chi-squared-test, and quantitative data with T student test.

**Results** From 851 colorectal ESDs, 58 (6.8 %) cases with submucosal invasion were evaluated.

Mean age was 68 years-old, being male 72%.

The locations were rectum n=21 (36%), sigmoid n=10 (17%), descending colon n=8 (13.7%), splenic flexure=2 (3.4%), transverse colon n=4 (7%), hepatic flexure n=3 (5%), ascending colon n=7 (12%), and cecum n=3 (5%).

Complete CR-ESD of the lesion was achieved in 48 cases (82.76%). En-bloc resection in 41 (70.69%). There were 10 (17%) aborted procedures due to technical reasons (2/10), perforation (2/10) or muscle-retracting-sign (6/10).

The specimen mean size was 38.3mm x 30.67mm (CI 95% 33.93-42.68 for major axis, and 26.15-35.19 for minor axis).

Submucosal fibrosis was absent (F0) in 18 cases, and severe (F2) in 23 cases (39.66%).

There were 3 (5%) delayed bleeding, 10 (17%) intraprocedural perforations and 2 (3.4%) delayed perforations.

There were a total of 30 (51.7%) surgeries: 19 (63%) due to histology, 10 for aborted ESD and 1 for delayed perforation.

When comparing the results of CR-ESD for malignant polyps according to location, the en bloc resection was higher in the rectosigmoid compared to the rest of the colon (83.87% vs 55.55% respectively,  $p=0.018$ ).

Need for surgery, was lower after ESD in the rectum than in the colon, with 8 surgeries (38%) vs 22 surgeries (59%),  $P=0.029$ .

**Conclusions** CR-ESD for malignant polyps in the distal colon (sigmoid and rectum) shows better results compared to more proximal locations.

## OP241 ENDOSCOPIC FULL THICKNESS RESECTION (EFTR) VERSUS ENDOSCOPIC SUBMUCOSAL DISSECTION (ESD) OF RESIDUAL/RECURRENT COLONIC LESIONS ON SCAR: A RETROSPECTIVE ITALIAN AND JAPANESE COMPARATIVE STUDY

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DOI 10.1055/s-0040-1704260

**Aims** ESD for residual/recurrent colonic lesions on scar is technically difficult with a significant rate of perforations even in Japanese expert hands. Endoscopic full thickness resection (EFTR) with a over-the-scope device (FTRD - Ovesco Endoscopy), recently introduced in Western countries, showed to be safe and effective for residual/recurrent colonic lesions on scar. This study sought to compare outcomes for endoscopic resection of such lesions between a Japanese and an Italian tertiary referral centre.

**Methods** From January 2017 to July 2019 a total of 20 and 50 residual/recurrent colonic lesions on scar were treated by EFTR (in the Italian Centre) and ESD (in the Japanese Centre). En-bloc and R0-resection rates were recorded as primary outcomes and retrospectively analysed. Adverse events, median procedure time and residual lesions at 3-months follow-up were the secondary outcomes.

**Results** R0 resection rates were respectively 90% for EFTR vs 96% for ESD. En-bloc resection was achieved in 100% in both groups. Perforation rate for ESD was 24%, mainly treated conservatively, whereas no late bleeding occurred in the entire population study. There was no significant difference in median procedure time (FTR 54 min vs ESD 66.22 min,  $p = 0.198$ ). At 3-months follow-up relapse was evident in two patients of the FTR group, both treated with hybrid ESD while no relapse was reported for ESD group. Mean size of specimens was 20.95 mm for FTR (20-35 mm) vs 37.96 mm (10- 65 mm) for ESD group and histological analysis revealed 3 high-risk adenocarcinoma, all described in the Japanese population.

**Conclusions** Despite the clear limitations when comparing two techniques with different advancement in asiatic and non-asiatic endoscopic centres, FTR showed to be a safe and effective procedure in residual/recurrent colonic lesions on scar and could become the standard of care in such lesions in Western Countries.

## OP242 LONG-TERM OUTCOMES AFTER “NON-CURATIVE” ENDOSCOPIC SUBMUCOSAL DISSECTION (ESD) FOR COLORECTAL ADENOCARCINOMA

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**DOI** 10.1055/s-0040-1704261

**Aims** Endoscopic-submucosal-dissection(ESD)is a well-established technique for the management of early colorectal cancer(CRC).The advantage of ESD over endoscopic-mucosal-resection is related to the achievement of en-bloc/R0resection.After ESD,patients with positive resected margins(R1),deep submucosal involvement(>sm2)poor differentiation(G3),presence of neoplastic budding(B+) and lympho-vascular invasion(LV+)at histology are considered candidate for surgery(non-curative,NC-ESD) because of the significant risk of nodal involvement. Outcomes following NC-ESDs have never been assessed in the field of CR cancer, resulting in variable clinical management.The aim of our study is to report long-term outcomes after NC-ESD,regardless of post-endoscopic management.

**Methods** A retrospective analysis of a prospectively maintained database was conducted on patients treated by ESD for CRC from2011.Lesions without any of the poor prognostic stigmata(R1,G3,>sm2,B+,LV+)were considered as curatively resected and were excluded.Patients with NC-ESD were referred for additional surgical treatment.Then,they either underwent surgery with curative intent or did not, according to patient’s choice and/or inability to undergo surgery because of severe comorbidities. Outcomes of interest were overall survival(OS),cancer-specific survival(CS) and disease-free survival(DS)rates after NC-ESD.Rates of local residual disease(LR) and nodal involvement rates among patients who underwent surgery were also assessed.

**Results** Over the study period,46patients treated with ESDs for CRC resulted in NCresections. 31(11/20,F/M;mean age:67.7±10.6)underwent surgery. In the remaining group of patients(5/10,F/M;mean age:72.2±11.3)reason for not undergoing surgery was patient’s refusal in 6and high risk conditions due to comorbidities in9.In the surgical group four patients(12.9%)had nodal metastasis with no evidence of local disease.Over a follow-up period of 38.1±24.1months one death(unrelated to cancer)was reported with 96.8% and 100% of OS and CS rates, respectively. There were 2 cases of recurrence(both as hepatic mets) in a mean follow up of 38.4±17.5months(DS rate:6.5%).One case of local recurrence was reported(DS rate:6.7%) in a mean follow up of.No deaths occurred (100% of OSandCS rates).

**Conclusions** Patients withNC-ESD have a low risk of LR and nodes involvement after surgery.Follow-up strategy is an option for patients with high surgical risk.

## OP243V HYBRID RESECTION ASSISTED BY FORCEPS. AN ALTERNATIVE FOR ESD

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**DOI** 10.1055/s-0040-1704262

Forceps-assisted hybrid resection (HF-EMR) can be a technically feasible alternative within the reach of all centers. We present the case of a 3 cm LST-G lesion (“non-lifting sign” in the centre) in hepatic flexure removed in block thanks to HF-EMR.

First, we perform the submucosal bean by injecting gelafundine solution, adrenaline 1:100,000 and indigocarmin. After this, we began to remove the entire contour of the lesion by cold avulsion with forceps . We then capture the polyp with the Captivator 30 mm braided oval handle and apply Endocut current (Effect 2) to achieve block resection of the lesion.

## OP244V GEL-ASSISTED ESD FOR REMOVAL OF A RECTAL NON GRANULAR LATERALLY SPREADING TUMOR PSEUDO-DEPRESSED TYPE WITH SUSPICION OF SUPERFICIAL SUBMUCOSAL INVASIVE CANCER

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**DOI** 10.1055/s-0040-1704263

A new gel lifting solution was used for the removal of a rectal non granular LST pseudo-depressed type, with suspicious pit pattern by ESD in a 64 y/o male. Briefly, 12ml of ORISE™ gel (Boston Scientific) was injected with strong submucosal lifting, no per-procedural bleeding, no needed added per-procedural injection. An easy dissection of 15 min let us remove en-bloc a 30x25mm specimen revealing clear margins of a well-differentiated adenocarcinoma, without lymphovascular invasion or budding but submucosal invasion of 1038µm, giving a 1-2% risk of lymph node metastasis.

Gel-assisted ESD is a promising easy and quick method needing comparative trials.

## OP245V ENDOSCOPIC SUBMUCOSAL DISSECTION OF A RECTUM POLYP WITH THE DOUBLE - ENDOSCOPE - ASSISTED - TRACTION METHOD

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We present the case of a 49-year-old patient with a 5 cm laterally spreading tumor(LST) - mixed type in the rectum. The lesion is initially marked, injected and incised circularly. A thin pediatric gastroscope (5.5mm outer diameter) is introduced, which with the help of a biopsy forceps optimized traction of the submucosa during ESD. This allowed an easier and faster submucosal dissection. The procedure was uncomplicated and lasted about 80 minutes. Patient’s clinical course remained uneventful. ESD with the “Double Endoscope Traction” method is a feasible, technically simple procedure.

*Georgios Tziatzios is a scholar of the Hellenic Society of Gastroenterology.*

## OP246V A MODIFICATION OF THE CLIP-FLAP TECHNIQUE: THE CLIP-BAND-FLAP TECHNIQUE

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**DOI** 10.1055/s-0040-1704265

The clip-flap technique was described to facilitate the creation of a mucosal flap in colorectal ESD. Its main utility is at the beginning of ESD, facilitating the submucosal access. The clip-band technique has been used in gastric and colorectal ESD. The second clip is used to clamp the band, and it is attached on to the normal mucosa distal or opposite to the resection site. This clip is only applied after having completed the circumferential incision. Here we present the clip-band-flap technique for the resection of LST-NG pseudodepressed lesion JNET2B with the two stage traction applied in a sequential fashion.

Friday, April 24, 2020  
 ERCP: Strictures and leaks

11:00 – 13:00  
 Liffey Hall 1

### OP247 TIMING OF PANCREATODUODENECTOMY AFTER BILIARY DRAINAGE IN PATIENTS WITH PERIAMPULLARY CANCER IN THE NETHERLANDS

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DOI 10.1055/s-0040-1704266

**Aims** Obstructive jaundice is a frequent symptom in patients with periampullary cancer. Preoperative biliary drainage (PBD) is indicated in patients with cholangitis, severe jaundice, neoadjuvant chemotherapy and extended waiting time for definitive surgical treatment. Several studies suggest to delay surgery until 4-8 weeks after PBD to allow for recovery of the liver and immune function but consensus is lacking. The aim of this study is to investigate the relation between time from PBD to pancreatoduodenectomy and (major) postoperative outcomes in patients with periampullary cancer.

**Methods** Anonymized data from patients who underwent pancreatoduodenectomy after PBD for periampullary cancer between Jan 2017 and Dec 2018 were extracted from the mandatory, nationwide, Dutch Pancreatic Cancer Audit. Patients who underwent neoadjuvant therapy prior to pancreatoduodenectomy were excluded from the analysis. Patients were stratified by time from PBD to surgery into group: A; < 4 weeks, B; 4-8 weeks and C; >8 weeks. The primary outcome was the rate of major postoperative complications. Secondary outcomes were the rate of PBD-related complications and overall complications. A logistic regression analysis was performed, adjusted for age, gender, BMI, ASA-score, pancreas texture and pancreatic duct diameter, to assess the association between time from PBD to pancreatotomy and major postoperative complications.

**Results** In total, 515 patients were included in the analysis (group A 209, group B 216 and group C 90 patients). The rate of PBD-related complications was 18%, with similar outcomes in the groups. The rate of major postoperative complications (Clavien Dindo  $\geq 3$ ) and overall complications were significantly higher in the long drainage group. In multivariable analysis, long duration of PBD was significantly associated with higher risk of major postoperative complications.

**Conclusions** In a multicenter setting, we found that long drainage duration is associated with the occurrence of major postoperative complications, when it comes to the timing of pancreatoduodenectomy after PBD and complications.

### OP248 ENDOSCOPIC PAPILLECTOMY IN A LARGE MULTICENTER OBSERVATIONAL STUDY: STILL WAY FOR IMPROVEMENT

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 DOI 10.1055/s-0040-1704267

**Aims** Endoscopic papillectomy (EP) is reported to be a relative safe and efficient treatment for selective tumors of the ampulla of Vater, with lower morbidity and mortality rates than surgery. However, large-scale studies are limited. The aim of this study was to evaluate the efficacy and safety of EP and to determine risk factors for recurrence and complications.

**Methods** This is a retrospective multicenter observational study. All patients who underwent EP in 5 tertiary referral centers between January 2008 and December 2018 were included. Morphological and histological characteristics of lesions, modalities of ampullectomy, complications and endoscopic follow-up were collected. Risk factors for recurrence were analyzed using univariate and multivariable Cox regression with 95% confidence intervals.

**Results** 227 patients were included (sex ratio 1.5, mean age 61 years). The tumor mean size was 20 mm. 2.9 % of lesions had duodenal extension and 15.5% intraductal invasion. There was 48% of tumor with low grade dysplasia (n = 108), 33.3% with high grade dysplasia (n = 75) and 10.7% with invasive adenocarcinoma (n = 24). The resection was en bloc in 65.2% cases, classified R0 in 57.3% cases. The recurrence rate was 30.9 % (n=64) with a median time to recurrence of 6.4 months. 60.9 % of recurrences were treated efficiently by additional endoscopic treatment. Finally, 84.5% (n = 175) of patients were cured with a median time to follow up of 22 months. In multivariable analysis, incomplete resection (OR: 2.64, CI: 1.31-5.31, p = 0.006) and tumor size (OR: 1.04, CI: 1.01-1.07, p = 0.017) were correlated with endoscopic recurrence. Complications included bleeding (26 %), pancreatitis (17.6%), perforation (5.2%) and biliary stenosis (2.6%). The mortality was 0.9%.

**Conclusions** EP is an effective and relatively safe curative treatment for localized ampullomas. R1 resection and lesion size are correlated with endoscopic recurrence.

### OP249 NATIONWIDE PRACTICE AND OUTCOMES OF ENDOSCOPIC BILIARY DRAINAGE IN RESECTABLE PANCREATIC HEAD AND PERIAMPULLARY CANCER

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**Aims** International guidelines advise self-expanding metal stents (SEMS) over plastic stents in case preoperative endoscopic biliary drainage (EBD) is indicated in malignant extrahepatic biliary obstruction. This study aims to assess the current nationwide practice and outcomes of EBD in resectable pancreatic head and periampullary cancer.

**Methods** All patients diagnosed with pancreatic head and periampullary cancer who underwent EBD before pancreatoduodenectomy between January 2017 and December 2018 were included from the mandatory Dutch Pancreatic Cancer Audit (17 centers). Multivariable logistic and linear regression models were performed.

**Results** In total, 575 of 1056 (54.4%) patients underwent EBD prior to pancreatoduodenectomy. This included 246 (42.8%) SEMS and 329 (57.2%) plastic stents. SEMS placement varied from 0 to 77.1% between pancreatic centers ( $p < 0.001$ ). EBD-related complications were comparable between SEMS and plastic stents (17.9% vs. 19.5%,  $p = 0.607$ ), including pancreatitis (8.9% vs. 7.6%,  $p = 0.387$ ). EBD-related cholangitis was reduced after SEMS placement (4.1% vs. 9.7%,  $p = 0.043$ ), which was confirmed in multivariable analysis (OR 0.36 95%CI 0.15-0.87,  $p = 0.023$ ). Major postoperative complications did not differ (23.6% vs. 27.4%,  $p = 0.316$ ), whereas both the rate of postoperative pancreatic fistula (9.8% vs. 18.5%,  $p = 0.004$ ; multivariable analysis: OR 0.50 95%CI 0.27-0.94,  $p = 0.031$ ) and hospital stay (14.0 days vs. 17.4 days,  $p = 0.005$ ; multivariable analysis B -2.86 95%CI -5.16-0.57,  $p = 0.014$ ) were less after SEMS placement.

**Conclusions** Nationwide performance of EBD was high whereas the use SEMS was low. SEMS was associated with lower risks of cholangitis, less postoperative pancreatic fistula, and a shorter postoperative hospital stay without increased risk of pancreatitis.

## OP250 MANAGEMENT OF STENT REOBSTRUCTION IN PATIENTS WITH DISTAL MALIGNANT BILIARY OBSTRUCTION: A SYSTEMATIC REVIEW AND META-ANALYSIS

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DOI 10.1055/s-0040-1704269

**Aims** Covered or uncovered self-expandable metallic stents (SEMS) placed in patients with malignant biliary obstruction (MBO) can occlude in 19-40%, but optimal management is unclear. However data suggest that the higher cost of an initial SEMS may be mitigated by the reduced need for repeated ERCP. We summarize the current evidence regarding management of occluded SEMS in patients with malignant biliary obstruction

**Methods** We searched Pubmed, Embase, and Web of Science using pre-defined criteria, and reviewed bibliographies of included studies. Data were independently abstracted by two investigators, and analyzed using RevMan. We compared strategies of second SEMS versus plastic stents with respect to the following outcomes: rate of stent re-occlusion, duration of second stent patency, and survival. Pooled analysis was performed using a Review manager (Cochrane) software.

**Results** Ten retrospective were included. Management options were placement of an uncovered SEMS (n=125), covered SEMS (n=106), plastic stent (n=135), percutaneous biliary drain (n=7). Relative risk of re-occlusion was not significantly different in patients with second SEMS compared to plastic stents (RR 1.24, 95% CI 0.92, 1.67, I<sup>2</sup> = 0,  $p = 0.16$ ). Duration of second stent patency was not significantly different between patients who received second SEMS

versus plastic stents (WMD) 0.46, 95% CI -0.30, 1.23, I<sup>2</sup>=83%). Survival was not significantly different among patients who received plastic stents versus SEMS (WMD -1.13, 95% CI -2.33, 0.07, I<sup>2</sup> 86%,  $p = 0.07$ )

**Conclusions** According to our results, In patients with malignant biliary obstruction and occluded SEMS, a strategy of placing a plastic stent may be as effective as second SEMS. Limitations of these findings were that all studies were retrospective and heterogeneity between studies was detected for two of the outcomes.

## OP251 COMBINED ENDOSCOPIC STENTING FOR CONCOMITANT BILIARY AND DUODENAL MALIGNANT STRICTURES: DATA FROM A SERIES IN A SINGLE REFERRAL CENTER

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**Aims** Endoluminal stent placement is a simple and safe alternative to surgical by-pass in gastric outlet obstruction (GOO) due to advanced gastro-duodenal and bilio-pancreatic cancer. In either biliary or gastro-duodenal malignant obstruction, double biliary and duodenal stenting placement is needed.

Aim of the study was to evaluate the efficacy of combined stenting, in one or two times, in biliary and gastro-duodenal obstruction.

**Methods** From February 2007 to August 2019, we collected data on self-expanding metal stent (SEMS) placement in malignant GOO, even in association to biliary stent placement for biliary obstruction. We evaluated technical success of combined stenting and early (< 24h) or late (>24h) complications.

**Results** A total of 122 patients (61.5%M) was treated with SEMS for GOO. 64/122 (52.5%) patients (36M) had also biliary involvement and needed biliary drainage: 59/64 (92.2%) were treated with biliary stent, 5/64 (7.8%) underwent Lumen-Apposing Metal Stent (LAMS) EUS-guided placement, using Hot-Axios (Boston Scientific). Among patients with concomitant biliary and duodenal malignant strictures, 38/64 (59.4%) underwent double stenting in the same procedure. Conversely in 26/64 (40.6%) patients, biliary and duodenal stents were placed in two times; usually biliary obstruction occurred early and was treated before the onset of symptomatic duodenal obstruction.

Duodenal SEMS were successfully placed in all patients. Technical success of double stenting was achieved in 63/64 patients (98.4%).

We observed 11/64 (17.2%) complications: 2 intra-procedural (1 deployment of LAMS, 1 iatrogenic duodenal perforation), 2 early (1 pancreatitis, 1 bleeding) and 7 late (2 outlet obstruction due to duodenal ingrowth and 5 cholangitis, due to biliary ingrowth or plugs).

**Conclusions** In a referral center for bilio-pancreatic diseases, the impact of bilio-duodenal malignant stricture is significant. Combined stenting of biliary and duodenal obstruction is an effective and minimally invasive procedure, alternative to surgery, with low complication rate, thus becoming the standard of palliative care in these patients.

## OP252 STENT VERSUS BALLOON DILATION FOR THE TREATMENT OF DOMINANT STRICTURES IN PRIMARY SCLEROSING CHOLANGITIS: A SYSTEMATIC REVIEW AND META-ANALYSIS

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DOI 10.1055/s-0040-1704271

**Aims** Primary sclerosing cholangitis (PSC) is a chronic fibro-inflammatory disease of the biliary system, which causes cholestatic symptoms, hepatic

failure, and increases the risk of cholangiocarcinoma. Many patients with PSC presents with a dominant stricture, which can intensify the cholestatic symptoms, and endoscopic therapies are often used to maintain the patency of the biliary tract. However, the best therapeutic approach to treat dominant strictures remains unclear. This study aims to compare balloon dilation with stent placement for the treatment of dominant stricture in patients with PSC.

**Methods** Electronic searches were performed using MEDLINE, EMBASE, Cochrane CENTRAL, and Lilacs/Bireme databases with no restrictions on the date or language. Studies comparing balloon dilation and stent placement for treatment of dominant stricture in PSC were included. The outcomes of interest were clinical efficacy, recurrence, cumulative recurrence-free rate, transplant rate, 5-year survival rate, adverse events, and mortality.

**Results** The initial search identified 1,118 citations. Five studies with a total of 467 patients (190 in the dilation group and 277 in the stent group) were included in the final analysis. Only one was an RCT, and the rest were retrospective cohort studies. Adverse events were higher in the stent group (RD -0.34 (95% CI -0.45, -0.23), p-value < 0.00001). Among the adverse events, the incidence of cholangitis was significantly higher in the stent group (RD -0.19 (95% CI -0.25, -0.13), p-value < 0.00001). However, other outcomes including clinical efficacy, transplant rate, pancreatitis, perforation, and cholangiocarcinoma were similar in both groups. Recurrence, cumulative recurrence-free rate, 5-year survival rate, mortality, bleeding, pain, and ascites could not be included in the quantitative analyses due to missing data.

**Conclusions** The efficacy of balloon dilation and stents in the treatment of dominant stricture in patients with PSC appears to be similar. However, stents are associated with a significantly higher occurrence of adverse events, particularly cholangitis.

## OP253 ENDOTHERAPY IN PATIENTS WITH PRIMARY SCLEROSING CHOLANGITIS: OVER 30 YEARS' EXPERIENCE

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**Aims** Primary Sclerosing Cholangitis(PSC) is a chronic cholestatic liver disease characterized by inflammation and periductal fibrosis of the intrahepatic and/or extrahepatic bile ducts. Endoscopic dilation of symptomatic dominant biliary strictures is a temporary therapeutic option in these patients frequently candidate to liver transplantation. Our experience over a 30-years period is reported.

**Methods** Between March-1984 and April-2019, 73 patients with PSC(46 Males, mean age 46±18 years) were identified from a prospectively collected database. Indications for endoscopic drainage were the presence of symptomatic "dominant" biliary strictures located at the common bile duct or main hepatic confluence. Strictures were dilated with balloon and/or temporary plastic stents insertion. Brush cytology of dominant strictures was performed in patients with new onset or worsening strictures. When MRC was not routinely available, abdominal US and/or CT-Scan were performed before ERCP.

**Results** Indications for ERCP were: cholangitis(n=28,38.3%), anicteric cholestasis and pruritus(n=18,24.6%) and jaundice(n=27,36.9%).

A total of 161 ERCPs were performed in 73 pts [mean 4.3(range 1-13)]. Naso-biliary drains were placed in 81.3% of cases(n=131), while balloon dilation in 44.1%(n=71) and single or multiple plastic stents in 19.9%(n=34).

One patient(0.6%) developed severe post-ERCP pancreatitis that resolved after surgical treatment.

Cholangitis recurrence requiring re-treatment occurred after a mean of 28.2 months after stents removal and 16.6 months after balloon dilation.

Brush cytology was performed in 42 patients(57.5%):4 patients(5.4 %) resulted positive for high-grade dysplasia,1 patient(1.3 %) for carcinoma.

A mean follow-up of 7.4 years(range 0.2-21.7) is available in 46 patients (63%):29 patients(63%) had no further episodes of cholangitis,7(15.2%) underwent OLT,3(6.5%) died for cholangiocarcinoma,6(13%) died for unrelated other disease,1(2.2%) had an incidental finding during laparoscopic cholecystectomy of gallbladder cancer and is still alive.

**Conclusions** According to our experience endotherapy of dominant biliary strictures secondary to PSC is effective in the long term-follow-up and can delay liver transplantation. Early diagnosis of cholangiocarcinoma in PSC is still an unsolved issue.

## OP254 ROLE OF ERCP AFTER LIVER TRANSPLANTATION: A NATIONWIDE STUDY IN KOREA

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**Aims** Biliary complications are the most common complications following liver transplantation (LT). Endoscopic management is considered the reference standard treatment for this condition. However, data on endoscopic retrograde cholangiopancreatography (ERCP) following are not known in Korea.

**Methods** We conducted a nationwide survey using the database provided by the Healthcare Bid Data Hub of Korean Health Insurance Review and Assessment Service We investigated biliary interventions including ERCP and percutaneous transhepatic biliary drainage (PTBD) in patient who underwent liver transplantation between 2012 and 2014 in Korea.

**Results** A total of 3,481 patients underwent liver transplantation during 3 years of study period in Korea. During the median 926-day follow-up period, ERCP was performed in 9.9% (103/1,041) undergoing deceased donor liver transplantation (DDLT), where as in 19.9% (485/2,440) undergoing living donor liver transplantation (LDLT). Among patients who received ERCP after LT, the proportion of patients who also underwent PTBD was 23.3% (24/103) in DDLT and 49.5% (240/485) in LDLT. The median period from LT to first biliary intervention was 238 (interquartile ranges, 106-446) days. Patients receiving biliary interventions during the follow-up period received an average of 2.3 ± 2.2 ERCPs and 1.6 ± 1.4 PTBDs.

**Conclusions** ERCP is the main treatment for bile duct complications of liver transplantation. In Korea, the role of ERCP will become more important because of the relatively high proportion of LDLT with frequent biliary complications.

## OP255 A NEW 12-FRENCH PLASTIC STENT MAY BE AN ALTERNATIVE TO METALLIC STENTS IN UNRESECTABLE DISTAL MALIGNANT BILIARY OBSTRUCTION

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**Aims** To address the efficacy and safety of a new 12-French plastic stent (PS) in unresectable distal malignant biliary obstruction (DMBO).

**Methods** Observational, prospective, frequency matched case-control study. All consecutive patients who underwent biliary stenting by a 12-French plastic stent (PS) were considered as cases. A historical control cohort matched by sex, etiology and metastatic status included patients with 10-French PS, fully-covered SEMS (FCSEMS) and uncovered SEMS (UCSEMS).

The primary outcomes were the stent patency and the recurrent biliary obstruction (RBO) rate. Secondary outcomes were the technical success and 30-days mortality and adverse events. A post-procedure analysis by irrigation and dissection in removed analysis was done.

**Results** Seventy-two patients (median age: 66, range: 32-94 years, 50% male) were included (24 cases, 48 controls). There was no statistically significant difference in the stent patency median time between case-control patients ( $p=0.684$ ). The RBO in the 12-French stent was lower (50%) compared to the 10-French profile (81.3%), and was significant ( $p=0.046$ ). Conversely, there was no statistically significant difference between 12-French PSs and FCSEMSs in RBO (50% vs. 43.8%,  $p=0.698$ ) or stent dysfunction rates (50% vs. 37.5%,  $p=0.436$ ).

The technical success was 100% in all subgroups. The 30-days mortality in case-control groups were 12.5% and 2.1% ( $p=0.105$ ). Adverse events were 4.2% in both groups. Overall survival was 240.4 days ( $\pm 202$ ).

Of 10 removed 12-French PSs suspected to be dysfunctional because of clogging, there were 4 (40%) confirmed occlusions and 6 (60%) were permeable.

**Conclusions** The 12-French PSs could be an alternative in DMBO, with comparable results to SEMSs and definitively better than 10-French PSs. 12-French stent dysfunction is overestimated.

## OP256 PREDICTORS OF STENT DYSFUNCTION IN PATIENTS WITH BILATERAL METAL STENTS FOR MALIGNANT HILAR OBSTRUCTION

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DOI 10.1055/s-0040-1704275

**Aims** For unresectable hilar obstruction, restoring and maintaining biliary ductal patency is a key to improved survival and quality of life. Endoscopic placement of stents is now a mainstay of the treatment, and bilateral stenting is effective for biliary decompression. This study's aim was to find out clinical outcomes of bilateral self-expandable metal stents (SEMS) and clinical predictors of stent dysfunction in patients with malignant hilar obstruction.

**Methods** Data of patients who underwent bilateral SEMS insertion between September 2017 and February 2019 at Asan medical center were reviewed retrospectively.

**Results** Total 73 patients who had undergone bilateral SEMS placement for malignant hilar obstruction were included. Technical success was achieved in 66 patients (90.4%) and clinical success in 69 patients (94.5%). During follow-up periods (median 207, range 18-671) stent dysfunction occurred in 33 patients (45.2%), and median stent patency was 238 days (95%CI: 192-NA). In univariate analysis, cholangitis before stent insertion and chemotherapy were found to be associated with cumulative stent patency. In multivariate analysis, both factors remained as a statically significant factor associated with cumulative stent patency [cholangitis before stent insertion (HR=2.474, 95% CI: 1.192-5.135;  $P=0.015$ ) and chemotherapy (HR = 0.286, 95% CI: 0.139-0.588;  $P<0.001$ )]. Overall survival was median 291 days (95%CI: 261-358).

**Conclusions** Bilateral SEMS placement for malignant hilar obstruction was effective with high technical success and clinical success rate with acceptable patency. Cholangitis before chemotherapy was associated with shorter patency, and following chemotherapy was associated with longer stent patency. Further study is warranted to find out optimal timing of stent insertion and right timing of chemotherapy.

## OP257V ENDOSCOPIC COIL EMBOLIZATION OF MAJOR INTRAHEPATIC BILIARY LEAK

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DOI 10.1055/s-0040-1704276

A 45-year-old male who had recently undergone surgery for a giant hepatic hydatid cyst presented to the emergency with abdominal pain and fever. Cholangiography identified a major intrahepatic bile leak. A 80 x 10 mm fully-covered metal stent was inserted. Given the lack of improvement, the leaking bile branch was selectively cannulated and four 0.035' Tornado coils were introduced through a retrieval balloon and deployed in the terminal end of the leaking duct. A subsequent cholangiogram revealed cessation of the leak. Six months later, CT revealed dilated CBD with a migrated coil inside. ERCP was performed and the coil extracted.

## OP258V ENDOSCOPIC TRANS-PAPILLARY BIOPSY USING A SELF-ASSEMBLED DEVICE: THE "TUNNEL TECHNIQUE"

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DOI 10.1055/s-0040-1704277

A 77-year-old patient was referred for cholangitis. CT-scan and MR revealed stenosis of the left intrahepatic duct. ERCP confirmed the stenosis and the "tunnel technique" was applied. A 11.5-Fr biliary dilation catheter was used as "tunnel" for biopsy forceps after cutting the tapered tip, leaving the radiopaque marker as reference point. Once obtained biliary cannulation with a 035-inch guidewire, the catheter was advanced in the left intrahepatic duct, close to the stricture. 7-French biopsy-forceps with 7-mm-wide cups were inserted inside the catheter. Biopsies of the stricture were easily performed. Based on histology in favor of cholangiocarcinoma, hepatic resection was scheduled.

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Friday, April 24, 2020

11:00 – 13:00

Pancreatic solid tumors

Liffey Meeting Room 1

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## OP259 MULTICENTER RANDOMIZED TRIAL COMPARING THE HISTOLOGICAL MATERIAL QUANTITY OBTAINED BY EUS-FNB OF PANCREATIC MASSES WITH THE 20-GAUGE PROCORE AND THE 22-GAUGE ACQUIRE NEEDLES

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DOI 10.1055/s-0040-1704278

**Aims** Endoscopic ultrasound-guided fine needle biopsy (EUS-FNB) has been proposed to obtain high-quality tissue samples for pancreatic tumors. We performed a multicenter randomized crossover trial comparing EUS-FNB with a 20-gauge Procore needle versus a 22-gauge Acquire needle. Our primary and secondary aims were the quantity of targeted tissue (pancreas) obtained and tumor characterization.

**Methods** 60 patients admitted for EUS-FNB in three endoscopy units were included. One pass was performed consecutively with each needle, in a randomized order. Histological material was studied in a blinded manner with respect to the needle. The primary endpoint was the mean cumulative length of tissue core biopsies per needle pass, measured manually. A computer-assisted surface area measurement was also performed (Aperio software). The secondary endpoint was final diagnosis.

**Results** Final diagnosis was adenocarcinoma (46 cases/77%), neuroendocrine neoplasm (11 cases/18%), auto-immune pancreatitis (2 cases), and mass-forming chronic pancreatitis (1 case). Histological diagnosis was achieved in 40 out of 60 patients (67%) with the 20-gauge Procore needle and in 52 out of 60 patients (87%) with the 22-gauge Acquire needle ( $P < 0.02$ ). The mean cumulative length of tissue core biopsies per needle pass was significantly higher with the 22-gauge Acquire needle with  $11.36 \pm 9.3$  mm versus  $5.42 \pm 6.3$  mm for the 20-gauge Procore needle ( $P < 0.0001$ ), as was the mean surface area ( $3.48 \pm 3.1$  mm<sup>2</sup> versus  $1.77 \pm 2.0$  mm<sup>2</sup>,  $P < 0.001$ ).

**Conclusions** Our results suggest significant differences, with tumor characterization and mean cumulative length/surface area of tissue core biopsies significantly higher with the 22-gauge Acquire needle than with the 20-gauge Procore.

ClinicalTrials.gov ID: NCT03567863

## OP260 EUS-GUIDED TISSUE ACQUISITION IN CHRONIC PANCREATITIS: DIFFERENTIAL DIAGNOSIS BETWEEN PANCREATIC CANCER AND PSEUDOTUMORAL MASSES USING EUS-FINE NEEDLE ASPIRATION OR CORE BIOPSY

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DOI 10.1055/s-0040-1704279

**Aims** Endoscopic Ultrasound (EUS)-guided fine needle aspiration (FNA) sensitivity for malignancy in parenchymal masses of patients with concurrent chronic pancreatitis (CP) has been reported to be unsatisfactory. The aim of the present study was to directly compare the diagnostic accuracy of EUS-FNA and EUS-fine needle biopsy (FNB) in differentiating between inflammatory masses and malignancies in the setting of CP.

**Methods** We performed a retrospective analysis of prospective, multicentric databases of all subjects with pancreatic masses and clinical-radiological-endosonographic features of CP who underwent EUS-FNA or FNB. The diagnosis of CP was made in accordance with current International Guidelines. Endosonographic features of CP were described in accordance with Rosemont criteria; all patients with "indeterminate" or "normal" EUS imaging were excluded. Sensitivity, specificity, PPV, NPV and overall accuracy of EUS-FNB were calculated. A binary logistic regression was used to examine the possible predictors for a correct diagnosis.

**Results** Among 1124 with CP, 210 patients (60% males, mean age 62.7 years) with CP and

pancreatic masses met the inclusion criteria and were enrolled. In the FNA group (110 patients), a correct diagnosis was obtained in all but 18 cases (diagnostic accuracy 83.6%, sensitivity 69.5%, specificity 100%, PPV 100%, NPV

73.9%); by contrast, among 100 patients undergoing FNB, a correct diagnosis was obtained in all but 7 cases (diagnostic accuracy 93%, sensitivity 86.8%, specificity 100%, PPV 100%, NPV 87%) ( $p = 0.03, 0.03, 1, 1$  and  $0.07$ , respectively). At binary logistic regression, focal pancreatitis (OR 4.9;  $p < 0.001$ ), higher Ca19-9 (OR 2.3;  $p = 0.02$ ) and FNB (OR 2.5;  $p < 0.01$ ) were the only independent factors associated with a correct diagnosis.

**Conclusions** EUS-FNB is effective in the differential diagnosis between pseudotumoral masses and solid neoplasms in CP, showing higher diagnostic accuracy and sensitivity than EUS-FNA. EUS-FNB should be considered the preferred diagnostic technique for diagnosing cancer in the setting of CP.

## OP261 A RETROSPECTIVE ASSESSMENT OF A NEW FRANSEEN-TIP NEEDLE'S DIAGNOSTIC PERFORMANCE AND ITS COMPARISON WITH STANDARD FNA NEEDLES AND WITH PROCORE 20G NEEDLE

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DOI 10.1055/s-0040-1704280

**Aims** New biopsy needles for EUS-guided tissue acquisition are gradually replacing traditional FNA needles in clinical practice. We aimed to assess the diagnostic performance and histological diagnostic yield of the new Franseen-tip needle comparing it with Echo-tip FNA needles (20 and 25G) and with ProCore-tip FNB needles (20G).

**Methods** 95 consecutive cases of pancreatic and extrapancreatic EUS-FNB performed with a Franseen needle were investigated retrospectively and compared with 149 cases of EUS-FNA with FNA standard needle and with 46 cases of EUS-FNB with ProCore 20G needle in the same period, without ROSE. Final diagnoses were based on surgical pathology or on a minimum six-month clinical follow-up.

**Results** Diagnostic adequacy rate was 100% for Franseen needle, 94% for FNA needles and 86% for ProCore needle ( $p$  value  $< 0.05$ ). Sensitivity, specificity, diagnostic accuracy, PPV and NPV on pancreatic lesions were respectively 90.9%, 100%, 92.2%, 100%, 64.3% for Acquire, 92.6%, 91.7%, 92.5%, 98.4 e 68.7% for FNA needles and 90.3%, 100%, 90.6%, 100% and 25% for ProCore needle. Mean number of passes was respectively  $3.5 \pm 1.3$ ,  $3.9 \pm 1.4$  and  $1.8 \pm 0.8$  ( $p$  value  $< 0.05$ ). There was no significant difference in extrapancreatic diagnostic yield (86.7% vs 81.4%) nor in adverse event rate (4% vs 2%) between Acquire and FNA needles. Histological evaluation, available for 33 Franseen's and for 20 FNA needle's specimens, showed significant superiority of Franseen needles in tissue core's length ( $1534.2 \pm 929$  vs  $669.1 \pm 593$  micron) and in histological adequacy's rate (87.9% vs 55.0%).

**Conclusions** Franseen needle's clinical performance is similar to FNA needles when histological analysis is not required, but the adequacy rate (in absence of ROSE) and the capability to acquire histological core tissue specimens are significantly superior. Franseen needle required fewer passes than FNA needles and more passes than ProCore needles. Adverse events were mild and very rare.

## OP262 SIDE-FENESTRATED VS. FORK-TIP NEEDLES FOR EUS-GUIDED FINE-NEEDLE BIOPSY OF SOLID PANCREATIC LESIONS: A PROSPECTIVE SINGLE CENTER RANDOMIZED STUDY

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DOI 10.1055/s-0040-1704281

**Aims** To compare the performance of EUS-FNB using the SharkCore needle (SC) or the ProCore needle (PC) for the diagnosis of solid pancreatic lesions (SPLs).

**Methods** Patients with SPLs were randomized to be punctured with the SC or the PC needle. Two independent randomization lists were used for the 22G and the 25G. Three needle passes were performed, and specimens placed separately in formalin vials after each pass. ROSE was not available, and pathologists were blinded to the needle used. The primary endpoint was the histologic procurement yield. Secondary endpoints were: sample adequacy and quality, diagnostic accuracy, safety, number of passes needed to reach a definitive diagnosis. Atypia was considered as false negative when a final diagnosis of malignancy was ascertained. Diagnostic accuracy was measured against surgical pathology or after a clinical course of at least six months.

**Results** 192 patients were enrolled. The histologic yield after 1, 2 and 3 passes were 60.4%, 65.6% and 79.1% vs 92.7%, 96.9% and 100% with the SC and the PC, respectively ( $p=0.0001$ ). Sample adequacy was higher after one pass in the SC group (86.5% vs. 97.9%,  $p=0.005$ ) but comparable after 3 passes (95.8% vs. 100%,  $p=0.121$ ). Similar diagnostic accuracy was observed in the PC and SC groups (91.67% vs. 92.71%, respectively). However, in the 22G subgroup, the accuracy after one pass was higher with the SC (93.4 vs 78.7%,  $p=0.034$ ). Both needles were safe. The sample quality was better with the SC ( $p=0.0001$ ). The second pass improved the diagnostic accuracy only in the 22G PC subgroup (78.7% vs. 93.4% with one or two passes,  $p=0.034$ ).

**Conclusions** The SC provides higher histologic yield and sample quality compared with the PC. In the 22G subgroup the adequacy and accuracy were higher with the SC after one pass. At least two passes should be performed with the 22G PC.

## OP263 EFFECT OF HISTOLOGICAL EXAMINATION ON DIAGNOSTIC ACCURACY IN ENDOSCOPIC ULTRASOUND FINE-NEEDLE ASPIRATION

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DOI 10.1055/s-0040-1704282

**Aims** Diagnostic yield of EUS-FNA for pancreatic lesions varies around 70-90%, affected by many factors including tissue processing. In order to increase the diagnostic accuracy, we evaluated the effect of histological examination of core tissues acquired from EUS-FNA.

**Methods** A single-center observational study was conducted at a tertiary university hospital. The patients who underwent EUS-FNA for pancreatic lesion using 22G EUS-FNA needle were included only if a core was observed from the retrieved specimen. A total of 63 patients was enrolled. For liquid-based cytology, the specimen was directly expressed into a liquid-based fixation medium for processing, and cellblock was also made for the evaluation. The whitish core was withdrawn before any process for cytology was made and was placed in a container of 10% neutral-buffered formalin fixative for the histologic evaluation.

**Results** In total 63 patients, 61 patients were finally diagnosed as pancreatic cancer and 2 patients had benign lesions. Cytologic diagnosis showed sensitivity of 73.8 %, specificity of 100.00%, accuracy of 74.6 %, positive predictive value (PPV) of 100.0 % and negative predictive value (NPV) of 11.1 %. Histologic diagnosis showed sensitivity of 68.9 %, specificity of 100.0 %, accuracy of 69.8 %, PPV of 100 % and NPV of 9.5 %. Overall diagnostic yield of EUS-FNA showed increased sensitivity of 86.9 %, specificity of 100.0 %, accuracy of 87.3 %, PPV of 100.0 % and NPV of 20.0 %. We also compared the weight of the core and needle depth from the surface of the lesion between the histology positive and negative group, but there were no significance.

**Conclusions** Histologic evaluation of core material obtained from EUS-FNA improved diagnostic sensitivity, accuracy, and NPV, and histologic results had

higher ratio of atypical cell over negative result, providing more clinical information. Further studies with prospective randomized trial is recommended to support our data.

## OP265 EUS-GUIDED FNA OF SOLID PANCREATIC MASSES: DO WE NEED THE FOURTH PASS? A PROSPECTIVE STUDY

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DOI 10.1055/s-0040-1704283

**Aims** Endoscopic ultrasound-guided fine needle aspiration (EUS-FNA) is important for the differential diagnosis of solid pancreatic lesions. However, the sample adequacy is related to the number of needle passes. The European guidelines recommend performance of three to four needle passes with the standard EUS FNA needle.

Our aim is to evaluate the optimum number of passes with standard EUS-FNA needles in solid pancreatic lesions.

**Methods** There were included prospectively patients with solid pancreatic masses on CT scan, without cystic component over 20%, biliary metallic stents or coagulation problems. The 22G Olympus standard needle were used (maximum four passes), each sample was paraffin embedded and analysed separately. The final diagnosis was established by EUS-FNA, repeated EUS-FNA, surgery or follow-up.

**Results** There were included 61 patients with masses localized in the pancreatic head (62%), with the mean size=3.3±0.4 mm. The final diagnosis was adenocarcinoma (n=39, 62%), neuroendocrine tumor (n=10, 19%), others (n=4, 6 %). Immunohistochemistry by EUS-FNA samples was possible in 17 (26%) of cases. The diagnosis was established by the first pass in 52% of cases (n=32), by the second pass in 14% of cases (n=9), by the third pass in 16% of cases (n=10) and by the fourth pass in 3% of cases (n=2), there were 8 false negative cases. The diagnosis accuracy for all four passes compared to the first three passes was 86% vs 83%,  $p=0.832$ , between the first three passes compared to the first two passes was 83% vs 76%,  $p=0.567$ . The contribution of the fourth pass was not different for adenocarcinoma or NET (2% vs. 10%,  $p=0.28$ ).

**Conclusions** Three passes with the standard EUS-FNA was optimal for a specific diagnosis of solid pancreatic masses, no matter the histologic type of the lesion.

## OP266 MOSE FOR EUS-GUIDED PANCREATIC TISSUE ACQUISITION: THE THIRD WAY

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DOI 10.1055/s-0040-1704284

**Aims** To increase FNA performance ROSE and the use of core needles have been extensively analyzed. The aim of this study was to assess the role of the macroscopic on-site evaluation (MOSE) to raise the adequacy of pancreatic FNA.

**Methods** From our prospectively maintained database we extracted the FNA procedures for solid pancreatic lesions in which the MOSE technique was applied. In our center this method is performed by one endosonographer since 2013, when he attended a formal training by our pathologists to become familiar with the technique of smearing and gross evaluation of the specimens. During EUS, after each 22G/25G needle pass, the endoscopist emptied the needle onto the slides; afterwards he smeared and assessed the

slides under oblique white light before fixation. Each endoscopic procedure was carried on, regardless of the number of needle passes, till five slides showed an opaque thin granular or thread-like whitish material; bloody smears were eliminated. The final microscopic adequacy was established from the pathological reports.

**Results** 221 patients entered the study; the mean size of the target lesions was 33mm. FNA was adequate in 212 cases (95.9%) after a mean of 3.8 needle passes; adequacy with 22G or 25G needles was equal (94.6% vs 97.8%;  $p=0.31$ ). For lesions < 20mm adequacy was 34/36=94.4%. For procedures with  $\leq 2$  needle passes adequacy was 28/30=93.3%.

**Conclusions** This is the largest series of MOSE application to pancreatic FNA; its single-operator design reduces the bias due to the interobserver variability. This technique, when performed by a trained endosonographer, can get a very high adequacy rate, even for small lesions or after a few needle passes. Given the costs of ROSE and the difficulty to get tissue from small lesions with side-holed histological needles, MOSE represents a simple and cheap third strategy to increase the adequacy of EUS-guided pancreatic tissue acquisition.

### OP267 ENDOSCOPIC ULTRASOUND-FINE NEEDLE ASPIRATION (EUS-FNA) DIAGNOSTIC ACCURACY IN THE EVALUATION OF PANCREATIC NEUROENDOCRINE NEOPLASMS (PNET) GRADING

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DOI 10.1055/s-0040-1704285

**Aims** Prognosis of pNETs depends on staging and grading, which is based on the cyto-histological Ki67 labelling. EUS-FNA is considered the gold standard technique to obtain a cytological specimen in pre-therapeutic setting that can be used to evaluate Ki67. The aim of this study was to establish the diagnostic accuracy of preoperative EUS-FNA Ki67 evaluation in a cohort of pNET patients.

**Methods** This is a retrospective study from a prospectively collected database on patients who underwent surgery for pNETs from 2006 to 2019 and EUS-FNA Ki67 labelling. EUS-FNA and surgery Ki67 (eKi67 and sKi67, respectively) values and grading, were compared and the diagnostic accuracy of EUS-FNA was evaluated with sKi67 as gold standard. eKi67 and sKi67 correlation was evaluated by Pearson's index.

**Results** 112 pNET patients were enrolled. Correlation between eKi67 and sKi67 values was good (coefficient  $r=0.78$ ). On EUS-FNA specimens 56/112 (50%) patients were classified as G1, 53 (47.3%) as G2 and 3 (2.7%) as G3, while on surgery they were respectively 59 (52.7%), 50 (44.6%) and 3 (2.7%). In 9.8% grade was increased from G1 to G2 by surgical histology, while in 12.8% it was diminished from G2 to G1. No misclassification occurred in G3 patients. Considering only patients with small tumours (< 2 cm), similar misclassification rate was observed respectively in 9.5% (4/48) and 21.4% (n=9) of cases. Sensitivity, specificity, positive and negative predictive values and accuracy of eKi67 to correctly classify G2 patients were respectively 78.4%, 77.4%, 73.6%, 81.4% and 77.7%. No predictive factors of misclassification were found at multiple regression analysis.

**Conclusions** This study represents the largest cohort of surgical pNET patients with preoperative eKi67 evaluation. We found a good correlation between eKi67 and sKi67, but about 20% of patients are not correctly allocated in grading classes. This should be carefully considered especially in small tumours undergoing observation.

### OP268 IMPACT OF EUS AND EUS-GUIDED ASPIRATION (FNA) AND BIOPSY (FNB) ON MANAGEMENT OF PATIENTS WITH SUSPECTED PANCREATIC NEUROENDOCRINE TUMORS

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DOI 10.1055/s-0040-1704286

**Aims** EUS has major impact on decision-making during diagnosis of pancreatic solid lesions. However, most of available evidence concerns suspicion of pancreatic adenocarcinoma (PDAC) and data focusing on influence of EUS in suspicion of pancreatic neuroendocrine tumor (PNET) is scarce. Importantly, management strategies differ substantially between PNETs and PDACs. Our aim was to retrospectively analyze influence of EUS in patients with suspected PNETs on major treatment decisions. We have also investigated safety of the procedure and differences in sampling between aspiration (FNA) and biopsy (FNB) needles.

**Methods** We have included 59 patients which have undergone EUS between 2017-2019. The suspicion of PNET was raised on the base of clinical symptoms and/or previous diagnostic imaging procedures. All patients were referred to our center to perform EUS after qualification carried out by Tumor Board of European Neuroendocrine Tumor Society (ENET) Excellence Centre. After procedure, EUS outcomes were again presented to Tumor Board for final decision on treatment or further diagnostic procedures. Impact of EUS was considered as positive if it led to start of treatment (surgery, initiation or modification of chemotherapy) or appropriate follow-up. EUS was considered as negative when it led to supplementary diagnostic procedures due to the inability to make the final decision by Tumor Board.

**Results** In our study, EUS-FNA had a direct therapeutic impact for n=48/59 patients (81%). We have observed single case of post-procedure acute pancreatitis which caused prolonged hospitalization. Accuracy of sampling was significantly higher when FNB needles were used in comparison to FNA needles ( $p=0.001$ ). Quality of specimen (including its length, possibility of performing specific staining and identification of Ki67%) correlated with increasing size of used needle ( $p<0.005$ ).

**Conclusions** EUS is a safe and efficient method for settling decisions when PNET is suspected. Accuracy of biopsy depends on size and type of needle - favoring FNB.

### OP269V ENDOSCOPIC ULTRASOUND (EUS)-GUIDED RADIOFREQUENCY ABLATION (RFA) OF A SYMPTOMATIC PANCREATIC INSULINOMA

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DOI 10.1055/s-0040-1704287

**Aims** EUS-RFA effectiveness and safety to induce syndrome relief in functioning neuroendocrine tumors (F-NETs) at high surgical risk (HSR)

**Methods** A19-G needle(EUSRA;STARmedCo,Korea) with 5 mm-monopolar electrode, inserted in a linear therapeutic EUS-scope and connected to RFA-generator and a peristaltic pump (infusing cold saline) delivered RFA.

**Results** 84years-old male at HSR with a 13-mm pancreatic tail symptomatic insulinoma was treated. 4subsequent RFA applications(12-16-12-10 seconds) at 30Watts (stop if impedance >500Ω) in 1endoscopic session were applied without complications with immediate syndrome relief. 3months-EUS showed a total not-vascularized area. Patient is still asymptomatic.

**Conclusions** EUS-RFA is a useful and safe option for F-NETs at HSR.

## OP270V EUS-DIRECTED TRANSGASTROJEJUNAL ERCP: A NEW TYPE OF EDGE TECHNIQUE TO TREAT BILIARY STRICTURE AFTER WHIPPLE SURGERY THROUGH THE AFFERENT LIMB

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**DOI** 10.1055/s-0040-1704288

EUS-directed transgastric ERCP is a well-known technique to access to excluded stomach after Roux-en-Y-bypass through gastro-gastrostomy or jejunogastrostomy. We described here a new approach for ERCP by performing a EUS-guided gastrojejunostomy of the afferent limb in a patient with previous Whipple procedure (EUS-GJ), referred with jaundice and pruritus.

Management with EUS-guided hepaticogastrostomy was not possible. We decided to access to the afferent limb of the surgical hepatico-jejunostomy, by performing a EUS-guided gastrojejunostomy (Video step 1), then accessing to the choledoco-jejunal surgical anastomosis (Video step2).

EDGJE with EUS-GJ is another modality to treat biliary stricture in patients with altered anatomy.

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**Friday, April 24, 2020**

**11:00-13:00**

**Endoscopist: RIP! - New diagnostics Wicklow Meeting Room 1 in upper GI endoscopy**

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## OP271 NEAR-INFRARED FLUORESCENCE MOLECULAR ENDOSCOPY SHOWS PROMISING RESULTS IN DETECTING DYSPLASTIC ESOPHAGEAL LESIONS USING TOPICALLY ADMINISTERED BEVACIZUMAB-800CW: THE PRELIMINARY RESULTS OF A PHASE 2 STUDY

**Authors** Gabriëls RY<sup>1</sup>, Hooghiemstra WTR<sup>1</sup>, Schmidt I<sup>1</sup>, van der Laan JJH<sup>1</sup>, Kats-Ugurlu G<sup>2</sup>, Robinson DJ<sup>3</sup>, Ntziachristos V<sup>4</sup>, Gkorkas D<sup>4</sup>, Nagengast WB<sup>1</sup>

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**DOI** 10.1055/s-0040-1704289

**Aims** Esophageal cancer (EC) is affecting more than 450,000 people worldwide and is the 6th leading cause of cancer-related deaths. The poor EC survival is attributed to the insufficient methods for premalignant lesion detection and therefore there is a great need for new endoscopic techniques that can visualize early stage lesions. In this phase II study we aim to evaluate the sensitivity and specificity of the tracer bevacizumab-800CW in combination with near infrared fluorescent molecular endoscopy (NIR-FME) for detecting (pre)malignant lesions in patients with Barrett's esophagus (BE).

**Methods** The tracer, Bevacizumab-800CW, was topically administered to the patients and after 5 minutes of incubation NIR-FME was performed. To quantify the intrinsic fluorescent signal, we used multi-diameter single fiber spectroscopy/single fiber fluorescence (MDSFR/SFF) spectroscopy measurements both

in vivo and ex vivo. In case of additional fluorescent lesions biopsies were taken to analyze if dysplasia was present. The day after the endoscopic procedure the endoscopic mucosal resection (EMR) specimen was analyzed with widefield back-table imaging.

**Results** In our preliminary results topical-based NIR-FME detected all 4 adenocarcinoma lesions and all 8 high grade dysplasia lesions. Additionally, in one patient, this novel endoscopic technique identified another dysplastic lesion which was not visualized by high definition white light endoscopy (HD-WLE) and narrow band imaging (NBI) inspection. In our cohort no (serious) adverse events related to the tracer were observed. In the upcoming months we will include 52 more patients, add MDSFR/SFF spectroscopy data and determine tumor to background ratios.

**Conclusions** Based on the preliminary results combined with the results of the Phase I study we can conclude that VEGF-A guided NIR-FME is able to reliably detect (pre)malignant dysplastic lesions in patients with BE and improves early lesion detection compared with HD-WL/NBI endoscopy. Moreover, the topically administered tracer Bevacizumab-800CW is safe and well tolerated.

## OP272 WATS3D FOR THE DETECTION OF HIGH GRADE DYSPLASIA AND ADENOCARCINOMA IN BARRETT: EUROPEAN MULTI-CENTER, PROSPECTIVE, RANDOMIZED, TANDEM STUDY

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**DOI** 10.1055/s-0040-1704290

**Aims** To compare the independent additional yield for HGD/EACs diagnosis resulting from WATS versus 4 quadrant random forceps biopsy (RFB) in a multi-center setting.

**Methods** Patients with known BEdysplasia following resection of visible lesions scheduled for ablation therapy at 15 European centers were 1:1 randomized to WATS followed by RFB or vice versa. All WATS were examined with computer assistance by an experienced pathologist (FF) at CDx; all RFBs were examined by a single expert pathologist (GD), blinded to clinical information. Primary endpoints were the detection rate of HGD/AC and the incremental detection attributable to WATS over RFB. Secondary endpoints were detection rate of

HGD/AC for the two procedures in combination, detection rate of HGD/AC according to the order of WATS sample acquisition (i.e., before or after RFB acquisition) and procedural times.

**Results** 147 patients (male/female, 123/24; mean age, 68.4 years) were included. Overall, we found 49 HGD/EAC cases. Of these, 25 were detected with both modalities, 14 were detected solely by WATS but missed by RFB and 10 solely by RFB but missed by WATS. The detection rate of HGD/EACs did not differ between WATS (39/147) and RFB (35/147) (26.5%, 95% CI:19.6-34.4% vs 23.8%, 95% CI:17.2-31.5%);  $p=0.541$ ). Integrated WATS and RFB (49/147) significantly improved detection of HGD/EACs vs RFB alone (33.3%, 95% CI:25.8-41.6%;  $p < 0.001$ ). The mean procedural time for RFB alone, WATS alone and integrated WATS and RFB were 6.4 (95% CI:5.8-7.2; median, 5.0; IQR,4-8) minutes, 4.8 (95% CI:4.1-5.5; median, 5.0; IQR, 3-6) minutes and 11.2 (95% CI:10.5-11.9; median, 10; IQR, 8-14) minutes, respectively.

**Conclusions** In an enriched population with known dysplasia, WATS and RFB detected similar number of cases with HGD/EAC. However, the combination of the two techniques significantly improved detection of HGD/EAC compared to RFB alone, confirming the role of WATS as an adjunct to RFB.

## OP273 A DEEP LEARNING-BASED SYSTEM FOR IDENTIFYING DIFFERENTIATION STATUS AND DELINEATING MARGINS OF EARLY GASTRIC CANCER IN NARROW-BAND IMAGING ENDOSCOPY

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DOI 10.1055/s-0040-1704291

**Aims** Accurate differentiation status diagnosis of early gastric cancer and cancer margin delineation are critical for the treatment strategy and achieving endoscopic curative resection. The aim of this study was to train a real-time system to accurately identifying differentiation status and delineating margins of EGC in ME-NBI endoscopy.

**Methods** 2217 magnifying narrow-band images (ME-NBI) from 145 EGC patients and 882 images from 58 EGC patients were used to train and test the convolutional neural network (CNN) 1 for identifying EGC differentiation status. 256 images from 67 EGC patients and 69 images from 31 EGC patients were used to train and test CNN2 for delineating EGC margins.

**Results** The system correctly predicted differentiation status of EGCs with an accuracy of 68.97%, on par with the performance of the five experts (69.66 ±13.33%,  $p = 0.91$ ). For delineating EGC margins, the system achieved an accuracy of 93.75% in differentiated EGC and 97.37% in undifferentiated EGC under an overlap ratio of 0.50.

**Conclusions** We developed a deep learning-based system for accurately identifying differentiation status and delineating margins of EGC in ME-NBI endoscopy. This system achieved a performance comparable with experts, and was successfully tested in real EGC videos.

## OP274 A DCNN-BASED SYSTEM FOR CLASSIFICATION OF GASTRITIS LESIONS

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DOI 10.1055/s-0040-1704292

**Aims** Endoscopic morphological diagnosis of gastritis plays a crucial role in the gastritis diagnosis. Endoscopists tend to be subjective when classifying gastritis images, and different physicians will have certain differences in the judgment of the same image. In order to avoid the influence of subjectivity on the endoscopists' diagnosis, we used deep learning to classify endoscopic gastritis images more objectively and accurately.

**Methods** We collected a total of 3621 endoscopic images of 921 patients with atrophic gastritis, erosive gastritis hemorrhagic gastritis and normal gastric mucosa. Based on the Sydney System and clinical experience, the images were classified into three types of lesions- "atrophy, erosion and hemorrhage". Models are built by learning important features on typical images through deep convolutional neural network. The training set and the validation set are randomly generated from the study data set. The model was trained and validated based on the consensus of three experienced endoscopists.

**Results** For the training set, the accuracy of the models "atrophy, erosion and hemorrhage" are 86%, 78% and 92%, the sensitivity of whom are 74%, 68% and 57%, while the specificity 90%, 80% and 97% respectively. For the test set, the accuracy of the models "atrophy, erosion and hemorrhage" are 81%, 74% and 91%, the sensitivity of whom are 84%, 74% and 80%, while the specificity 80%, 74% and 94%, on a par of the performance of the consensus of three endoscopists. The intraobserver agreement of the DCNN were evaluated by Cohen's kappa coefficient.

**Conclusions** our study shows that our models have decent specificity and good accuracy in gastritis lesions classification. Deep learning has great potential in the field of gastritis classification in endoscopy, which could assist endoscopists make an accurate diagnosis after endoscopic procedure in the future.

## OP275 ENDOSCOPIC GRADING OF GASTRIC INTESTINAL METAPLASIA PREDICTS EARLY GASTRIC NEOPLASIA: CAN WE REPLACE HISTOLOGY ASSESSMENT ALSO IN THE WEST?

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DOI 10.1055/s-0040-1704293

**Aims** To assess the predictive value of endoscopic grading of gastric intestinal metaplasia (EGGIM), operative link on gastritis assessment (OLGA) and operative link on gastric intestinal metaplasia (OLGIM) for early gastric neoplasia (EGN) and investigate other factors possibly associated with its development.

**Methods** Single center, case-control study including 187 patients with EGN treated endoscopically and 187 age- and sex-matched control subjects. Individuals were classified according to EGGIM, OLGA and OLGIM systems. EGN risk according to gastritis stages and other clinical parameters was further evaluated.

**Results** More EGN patients had EGGIM ≥5 than controls (68.6% vs. 13.3%,  $P < 0.001$ ). OLGA and OLGIM stages III/IV were more prevalent in EGN patients than in controls (68% vs. 11%,  $P < 0.001$  and 61% vs. 3%,  $P < 0.001$ , respectively). The three systems were the only parameters significantly related to the risk of EGN in multivariate analysis - for EGGIM 1-4 (adjusted odds ratio (AOR) 12.9, 95%CI 1.4-118.6) and EGGIM 5-10 (AOR 21.2, 95%CI 5.0-90.2); for OLGA III/IV (AOR 11.1, 95%CI 3.7-33.1); for OLGIM I/II (AOR 11.5, 95%CI 4.1-32.3) and OLGIM III/IV (AOR 16.0, 95%CI 7.6-33.4).

**Conclusions** This study confirms the role of histological assessment as a predictor for gastric cancer but it is the first study to show that an endoscopic classification of gastric intestinal metaplasia is highly associated with that outcome. After proper training, this classification may be appropriate for gastric cancer risk stratification and simplify every day practice by precluding the need for biopsies.

## OP276 OUR NEW EXPERIENCES WITH A ROBOTICALLY CONTROLLED MAGNETIC CAPSULE ENDOSCOPY SYSTEM TO EVALUATE ESOPHAGEAL AND GASTRIC DISORDERS IN PATIENTS REFERRED FOR SMALL BOWEL CAPSULE ENDOSCOPY

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DOI 10.1055/s-0040-1704294

**Aims: Introduction** Capsule endoscopy(CE) is the gold standard examination method of the small bowel. The new robotically controlled magnetic capsule endoscopy (MACE) system has been developed to investigate both stomach and small bowels.

**Our aim** was to analyze feasibility and efficacy of Ankon MACE system in the evaluation of esophageal and gastric disorders.

**Methods** Consecutive outpatients referred for CE were prospectively enrolled between January 2018 and November 2019. Indications were obscure GI bleeding, suspected Crohn's disease, small bowel neoplasia and sprue. Preparation for MACE was liquid diet and PEG on the previous day and simethicone, pronase B with clear water just before the examination. Esophagus was examined on left lateral position with 45° elevated head, stomach was examined with three standardized pre-programmed computerized algorithms, then all patients underwent a complete CE study protocol too.

**Results** 389 MACE (178 female, 211 male, mean age 43 years) was performed during the study period. In 253(65%) cases MACE was effectively stationed in the esophagus (average total frame:194). The average total examination time was 5:42:57, the mean stomach and small bowel transit time was 0:45:44 and 3:20:35, respectively. We found reflux esophagitis in 114, cardia insufficiency in 51, hiatus hernia in 15 and Barrett-like mucosa in 5 patients. 131 active antral gastritis, 185 gastric/duodenal erosions, 12 gastric and 6 duodenal ulcers were detected in the stomach. UBT test revealed H.pylori positivity in 29% of patients. Small bowel capsule study was incomplete in 7% of our patients, No capsule retention was observed.

**Conclusions** Based on our results, MACE is an effective and safe method in the diagnosis of upper GI mucosal lesions and bleeding sources in patients referred for small bowel capsule study. This examination can provide a new dimension of upper gastrointestinal screening programs without patient discomfort and sedation can help to lower the mortality rate in upper GI malignancies.

## OP277 EFFICACY OF THE DIAGNOSTIC ACCURACY USING MAGNIFYING ENDOSCOPY WITH NARROW-BAND IMAGING FOR PURE SIGNET RING CELL CARCINOMA AND POORLY DIFFERENTIATED-TYPE COMPONENT MIXED WITH UNDIFFERENTIATED-TYPE ADENOCARCINOMA

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DOI 10.1055/s-0040-1704295

**Aims** Intramucosal undifferentiated-type early gastric cancers measuring < 2 cm without ulcers or scars, are positioned for the expanded indication of endoscopic submucosal dissection (ESD). However, the undifferentiated-type have been reported to have low curative resection rates compared with the differentiated-type. We have already reported that pure signet ring cell

carcinomas (pure-sig) have higher curability rates than undifferentiated-type adenocarcinomas component mixed with poorly differentiated-type (mixed-por). Mixed-por is an important factor for the non-curability of undifferentiated-type adenocarcinomas. Therefore, we investigated the diagnostic accuracy of magnifying endoscopy narrow-band imaging (ME-NBI) for pure-sig and mixed-por.

**Methods** We recruited 118 undifferentiated early gastric cancers in 116 patients treated with ESD between July 2005 and December 2016 at the Cancer Institute Ariake Hospital after excluding lesions in accordance with the exclusion criteria (62 mixed-por and 56 pure-sig lesions). The results of the biopsy, histological analysis of the ESD specimen, and ME-NBI findings were compared. ME-NBI findings were divided into two groups: those with or without irregular vessels. Using the ME-NBI combination method, mixed-por was diagnosed when the biopsy findings indicated mixed-por and/or it showed irregular vessels by ME-NBI.

**Results** 27/62 (43.5%) of final histological mixed-por lesions were diagnosed accurately by pre-treatment biopsy ( $p < 0.0001$ ). 52/62 (83.9%) of lesions had irregular vessels detected using ME-NBI ( $p < 0.0001$ ). Using the ME-NBI combination diagnostic method, a case that was mixed-por at pre-treatment diagnosis was confirmed in the final histological analysis ( $p < 0.0001$ ). The sensitivity and accuracy rates were significantly higher in the ME-NBI combination group than in the biopsy group ( $p < 0.05$ ).

**Conclusions** When we diagnose undifferentiated-type adenocarcinoma before ESD, the ME-NBI combination method will yield higher diagnostic accuracy for pure-sig or mixed-por compared to biopsy alone.

## OP278 LOW-GRADE DYSPLASIA IN BARRETT'S ESOPHAGUS IS DOWNGRADED IN HALF OF THE CASES AFTER SYSTEMATIC EXPERT PATHOLOGY REVIEW BEFORE PATIENT REFERRAL FOR ENDOSCOPIC TREATMENT

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DOI 10.1055/s-0040-1704296

**Aims** The aim of this study was to document the discrepancy between expert and community pathologists in grading Barrett's esophagus (BE) dysplasia before patient referral for endoscopic treatment.

**Methods** Between January 2017 and August 2019, sets of biopsy specimen from 129 dysplastic BE patients were referred from community centers to our tertiary referral center for expert pathology review as a prerequisite for dysplastic BE endoscopic management. These slides and blocks were reassessed by two gastro-intestinal (GI) expert pathologists. Diagnosis were stratified according Vienna Classification supported by p53 immunostaining. In this study, we retrospectively documented the discrepancy between expert and community pathologists in grading dysplasia in this selected BE population.

**Results** Low-grade dysplasia (LGD) was confirmed by expert pathologist in 33/68 patients (49%), 20 patients (29%) were downgraded to non-dysplastic BE (NDBE), 5 patients (7%) to indefinite for dysplasia (IFD) and 10 patients (15%) were upgraded to high-grade dysplasia (HGD), no cancer was missed. HGD was confirmed by expert pathologist in 52/61 patients (85%), downgraded to NDBE in 1 patient (2%) or to LGD in 4 patients (7%) and upgraded to adenocarcinoma (EAC) in 4 patients (7%).

**Conclusions** Discrepancy in BE dysplasia grading between community and tertiary referral centers is still high, especially for LGD. Community diagnosis of LGD is down-staged to NDBE in 49% of the cases after expert GI pathologist review. Therefore, skipping the expert pathology review step in LGD BE patients could lead to overtreat almost half of the patients.

## OP279 TARGETED VERSUS STANDARD NON-TARGETED BIOPSIES IN BARRETT'S ESOPHAGUS SURVEILLANCE

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DOI 10.1055/s-0040-1704297

**Aims** Barrett's Esophagus surveillance is performed with random 4-quadrant biopsy every-2cm to detect dysplasia complemented with targeted biopsies of suspicious lesions - Seattle Protocol. The main limitations are sampling error and costs associated with histology. The main aim was compare diagnostic yield, defined by dysplasia in the histology, of random biopsies with targeted biopsies.

**Methods** Cross-sectional-study, with consecutive inclusion of patients undergoing Barrett's esophagus surveillance, between 2015-2018. High-resolution scopes were used and Barrett's esophagus evaluation was performed under white-light endoscopy and in some cases complemented with Narrow-band-imaging. Random biopsies were performed in all patients. Additionally targeted biopsies were taken when focal lesions were suspected.

**Results** A total of 127 surveillance exams were included. High-definition- white-light endoscopy evaluation was complemented with Narrow-band-imaging in 40.2%(n=51). Random biopsies alone were performed in 112(88.2%) and complemented with targeted biopsies in 15(11.8%). diagnostic yield of random biopsies was significantly lower (2.7%;n=3) than targeted biopsies (40%;n=6) (p< 0.001). There was a significant association between targeted biopsies and dysplasia detection, both in white-light (p< 0.001) and Narrow-band-imaging assessment (p=0.002). Targeted biopsies reached a sensitivity of 85.7%.

**Conclusions** Targeted biopsies had a significantly higher diagnostic yield, either under white-light or with Narrow-band-imaging, compared to random biopsies.

## OP280 COLUMNAR-LINED OESOPHAGUS LESS THAN 1 CM ABOVE GASTRO-OESOPHAGEAL JUNCTION AND BARRETT'S OESOPHAGUS: COMPARATIVE MORPHOLOGICAL ANALYSIS

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**Aims** Barrett's oesophagus (BE) is a premalignant lesion of distal oesophagus. BOBCAT consensus defined BE as any type of columnar metaplasia higher than 1cm above gastro-oesophageal junction (GEJ). Though columnar-lined oesophagus (CLE) less than 1cm above GEJ is not well characterized. The aim of our study was to perform a comparative morphological analysis of BE and CLE less than 1cm above GEJ.

**Methods** We examined endoscopic biopsies of 92 patients: 26 with CLE less than 1cm above GEJ and 66 with BE, stained with haematoxylin-eosin. For accurate detection of goblet cells (GC) we used combined PASD/Alcian Blue stain. Patients with GS was subdivided into groups with single GS, low density GC (LDGC, count of GS < 50%) and high density GC (HDGC, count of GS >50%).

**Results** In patients with CLE < 1cm above GEJ cardiac-type metaplasia was found in 7 (26,92%), fundal metaplasia - in 10(38,46%) and intestinal - in 15 cases (57,69%); among them 5 had SGC (33,33%), 8 developed LDGC (53,33%) and 2 were found to have HDGC (13,33%).

The structure of metaplasia types in patients with BE was the following: cardiac-type metaplasia was found in 11 cases of BE (16,67%), fundal metaplasia - in 18 (27,27%) and intestinal metaplasia - in 44 patients (66,67%); among them SGC in 8 (18,18%), LDGC in 15 (43,09%) and HDGC in 21 patients (47,73%).

Reactive changes of epithelium presented in 34,62% CLE cases and in 28,79% BE cases and were associated with presence of GC. No findings of dysplasia were seen in CLE-patients. 8 BE patients with intestinal metaplasia had low-grade dysplasia (12,12%), 6 of them had HDGC, and 1 BE patient with cardiac-type metaplasia developed high-grade dysplasia (1,52%).

**Conclusions** High density of goblet cells was seen 3,5-folds more frequent in patients with BE and was associated with 66,67% cases of dysplasia.

## OP281 THE DIAGNOSTIC USEFULNESS OF E-CADHERIN AND EPIDERMAL GROWTH FACTOR (EGF) IN SYMPTOMATIC GASTRO-ESOPHAGEAL REFLUX DISEASE

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DOI 10.1055/s-0040-1704299

**Aims** The aim of our study is to evaluate the utility of fasting E-cadherin and EGF levels in serum and saliva as a non-invasive test to predict the presence of gastro-oesophageal reflux disease in patients with typical, atypical or extra-esophageal symptoms compared with healthy volunteers and to find any correlation among E-cadherin or EGF levels and patients' characteristics, symptoms or endoscopic findings.

**Methods** In our observational, single institution and two-arm study we enrolled 60 patients undergoing upper GI endoscopy and 20 healthy volunteers. All the subjects filled GERD-HRQL and RSI questionnaires at the time of enrollment. We collected, centrifuged and froze (-80°C) the salivary and serum samples before analyzing them using an ELISA test. Eventually, we analyzed data obtained with SPSS.

**Results** Our study shows that E-cadherin concentration is statistically higher in patients' serum (p = 0.003) and even more in salivary samples (p < 0.001). Also, the salivary E-cadherin is statistically higher (p = 0,038) in patients with almost an extra-esophageal symptom. In addition, we demonstrate that salivary and serum E-cadherin concentration in patients with ERD and NERD is statistically higher (p = 0,001; p = 0,003) than in controls. Furthermore, we demonstrate that patients' serum E-cadherin concentration is related to the BMI (p < 0.001) and to age (p = 0.02). The salivary EGF level is statistically higher in patients than in controls (p = 0.03), while the serum concentration is similar. Also, in NERD patients the salivary EGF is statistically higher than in controls (p < 0,05).

**Conclusions** Our study proved that salivary and serum E-cadherin and salivary EGF are specific biomarkers of acid-induced epithelial injury in GERD. Finally, salivary E-cadherin is a specific test for patients with almost an extra-esophageal symptom.

## OP282V A DEEP LEARNING METHOD FOR DELINEATING EARLY GASTRIC CANCER RESECTION MARGIN UNDER CHROMOENDOSCOPY OR WHITE LIGHT ENDOSCOPY

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DOI 10.1055/s-0040-1704300

**Aims** The aim of this study was to validate real-time fully convolutional networks (FCNs) to delineate the resection margin of early gastric cancer (EGC) under indigo carmine chromoendoscopy (CE) or white light endoscopy (WLE).

**Methods** We trained FCNs named “ENDOANGEL”. ENDOANGEL was tested in still images and ESD videos, and compared with ME-NBI based on post-ESD pathology by endoscopy-pathology point-to-point marking.

**Results** In ESD videos, resection margins predicted by ENDOANGEL covered all areas of cancer. The minimum distance between margins predicted by ENDOANGEL and cancerous boundary was  $3.27 \pm 1.35$  mm, outperforming ME-NBI.

**Conclusions** ENDOANGEL has the potential in delineating resection extent of EGCs.

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Friday, April 24, 2020

14:30 – 16:30

Exploring the underworld: Upper GI      Wicklow Meeting Room 1  
submucosal therapy

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### OP283 THE “TUNNEL + CLIP” STRATEGY, A SAFE TECHNIQUE THAT FACILITATES OESOPHAGEAL ENDOSCOPIC SUBMUCOSAL DISSECTION: A FRENCH BI-CENTRIC PROSPECTIVE OBSERVATIONAL STUDY

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DOI 10.1055/s-0040-1704301

**Aims** Endoscopic submucosal dissection (ESD) is the treatment of choice for superficial neoplasia of the oesophagus. ESD requires a high level of skill, being both technically challenging and time consuming. Therefore, ESD is often reserved for experts. A combination of the tunnel technique associated with clip + wire traction has been described as being able to optimize the performance of oesophageal ESD.

**Methods** Between January 2015 and August 2019 we performed a prospective two-centre case study of consecutive “tunnel + clip” oesophageal ESD. Three young operators (each of whom had performed fewer than 50 ESDs and fewer than five oesophageal ESDs) treated patients requiring ESD using the tunnel + clip method. This involves realization of a tunnel beneath the lesion, with constant traction being applied by a clip with a line connected to a metal forceps placed at the oral side of the tunnel.

**Results** Eighty-seven lesions (27 squamous cell carcinoma and 60 adenocarcinoma / high grade dysplasia on Barrett’s oesophagus) were consecutively resected. The rates of en bloc resection, R0, and curative resection were respectively 98.85% (86/87), 86.2% (75/87) and 75.86% (66/87). One perforation occurred (1.14%), treated medically (no surgery). Three post-procedure bleeding were noted (3.44%). The mean ESD velocity was 28,485 mm<sup>2</sup>/min for lesions of mean length 56.89 mm. The tunnel + clip approach greatly aided the procedure. No pathological damage caused by clipping was evident.

**Conclusions** The use of the tunnel + clip to perform oesophageal ESD is effective and safe even when performed by operators with low experience. It is the largest western series of oesophageal ESD showing R0 resection rate similar to that of Japanese experts [2], with a dissection speed rate even higher [3]. The performances of this technique should encourage the development of oesophageal ESD in Western countries.

### OP284 SAFETY OF COLD SNARE POLYPECTOMY FOR DUODENAL ADENOMAS IN PATIENTS WITH FAMILIAL ADENOMATOUS POLYPOSIS: PRELIMINARY RESULTS OF A PROSPECTIVE COHORT STUDY

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DOI 10.1055/s-0040-1704302

**Aims** Duodenal adenomas occur in up to 90% of patients with familial adenomatous polyposis (FAP), and patients with advanced-stage duodenal adenomas had a quite high risk of developing duodenal cancer (7%-36%). Cold snare polypectomy (CSP) for multiple duodenal adenomas in patients with FAP was feasible in a prospective pilot study, and a prospective cohort study to investigate the efficacy (down staging of Spiegelman score) is ongoing. The aim of the present study is to confirm the safety of this procedure in a large cohort.

**Methods** This is a preliminary analysis of a single center prospective cohort study including consecutive patients with FAP and multiple duodenal adenomas. Patients underwent CSP for multiple duodenal adenomas. Backgrounds of the participants, procedural outcomes and adverse events related to the procedure was assessed.

**Results** 59 patients [median (range) age: 37 (20-70), 29 male (49%)] were enrolled and two of them did not undergo CSP because they underwent papillectomy or underwater endoscopic mucosal resection. Therefore, CSP was performed for 57 patients with 2406 [median (range) number of polyps in each patient: 39 (5-166)] duodenal polyps from June 2016 to March 2019. The median (range) procedure time was 33 (15-96) minutes. 17 (30%) patients had polyps in 1<sup>st</sup> part of the duodenum, 56 (98%) in 2<sup>nd</sup> part, and 36 (63%) in 3<sup>rd</sup> part. Median (range) size of maximum and minimum removed polyp in one session was 10 (2-50) and 2 (1-12), respectively. One patient developed arterial bleeding during the procedure, but the bleeding was managed using hemoclips but none of the 57 patients had perforation and delayed bleeding.

**Conclusions** The safety of CSP for multiple duodenal adenomas in patients with FAP was confirmed in a large cohort. The long-term efficacy of this procedure will be reported after 1-year follow-up.

### OP285 CAP-ASSISTED ENDOSCOPIC SEPTOTOMY OF ZENKER DIVERTICULUM (ZD): EARLY AND LONG-TERM OUTCOME

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DOI 10.1055/s-0040-1704303

**Aims** Minimally invasive flexible endoscopic septotomy (FES) techniques to manage ZD have been increasingly favored over the past 20 years even though long-term outcome data are scanty.

**Methods** From January 2010 to December 2017, naïve patients treated with FES were identified. Endoscopic procedures were performed with a flexible endoscope with a cap and a single incision septotomy using Hook Knife. Eight hours after the procedure, patients resumed clear liquid diet that was maintained for 24 hours with a subsequent gradual transition to a regular diet over 3 days. Data collected and analyzed included patient, diverticulum and endoscopic technique items as well as early and long-term outcome. Dakkak and Bennett dysphagia scale was used to rate the dysphagia. Persistent complete or

near-complete resolution of symptoms was defined as clinical success. Postprocedural complications have been reported according to ASGE lexicon. Recurrence was defined as symptoms reappearance with endoscopic or fluoroscopic evidence of residual diverticular septum.

**Results** Overall 256 consecutive naïve patients were treated. The procedure was successfully completed in all scheduled patients, with an average operational time of 18.5 minutes. 92.2% of the cases was performed under deep sedation. Patients were treated in 52.3% of cases in outpatient regimen with an average hospitalization time of 1.6 days. Early clinical success was observed in 96.1%. Complications occurred in 3.5% (9/256) of patients and in 77.8% (7/9) were moderate with no fatal event. Only patient required surgical approach to manage the complication. Recurrence occurred in 31.3% (80/256) of treated patients after median time of 9 months (5.5-24) and all recurrences were successfully retreated by FES. At an average follow-up of 5.5 years, 95.1% of patients were asymptomatic.

**Conclusions** Early and long-term results confirm that cap-assisted with hook-knife FES is a safe and effective treatment modality for patients with ZD.

### OP286 COMPARISON OF PERORAL ENDOSCOPIC MYOTOMY BETWEEN DE-NOVO ACHALASIA AND PRIOR TREATMENT FAILURE ACHALASIA

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DOI 10.1055/s-0040-1704304

**Aims** Peroral endoscopic myotomy (POEM) has been recognized as an effective treatment for patients with achalasia. Prior treatment can affect the outcome of subsequent treatment. We aimed to compare the safety and efficacy of POEM in treatment-naïve patients vs. those with prior treatment failure (PTF).

**Methods** We analyzed achalasia patient's data underwent POEM from November 2011 to January 2018, retrospectively. A comparative analysis was performed between treatment-naïve and PTF cases. Technical and clinical success, adverse events, and operative time for POEM were compared between the two groups.

**Results** Overall, 209 patients with achalasia underwent POEM during the study period: 113 patients (54%) in the de-novo group and 96 patients (45%) in the PTF group. Changes in Eckardt score before and after POEM ( $5.11 \pm 0.23$  vs.  $4.99 \pm 0.253$ ;  $P=0.042$  vs  $P=0.001$ ) were comparable in the treatment-naïve and PTF cases, respectively. Operative time was longer in the PTF group than in the de novo group, but not statistically significant. Occurrence of gas-related events and severe complications were similar in both groups. The operation time, hospital stay, length of myotomy were not significant different in both groups.

**Conclusions** POEM is safe and equally effective for de-novo patients and for those in whom prior treatment has failed. POEM should be considered the treatment of choice in patients in whom prior treatment has failed.

### OP287 ENDOSCOPIC MYOTOMY IN ZENKER'S DIVERTICULUM - EFFICIENCY, COMPLICATIONS AND RECURRENCE RATE

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DOI 10.1055/s-0040-1704305

**Aims** These days endoscopic myotomy in patients with Zenker's diverticulum is an established therapy. No need for general anaesthesia and less invasiveness are advantages of the endoscopic therapy, but the high recurrence rate compared to the surgical therapeutic options are a problem. In this retrospective study we report the efficiency and complications in patients treated endoscopically for Zenker's diverticulum at our hospital since 2010.

**Methods** From a database we retrospectively analysed the technical implementation of the procedure and complications afterwards. A telephone survey was carried out to assess symptoms pointing to recurrence of the diseases.

**Results** From 01/2011 to 09/2019 85 patients with an average age of 72,14 (59-95) years were treated with endoscopic myotomy for Zenker's diverticulum. In 7 patients transoral stapling was not possible and in one patient an endoscopic attempt was unsuccessful in the past. The diverticulotomy was carried out with the needle knife (n=80), APC (n=3) or SB-knife (n=2). In 81 patients (95%) the diverticulotomy was completed in one sessions, in 4 patients a second procedure was necessary. There was one perforation which was treated with fasting and antibiotics. In two patients there was a collar emphysema without clinical relevance. The follow-up was 34,4

(3-106) month with clinical response in all patients. In 15 patients (17,76%) there was a recurrence with in median 12,56 (2-48) month after initially treatment. In all patients treated with APC there was a recurrence of the disease. Furthermore the recurrence rate was higher in the first half of the observation period (5/20 versus 5/40) An endoscopic treatment of the recurrent diverticulum was possible without complications.

**Conclusions** The endoscopic myotomy is an effective and save procedure in patients with Zenker's diverticulum. The high recurrence rate is the main disadvantage, but it probably can be reduced with a resolute complete myotomy of all muscle fibres.

### OP288 ENDOSCOPIC CLIPS VERSUS ENDOSCOPIC SUTURE FOR MUCOSAL CLOSURE AFTER PER-ORAL ENDOSCOPIC PYLOROMYOTOMY: A PROSPECTIVE STUDY

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DOI 10.1055/s-0040-1704306

**Aims** G-POEM is an emerging method for treatment of gastroparesis. Safe mucosal closure is necessary to avoid adverse events. The aim of this prospective study was to compare the effectivity of two closure methods: clips (Resolution™ or Instinct™) and endoscopic suturing (ES, Apollo OverStitch™) in patients undergoing G-POEM.

**Methods** A single center, prospective study (NCT:03679104). All pts, who underwent G-POEM in our centre and agreed to participate were enrolled. The closure method was assigned at the discretion of an endoscopist prior to the procedure. The main outcome was the proportion of subjects with successful closure. Unsuccessful closure was defined as a need for a rescue method, or a need for an additional intervention (e.g. in case of leak). Secondary outcomes were easiness of closure (measured by a visual analogue scale; 0=impossible/10=very easy, scored by endoscopist and nurse) and closure time.

**Results** A total of 25 patients [M:F/11:14; mean age, range: 49.2 (26-74)] have been included; 15 received ES and 10 clips (mean 6; range 5-19). All patients with ES had successful closure. One patient with clips needed a rescue method (KING closure with endoloop) and another patient needed additional clipping because of a leak on POD1. The remaining 8 patients (80%) had a successful closure with clips. Closure with clips was quicker (mean closure time 10.3 min (range 4-15) vs 14 (5-20);  $p=0.048$ ). Endoscopist tended to assess closure with ES easier compared to clips (mean VAS for ES 7.4 (3-10) vs. 6.4 (3-10) for clips;  $p=0.25$ ). A nurse assessed easiness of both closure methods as comparable ( $p=0.68$ ).

**Conclusions** Endoscopic suturing system may be more reliable than clipping for mucosal closure in patients undergoing G-POEM. Besides clips, centers performing G-POEM should have an alternative (rescue) closure method. (Supported by a grant from the Czech Ministry of Health 17-28797A).

## OP289 THE NATURAL CLINICAL COURSE AFTER PER-ORAL ENDOSCOPIC MYOTOMY: IS MICROBIAL TRANSLOCATION THE KEY? A PROSPECTIVE RANDOMIZED CLINICAL TRIAL

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DOI 10.1055/s-0040-1704307

**Aims** Microbial-translocation(MT)is the passage of viable/nonviable-microbes across the GI-barrier. The presence of Lipopolysaccharides(LPSs)in plasma has been correlated to sepsis/septic shock through inflammation(IN)activation via the production of soluble-CD14(sCD14)and LPS-binding-protein(LBP)which initiates cytokines(IL-6,IL-1b,TNF- $\alpha$ ). Considering POEM a clean-contaminated procedure, it should be assessed whether the post-POEM fever/inflammation is cytokine-mediated/infection-related. Our aim was to evaluate the presence of IN-mediators, bacteremia and MT post-POEM.

**Methods** All consecutive POEM patients were enrolled and randomized in two groups: Group-A(only prophylaxis) and Group-B(prophylaxis+short-therapy).At planned timing(T0:before-POEM;T1:after-POEM;T2:24hours after-POEM) we evaluated plasma dosage of IL-6(IN),IL-1 $\beta$ (IN),TNF- $\alpha$ (IN),sCD14(MT),LPB(MT). Blood cultures(BC) and body temperature(BT)were collected at T0,T1,T2,WBCs and C-reactive-Protein(CRP)was evaluated at T0,T2.(NCT:03587337)

**Results** None of the enrolled patients(n=124), experienced post-op fever (p=ns) except for 1 in Group-B(BT:t2 38.2°C). Both groups showed post-POEM systemic-inflammation:CRP and WBCs increased from t0 to t2(p< 0.0001). No difference between the groups:t2:CRP(p=0.99),t2:WBC(p=0.44). IL-6 increased from t0 to t2(p=0.018). IL-1b and TNF- $\alpha$  decreased from t0 to t2:IL-1b (p=0.023),TNF- $\alpha$ (p=0.055). MT-markers increased from t0 to t2,sCD14 (p=0.022),LBP(p< 0.0001). No marker showed any difference between groups. We found correlations at t2 between IL-6 with:TNF- $\alpha$ (p< 0.0001),IL-1b(p< 0.0001) and CRP(p< 0.007). At t2, LBP did not correlate with:WBCs(p=0.29), CRP(p=0.42), nor with BT(p=0.82). At t1, BC were positive in 5 patients(4%), 4 in Group-B, 1 in Group-A. All negative at further analysis(t2).

**Conclusions** After POEM, a certain degree of MT, expressed by sCD14 and LBP, occurs. Given the absence of a post-operative clinical-manifestation(fever), it is understandable that, thanks to the prophylaxis/short therapy, the risk of developing infective-sequelae(bacteremia/sepsis) is counteracted. A low rate of bacteremia post-POEM was reported(4%); since the negativity of blood cultures at t2 and no clinical-correlates were present, it appears transient; POEM might be therefore considered as a safe procedure. Not finding any clinically/statistically significant difference among the two groups we proved that a prolonged short-therapy exceeds the need of avoiding the infectious risk and that the single antibiotic prophylaxis appears to be the correct approach.

## OP290V TWO PENETRATING VESSELS AND SLING FIBERS AS A GUIDE FOR TUNNELING AND MYOTOMY IN THE POSTERIOR POEM

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DOI 10.1055/s-0040-1704308

**Background** Increase in GERD could be associated with posterior POEM due to the cutting of sling fibers (SF). Recently, it has been described presence of two penetrating vessels (TPV) as a guide for myotomy.

**Endoscopic findings** Mucosotomy with conventional tunneling. First penetrating vessel usually located overstepping Cardia at 5-6 o'clock, and the second at 3-4 o'clock two cm distally to the first one. SF identified towards the left edge of TPV. Gastric Myotomy performed moving forward to the right side of the TPV.

**Conclusions** TPV could be benchmarks to the tunnel ends and a guide for selective myotomy preserving SF in posterior POEM.

## OP291V SEVERE DEFERRED BLEEDING AFTER POEM, ENDOSCOPIC RESOLUTION OF THE CASE

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DOI 10.1055/s-0040-1704309

Minor complications in POEM are the most frequent and mainly the ones related to gas. Capoperitoneum/mediastinal, in 10% of cases. Deferred bleeding in 0.8%.

A 56-year-old-male with a family history of von Willebrand disease, POEM is performed due to type-II achalasia.

On day 10 postoperative develops retrosternal pain and hematemesis. Tac shows a large esophageal collection that compresses the left atrium.

The cavity is entered, cleaning it of clots until the compression is reduced enough to get into the stomach. The mucosotomy is sutured with Apollo, and a fully covered Stent is positioned, which is also sutured to prevent migration.

## OP292V IS TWO BETTER THAN ONE? ALTERNATIVE TECHNIQUES FOR G-POEM

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DOI 10.1055/s-0040-1704310

**Background** The distance between muscular edges after standard G-POEM is short, potentially leading to sphincter reforming. We present two alternative techniques that may reduce this risk.

**First case: double myotomy with muscular snare resection.**

Two parallel pyloromyotomies were performed along the greater curvature. The residual muscular tissue between them was resected with a cold snare, resulting in a wide distancing of the muscular edges.

**Second case: double tunnel myotomy.**

Two pyloromyotomies were performed, one along the greater curvature and one along the lesser curvature. The resection of the pylorus at two different sections should reduce the risk of sphincter reforming.

## OP293V SUBMUCOSAL TUNNELING ENDOSCOPIC SEPTUM DIVISION OF A ZENKER DIVERTICULUM (Z-POEM)

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DOI 10.1055/s-0040-1704311

**Aim** Endoscopic treatment of a 73 years old female with a symptomatic 3.5 cm Zenker's diverticulum (ZD).

**Method** Submucosal tunneling endoscopic septum division (STESD), inspired by POEM technique was performed. Through a longitudinal incision performed on a submucosal bleb 2.5 cm above the ZD septum, a submucosal tunnel was

created towards the septum and extending underneath, exposed cricopharyngeal muscle (CM) on both sides. Myotomy of the CM was followed up to the bottom of the diverticulum. Clips were used to close the initial incision.

**Results-Conclusions** Treatment was successful with no complications. STESD is effective and safe therapy for ZD.

### OP294V DEFINITIVE ENDOSCOPIC TREATMENT FOR NEUROENDOCRINE DUODENAL TUMOR WITH ENDOSCOPIC SUBMUCOSAL DISSECTION AND FULL-THICKNESS RESECTION

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DOI 10.1055/s-0040-1704312

70-year-old woman with comorbidity. 15 mm well-differentiated neuroendocrine tumor in the duodenal bulb. The multidisciplinary team meeting decided endoscopic treatment. EMR was attempted, but due to the non-lifting sign, we performed an ESD. Severe fibrosis / infiltration on the muscular layer was found. Traction strategy with clips and rubber band allowed complete *en bloc* ESD. The vertical margin was positive. The patient was a poor surgical candidate so endoscopic full-thickness resection was planned. The clip was deployed but the preloaded snare broke. A conventional snare was used. No residual tumor was detected. CT scan and scintigraphy were negative at 6 months.

Friday, April 24, 2020

14:30 – 16:30

Keeping the lumen

Liffey Meeting Room 2

### OP295 SAFETY OF THE SELF-EXPANDABLE METAL STENTS FOR METASTATIC COLORECTAL CANCER PATIENTS WITH BEVACIZUMAB THERAPY

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DOI 10.1055/s-0040-1704313

**Aims** Self-expanding metal stents (SEMS) can be considered as initial treatment for malignant colorectal obstruction (MCO) in the palliative setting. Avastin (Bevacizumab), a monoclonal antibody targeting the vascular endothelial growth factor (VEGF) receptor is the first anti-angiogenesis drug used in colorectal cancer. However, data on the safety of bevacizumab-based therapies for patients carrying a SEMS for occlusive colon cancer are lacking. We aimed to evaluate the safety and clinical outcomes of the SEMS for MCO during bevacizumab-based chemotherapy.

**Methods** 158 patients with metastatic colorectal cancer (Stage IV cancer) were treated with bevacizumab at SoonChunHyang Bucheon Hospital between September 2014 and September 2019. We divided two groups according to whether or not performing SEMS insertion and retrospectively analyzed clinical features and adverse events related treatment.

**Results** A total of 76 patients received bevacizumab for palliative chemotherapy. Among them, 28 patients underwent SEMS insertion during bevacizumab treatment. The mean duration of bevacizumab treatment was 13.3 ± 9.3 months. Bowel perforation rates was 8.3% (4/48) in no stenting group and 7.1% (2/28) in stenting group, without statistical significance. However, two patients with bowel perforation underwent bevacizumab resolved by conservative treatment without surgical procedure.

**Conclusions** The bowel perforation rates were not higher in the SEMS inserted patients compared not inserted patients during bevacizumab, although this should be further validated in a larger population.

### OP296 LONG-TERM ONCOLOGIC SAFETY OF SELF EXPANDABLE METAL STENT AS A BRIDGE TO SURGERY FOR OBSTRUCTING COLON CANCER

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DOI 10.1055/s-0040-1704314

**Aims** About 10-25% patients of colorectal cancer suffer from acute colonic obstruction. Traditional management of acute malignant bowel obstruction has focused on emergency resection but showed high mortality and morbidity rates. Recently, placement of a self-expanding metal stent(SEMS) was widely used and SEMS seems to be as a safe and effective “bridge to surgery” and to offer good palliation. But there is concern about long-term survival after the use of SEMS. To identify oncologic safety, we surveyed long-term survival of malignant colonic obstruction using SEMS placement.

**Methods** This retrospective study included 303 patients who presented in Korea University Anam Hospital between 2006 and 2014 with obstructing CRC, and underwent surgical resection. Patients were divided into two groups: the “SEMS” group included 148 patients who underwent endoscopic stent as a bridge to surgery, and the surgery group included 155 patients who underwent emergency or elective surgery. In addition, candidates for curative resection were identified (98 patients in “SEMS” group vs 101 patients in “surgery” group). The clinicopathologic characteristics, overall survival(OS), and recurrence-free survival (RFS) were compared between the two groups.

**Results** There was no significant difference in demographics, tumor stage between the two groups. The median follow-up times were 48.5 months (IQR, 19.1-73.1 months) for the SEMS group and 39.4 months (IQR, 15.1-39.4 months) for the surgery group. There was no significant difference in 5-year OS rate between two groups (59.6% vs 56.8%; p = 0.3). The 5-year RFS rate did not significantly differ between two groups (71.0% vs. 61.3%; p = 0.221). The long-term oncologic safety did not significantly differ between two groups in either the 5-year OS rate (79.5% vs 74.5%; P=0.6), or the 5-year RFS rate (95.8% vs 95.8%; P=0.3).

**Conclusions** SEMS as bridge to surgery in obstructive CRC did not worsen the long-term oncologic outcomes compared to those of surgery.

### OP297 EVAC THERAPY FOR RECTAL ANASTOMOTIC LEAKS AND PERFORATION

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DOI 10.1055/s-0040-1704315

**Aims** Rectal perforation and anastomotic leaks or fistula occurring after colorectal surgery are difficult to treat situation burdened by considerable morbidity, costs and highly stressful for the patient. The incidence of anastomotic leakage reaches 24% of patients undergoing colorectal surgery. Near a quarter of these result in a permanent intestinal stoma. Small leakages are usually managed endoscopically. However, in most of cases diagnosis is delayed and leakages are wider, leading to perineal collection with possible serious complications requiring invasive procedure and surgical re-intervention. In this patients, endovac therapy (Endo-SPONGE; B. Braun Medical) represents a minimally invasive option to treat post surgical leak or rectal traumatic perforation

**Methods** From 2011 to september 2019, we retrospectively reviewed 40 patients (31 male) treated with evac therapy in our hospital for post surgical anastomotic leakage in 36 of them (29 for cancer, 5 for acute diverticulitis, 2 for inflammatory bowel disease) and for rectal traumatic perforation in 4.

**Results** Following evac treatment, a complete healing of leakage was achieved in 34(85%). Overall, restoration of bowel continuity was possible in 32 patients (80%). The sponge was changed a median number of 8(range 4-22)and the median treatment duration was 32 days(range 18-60). Complications were

reported in two patients. In one case there was a serious bleeding due to artery erosion. In the second patient a small bowel fistula occurred required a surgical re-intervention. In six patients evac therapy showed lack of efficacy and all of them were in the post surgical anastomotic leakage group, one underwent to Hartmann procedure for acute diverticulitis with sigmoid perforation and 5 were previously chemo and radio treated for locally advanced rectal cancer.

**Conclusions** In this large series, evac treatment with Endo-sponge has showed good effectiveness and safety both in patient with post surgical anastomotic leaks and rectal perforation, reducing the need of re intervention and major surgery

## OP298 RISK FACTORS OF FAILURE AND COMPLICATIONS FOR ENDOSCOPIC COLORECTAL STENTING

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**DOI** 10.1055/s-0040-1704316

**Aims** Stenting is an effective method of decompression for patients with malignant colorectal obstruction. Widespread adoption is restricted due to relatively high rate of failure and complications. According to publications, we have very limited and unsystematic data about risk factor. The aim of our study was to analyze the factors influencing the occurrence of failure and complications after colorectal stenting.

**Methods** We carefully studied cases of 242 patients with malignant colorectal obstruction who received endoscopic SEMS insertion from December 2012 to September 2019.

**Results** The technical success rate was 92.3%. Insufficient experience in performing ERCP and stenting (less than 50 and 25 interventions) and use of standard intervention techniques (colonoscope + catheter with guidewire) were risk factors for failure (odd ratio 4.229; 95% CI, 1.356-13.189). After successful procedure, in 12 (5.1%) patients perforation was recognized on 1-20 days. One patient has silent perforation (intraoperative finding), in 1 case - autopsy finding. Severe obstructive symptoms (11-15 points on the Colon Obstruction Score (odd ratio 7.2432; 95% CI, 1.040-28.787) and 0-1 on the CROSS scale odd ratio, (odd ratio 4.439; 95% CI, 0.48-0.59) were perforation-related factors for the entire sample of cases. Additionally, stage T4b was risk factor of tumor perforations (odd ratio 7.87; 95% CI, 2.040-12.508), and cecum dilatation on X ray more 10 cm was significantly associated with occurrence of perforation in right colon (odd ratio 2.602; 95% CI, 1.279 - 5.634). We did not find statistically significant risk factors associated with stent migration and ingrowth.

**Conclusions** SEMS placement remains operator dependent intervention and should be performed by an expert endoscopist. It's necessary to conduct trainings in reference centers. Severity of obstructive symptoms was significantly associated with occurrence of perforation. In order to reduce perforation rate, clinicians should pay more attention when performing SEMS placement and monitoring patients with these risk factors.

## OP299 EFFICACY OF UNCOVERED COLONIC STENTS FOR EXTRINSIC VERSUS INTRINSIC MALIGNANT LARGE BOWEL OBSTRUCTION

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**DOI** 10.1055/s-0040-1704317

**Aims** Previous studies evaluating self-expandable metal stents (SEMS) for management of malignant extrinsic colon obstruction have yielded conflicting results. We evaluated the efficacy of uncovered colonic stent placement for patients with extrinsic colon malignancy (ECM) versus intrinsic colon malignancy (ICM).

**Methods** Retrospective review of all patients referred for colonic SEMS at a tertiary cancer center between 2007-2018 was performed. Primary outcome measures were technical success, clinical success, intervention rate and overall survival.

**Results** 138 patients with ECM and 119 patients with ICM underwent attempted stent placement. The rectum and/or sigmoid colon was the most common stricture site. Technical success was lower in the ECM group [86% vs 96% (p = .009)]. Clinical success was lower in the ECM group both at 7 days [82% vs 95% (p = .004)] and at 90 days [60% vs 86% (p < .001)]. Subsequent intervention was required more frequently [44% vs 34%; p = .002] and earlier [median 9 vs 132 days; p < .001] in the ECM group. Median overall survival in the ECM group was 92 vs 185 days. Among predictive variables analyzed, the ECM group had a higher frequency of peritoneal metastasis (87% vs 32%; p < .001), multifocal strictures with requirement for multiple stents (20% vs 6%; p = .002), sharp angulated strictures (39% vs 25%; p = .036) and radiation therapy (21% vs 10%; p = .019).

**Conclusions** Colonic SEMS for ECM is associated with lower technical and clinical success with higher intervention rates compared with ICM. Our findings can be used to better inform patients and referring providers as well as guide new stent design to enhance efficacy in this population.

## OP300 ENDOSCOPIC TREATMENT OF RECTAL ANASTOMOTIC DEHISCENCES - SINGLE-CENTRE EXPERIENCE

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**DOI** 10.1055/s-0040-1704318

**Aims** Advances in rectal carcinoma surgery have dramatically increased the number of sphincter-saving procedures. However, an increase in anastomotic dehiscences (AD) was concomitantly observed.

Endoscopic treatment of AD in the rectum, through clips or endoluminal vacuum therapy (Endo-SPONGE B-Braun Medical), appears to be effective in selected cases, sparing patients from definitive colostomies.

**Aims** To evaluate the safety and efficacy of endoscopic treatments in rectal AD closure.

**Methods** Retrospective single-centre study. All patients with rectal AD (08/2015 - 07/2019) submitted to endoscopic treatment were evaluated.

Clinical data, endoscopic treatments used in AD, and their complications and efficacy were analysed.

**Results** 10 patients with rectal AD were included [5 males, mean age at diagnosis: 56,6 years (36-72)]. Cancers were mostly in the middle rectum (5/10). All patients had received neoadjuvant therapy followed by anterior resection of the rectum with mechanical anastomosis and protective colostomy.

Median time between AD diagnosis and endoscopic treatment was 9,5weeks (1-58) and between surgery and endoscopic treatment was 25,5weeks (3-165).

The following endoscopic methods were used: Endo-SPONGE (5/10), Endo-SPONGE + OTSC (1/10), Endo-SPONGE + TTS Clips (1/10) and TTS Clips (3/10), depending on the size of the dehiscence.

Patients submitted to Endo-SPONGE required a median of 10 (4-17) sessions [1 sponge per session (5/7); 2 sponges per session (2/7)]. There was a major complication in a case with complete dehiscence (Endo-SPONGE migration to the peritoneal cavity requiring surgery for removal) and therefore definitive colectomy was performed. 2 patients received adjuvant chemotherapy while in treatment.

Endoscopic treatment was successful in 9 patients, allowing bowel reconstruction (already performed in 5, scheduled in 4).

**Conclusions** Endoscopic treatment of rectal AD is safe and effective and should be tried in selected cases, since it may significantly improve the quality of life of these patients.

### OP301 ENDOSCOPIC FULL-THICKNESS RESECTION OF COLORECTAL LESIONS: A SPANISH SINGLE-CENTER INITIAL EXPERIENCE

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DOI 10.1055/s-0040-1704319

**Aims** Endoscopic full-thickness resection (eFTR) is an innovative technique for the treatment of colorectal lesions that are difficult to approach or not subsidiary of mucosal resection or endoscopic submucosal dissection, allowing en bloc resection and avoiding unnecessary surgeries. Indicated in diverticular or appendicular lesions, non-lifting lesions (recurrent/residual lesions and non-treated lesions), early cancer and subepithelial lesions, it is based on the "over-the-scope-clip" technology. We retrospectively evaluated the feasibility, usefulness and safety of eFTR with the full-thickness resection device (FTRD, Ovesco Endoscopy, Tübingen, Germany).

**Methods** All patients undergoing eFTR between November 2016 and November 2019 in Spanish single-center were included. To determine the technical success, we studied the number of macroscopic complete en bloc resections. Secondary outcomes were: histologically confirmed radical (R0) resections, full-thickness resections and adverse events. Standard descriptive statistics were used.

**Results** 9 patients were included. The mean age was 62 years and 78% of the patients was male. Indications were: appendicular lesions (n=6), non-lifting sing recurrent lesions (n=2), non-lifting sing untreated lesion (n=1). In 1 patient eFTR was not possible due to impossibility to pass the sigma with the device. Technical success was achieved in 100% (n=8/8). The mean diameter of the lesion was 14 mm. Full-thickness resection was histologically confirmed in 100% (n=8/8). R0 resection was 87.5%. Final histology: high-grade dysplasia tubulovillous adenoma (n=2), low-grade dysplasia sessile serrated adenoma (n=2), high-grade dysplasia tubular adenoma (n=1), low-grade dysplasia tubular adenoma (n=1), hyperplastic polyp (n=1) and nodular lymphoid hyperplasia (n=1). There were no complications and the hospital stay was 24 hours in all cases. No recurrences or residual tissues were detected during follow-up.

**Conclusions** eFTR is a safe, useful and feasible technique that allows an accurate histological diagnosis, avoiding in some patients the need for surgery.

### OP302 OTSC AND STENTS IN PATIENTS WITH POST-SURGICAL LEAKS INVOLVING THE LOWER GASTROINTESTINAL TRACT: A SINGLE CENTER ANALYSIS OVER A 10 YEAR PERIOD

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DOI 10.1055/s-0040-1704320

**Aims** Post-surgical fistula following gastrointestinal surgery may represent a dreadful event, associated both to high morbidity, mortality and increased health costs. We described a large series of patients with post-surgical leaks involving the lower gastrointestinal tract managed endoscopically.

**Methods** This was a retrospective analysis of prospectively collected cases. Data have been collected in a single endoscopic tertiary center from January 2010 to June 2019. Interventions included: over-the-scope clip (OTSC) and placement of a partially or fully covered metal stent (SEMS).

**Results** A total of 58 patients (mean age 61.5±12.8, range 34-92; 35 males) underwent endoscopic treatment for a perianastomotic leak (dehiscence or fistula) in the lower gastrointestinal tract. A multidisciplinary approach (radiological, surgical and nutritional support) was scheduled in all cases.

The series included leaks developed after anterior rectal resection (n=14), left colectomy (n=17), sigmoid colectomy (n=5), subtotal colectomy (n=2), right colectomy (n=4), segmental colonic resection (n=6), total colectomy (n=1), ileal resection (n=4), hysterocolectomy (n=4) and prostatectomy (n=1). A laparoscopic surgical approach was performed in 28 (48,3%) patients. The intestinal leak was classified as early in 20 (34.5%) cases and delayed in 38 (65.5%) patients. Despite a technical success obtained in 56 cases (96,6%), a long term clinical success was observed in 37 (64%) patients. Overall, leak closure failed in 21 (36%) patients, managed surgically. Major endoscopic procedure complications were two colonic perforations in patient treated with SEMS.

Regarding the clinical success rate no statistically significant differences were found between patients treated with a single or multiple devices (p=0.99) and between patients with an early or delayed leak (63.8% vs 61.1%; p=0.73).

**Conclusions** Both stents and OTSC have revolutionized the management of patients with lower anastomotic leaks establishing a less expensive and invasive alternative treatment.

### OP303V SUCCESSFUL ENDOSCOPIC TREATMENT OF STRICTURE OF URETEROENTERIC ANASTOMOSIS BY IMPLANTATION OF BILIARY FULLY COVERED METAL STENT

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DOI 10.1055/s-0040-1704321

A 67-year-old male underwent renal transplantation with an ileal conduit urinary diversion due to bladder dysfunction. In early post-transplant period, he developed a stricture of the ureteroenteroanastomosis. The anastomosis was reached via ileostomy using a side-viewing scope and two biliary double-pigtail plastic stents were placed. Three months later, the plastic stents were exchanged for a biliary fully covered metal stent (WallFlex 60x6mm, Boston Scientific). To prevent migration, the proximal (enteric) side of the metal stent was secured by a plastic biliary double pigtail stent positioned transversally through the mesh. After six months, resolution of the stricture allowed for stent removal.

## OP304V INCARCERATION OF THE COLONOSCOPE AND SIGMOID COLON IN AN INGUINAL HERNIA

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DOI 10.1055/s-0040-1704322

A case of colonoscopy incarceration in an inguinal hernia is presented as an uncommon complication during colonoscopy.

Colonoscopy was done on an 85-year-old female because gastrointestinal bleeding, during withdrawal incarceration of the scope on an inguinal hernia was noticed, the scope was removed but inguinal hernia couldn't be reduced, there was no vascular compromise and conservative management was decided. Incarceration of the colonoscopy in an inguinal hernia is a rare complication. The presence of an inguinal hernia is considered as a relative contraindication for colonoscopy, if colonoscopy is a priority, measures must be taken to reduce the risk of incarceration.

## OP305V COMBINED LAPAROSCOPIC AND ENDOSCOPIC MANAGEMENT OF A SERRATED APPENDICEAL LESION

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DOI 10.1055/s-0040-1704323

A 51-year-old female presented with abdominal pain and weight loss. CT-colonography revealed an irregular 20mm polypoid lesion arising from the appendix. At colonoscopy an intermittently visible lesion with benign surface pattern was noted arising from the appendiceal orifice. The lesion completely retracted into the appendix with dynamic position change and had no caecal component.

The patient was referred for a combined laparo-endoscopic procedure. During the procedure, the surgical stapler position was confirmed endoscopically with no terminal ileal and ileo-caecal valve involvement. Endoscopic insufflation excluded an air leak after surgical resection.

Histology confirmed a completely excised sessile serrated lesion without dysplasia.

Friday, April 24, 2020

17:00 – 18:30

Biliary diseases

Liffey Hall 2

## OP306 ENDOSCOPIC ULTRASOUND-GUIDED BILIARY DRAINAGE FOLLOWING FAILED ERCP: EXPERIENCE FROM A UK TERTIARY REFERRAL CENTRE 2016-2019

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DOI 10.1055/s-0040-1704324

**Aims** Percutaneous transhepatic biliary drainage (PTBD) is associated with significant morbidity and prolonged hospital stay [1,2]. Endosonography-guided biliary drainage (EUS-BD) is an alternative to PTBD when endoscopic retrograde pancreatography (ERCP) has failed. The aims of this study were to review the technical success and adverse events with EUS-BD procedures performed at a tertiary care referral centre.

**Methods** A prospectively-collected database of EUS-BD procedures performed from 1st August 2016 to 20th November 2019 was reviewed retrospectively. Recorded variables were technical success, adverse events, length of stay and 30-day all-cause mortality.

**Results** A total of 82 procedures were performed. 45 patients were male (55%); median age 70 years (range 20-90).

► **Tab. 1** Failures and complications

Procedure	No. of procedures	Aetiology: Benign/Malignant	Technical success	Failures/Complications
Choledochoduodenostomy (CDD) using lumen-apposing metal stent (LAMS)	56	6/50	98.2%	1 failed: ♣ Patient underwent PTBD Complications: ♣ LAMS migration out of duct in 1 patient 4 weeks later with persistent fistula providing biliary drainage ♣ 2 maldeployments (rescued with FCSEMS through LAMS)
CBD rendezvous	14	14/0	78.6%	3 failed: ♣ 2 patients underwent CDD ♣ 1 patient underwent PTBD Complications: ♣ Bile leak in 1 patient
Hepaticogastrostomy	12	1/11	100%	Complications: ♣ Delayed bleeding from stent insertion site in 1 patient ♣ Cholangitis in 1 patient

Indications for drainage were pancreatobiliary malignant obstruction (n =55), choledocholithiasis (n=14), other metastatic malignancies (n=7), chronic pancreatitis (n=5) and benign duodenal stricture (n=1).

Reasons for failed ERCP were inaccessible papilla (gastric outlet obstruction; n=29), tumour infiltration of ampulla (n=26), obscured intradiverticular ampulla (n=16) and failure to transverse biliary stricture (n=11).

The route of attempted biliary drainage was choledochoduodenostomy in 56, EUS-guided rendezvous in 14 and hepaticogastrostomy in 12.

The procedures were technically successful in 95.1%. Adverse event (AE) rate was 7.3%. Failures and AEs are detailed in table. Median hospital-stay was 3 days (range 0-120 days). 2 patients died within 30 days, both of multiorgan failure due to pre-existing sepsis non-responsive EUS-BD.

Table

**Conclusions** This study adds to the existing literature supporting EUS-BD [3-5] as an effective alternative to PTBD after failed ERCP. The rendezvous technique seems less successful in this series. Further prospective randomised studies are needed to compare outcomes for EUS-guided versus percutaneous drainage.

## OP307 EUS-GUIDED GALLBLADDER DRAINAGE WITH LUMEN APPOSING METAL STENT: RESULTS OF A MULTICENTER STUDY

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DOI 10.1055/s-0040-1704325

**Aims** In high-risk patients, EUS-guided gallbladder drainage (EUGBD) is a validated alternative to percutaneous transhepatic gallbladder drainage (PTGBD) based upon the 2018 Tokyo guidelines. The use of electrocautery-enhanced lumen-apposing metal stent (ECE-LAMS) have recently and rapidly disseminating into interventional EUS practice.

We report in this first french multicenter study the clinical outcomes of endoscopic ultrasound-guided gallbladder drainage with ECE-LAMS as a treatment for patients with acute cholecystitis and who are unfit for surgery.

**Methods** We performed a retrospective multicenter study between June 2014 and October 2019. EUGBD were executed under general anesthesia without endotracheal intubation and access was achieved directly and by using only EUS guidance. Data were collected on technical success (stent placement), clinical success (resolution of symptoms within 3 days) and adverse events.

**Results** EUGBD was performed in 84 patients (46 women) with a median age of 82 years old (range, 45-99), most with acalculous cholecystitis (n = 55; 66.5%). Stent placement was technically successful in 82 patients (97.5%). One of the failure case required immediate surgery. Resolution of cholecystitis was observed in 82 of 82 patients (100%). The median time of procedure was 5 min (range, 3-30). There was 2 late adverse events (2%). No bleeding occurred and no recurrence was observed with a median follow-up of 389 days (range, 3-1269). Removal of a ECE-LAMS was attempted successfully in one case at 3 months before a now possible cholecystectomy. The mean postprocedure pain score was 2/10. The length of stay in the hospital was 3 days (1-10).

**Conclusions** EUGBD technique appear as a feasible and efficient technique with similar results to those of the PTGBD. We also observe no stent migration and no recurrence of cholecystitis. Large comparative and prospective studies are needed.

### OP308 SINGLE-STEP ERCP PLUS EUS-GUIDED GALLBLADDER DRAINAGE THROUGH LAMS FOR CHOLECYSTOLITHIASIS WITH ACUTE CHOLECYSTITIS AND CONCOMITANT CHOLEDOCHOLITHIASIS, IN PATIENTS UNFIT FOR SURGERY

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DOI 10.1055/s-0040-1704326

**Aims** Endoscopic retrograde cholangiopancreatography (ERCP), followed by laparoscopic cholecystectomy, remains the gold standard for the management of cholecysto-choledocholithiasis. Laparo-endoscopic rendezvous, which combines laparoscopic cholecystectomy and ERCP at the same time, is an alternative. Recently, endoscopic ultrasound-guided gallbladder drainage (EUS-GBD) using lumen apposing metal stents (LAMS) has been increasingly used. Furthermore, a novel dedicated fully-covered and electrocautery-enhanced LAMS (Hot Axios™; Boston Scientific, USA) has been developed. This study aims to evaluate the effectiveness and safety of single-step ERCP plus EUS-GBD through LAMS for cholecysto-choledocholithiasis with acute cholecystitis in patients unfit for surgery.

**Methods** Thirteen patients unfit for surgery (5 women, mean age 84.6±7.3 years), who presenting cholecysto-choledocholithiasis with acute cholecystitis, were consecutively enrolled. All patients underwent ERCP plus EUS-GBD through LAMS in a single-step, over a six-month period (May-October 2019). First, an ERCP was performed for common bile duct stones' removal. Immediately after, an EUS-guided cholecystogastrostomy or a cholecystoduodenostomy was performed using the Hot Axios™ system. Primary outcomes were technical and clinical success. We also recorded the adverse events rate and stent patency.

**Results** The median procedure time was 40 minutes (range 28-52). The technical and the clinical success was obtained in all patients, and stent patency was good in all of them (using 10x10mm or 15x10mm LAMS). LAMS was removed four weeks after placement, in patients with good life expectancy, otherwise it was left indefinitely. Starting from LAMS' placement, the median follow-up time was 105

days (range 32-178) assessed by abdomen computer tomography (CT-scan), without complications during follow-up. No complications as "buried stent" were observed at the moment of LAMS' removal.

**Conclusions** Single-step management of cholecysto-choledocholithiasis with acute cholecystitis, performed with ERCP plus EUS-GBD through LAMS, has high technical and clinical success rates and shows very low complications and reintervention rates in patients unfit for surgery, that are best candidates. Further studies are needed.

### OP309 OUTCOMES OF BILIO-PANCREATIC EUS IN PATIENTS WITH SURGICALLY ALTERED UPPER GI ANATOMY: A RETROSPECTIVE MULTICENTER STUDY

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DOI 10.1055/s-0040-1704327

**Aims** Little is known about outcomes of bilio-pancreatic endosonography (EUS) in patients with surgically altered upper gastrointestinal (GI) anatomy. We aimed to assess the performance of EUS, the rate of procedural success and of EUS-related adverse events (AEs), according to post-surgical anatomies.

**Methods** Patients with post-surgical altered upper GI anatomy who underwent EUS for the evaluation of the bilio-pancreatic region between January 2008 and June 2018 in 8 European centers were included.

**Results** Of 242 patients (162 males, mean age 66.4 ± 12.5), 86 had (35.5%) Billroth II (BII), 77 (31.8%) duodenopancreatectomy, 23 (9.5%) Billroth I, 19 (7.9%) distal esophagectomy, 15 (6.2%) total gastrectomy, 14 (5.8%) sleeve gastrectomy, and 8 (3.3%) Roux-en-Y. Sleeve gastrectomy, BI, and duodenopancreatectomy were associated with the highest rate of success (100%, 95.7%, and 92.2%, respectively). Head of pancreas visualization was significantly impacted by total gastrectomy, BII, and Roux-en-Y (success rate 6.7%, 53.7%, and 57.1%, respectively). The pancreatic body and tail were correctly examined in more than 90% of the cases in all groups except for esophagectomy and total gastrectomy patients (82.4% and 71.4%, respectively). The overall technical success of EUS-guided tissue acquisition (TA) was 78.2% (68/87 cases): 16 lesions failed to be visualized whereas in 5 it was impossible to puncture the lesion, resulting in a diagnostic accuracy of 71.3% (95% CI, 60.6-80.5).

Four (1.6%) AEs were observed: 1 mucosal tearing in a BII patient, 1 cardiac arrest in a distal esophagectomy patient, 1 bleeding after EUS-TA in a BI patient, and 1 acute pancreatitis after EUS-TA in a sleeve gastrectomy patient.

**Conclusions** The yield of bilio-pancreatic EUS in surgically altered upper GI anatomy is dependent on lesion location and surgery type. Before considering EUS in these patients, one must carefully consider the location of the target lesion and if it could be approachable by EUS.

## OP310 IS USEFUL A COAXIAL PLASTIC STENT WITHIN A LUMEN-APPPOSING METAL STENT FOR THE PALLIATIVE MANAGEMENT OF MALIGNANT BILIARY OBSTRUCTION?

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DOI 10.1055/s-0040-1704328

**Aims** There are doubts concerning the possible benefits derived from the insertion of double-pigtail plastic stents (DPPS) within the lumen-apposing metal stents (LAMS) in the EUS-guided transmural biliary drainage (BD). Aims to assess if the use of a coaxial DPPS within a LAMS provides more security in the EUS-BD for the palliative management in malignant biliary obstruction.

**Methods** This is a multicenter retrospective study from 3 tertiary institutions. Period: May 2015 to October 2019. Comparative evaluation of two strategies: biliary LAMS with vs without DPPS.

**Inclusion** Unresectable/inoperable biliopancreatic cases, with failed CPRE. Exclusion: borderline cancer cases, use of others stents.

**Clinical success** Bilirubin decrease > 50% at 4 weeks.

**Results** Twenty-eight cases of EUS-BD (cholechooduodenostomies) using LAMS. Eighteen women (64%), mean age 70,4 years. Indication: jaundice (n=23), cholangitis (n=5). CBD diameter: average 17.3 mm (SD 3.71mm). Technical success: 100%. Freehand technique + guidewire (n=12), previous puncture with needle 19 G + guidewire (n=16). Technical and clinical success rates of 100% and 82%, respectively. Major proportion of LAMS alone (61%) compared to LAMS + coaxial DPPS (39%). Global adverse events (AE) of 17.8%, and for each group (LAMS, 18% of AEs; LAMS+DPPS 17,6% of AEs). Immediate AE (< 24h): duodenal perforation (n=1), bleeding (n=1), migration (n=1). Late AEs: peritonitis (n=1), cholecystitis (n=1). Three late cholangitis (10.7%) that required reintervention for occluded stent. No differences in safety related to different technical aspects (freehand vs needle). No differences between both groups, in terms of clinical success, survival and safety. Minor length of procedure without DPPS placement (91.3 min vs. 46.2 min p < 0.05).

**Conclusions** The technical variant of adding a coaxial DPPS within LAMS in EUS-BD procedures of malignant biliary obstruction, does not seem to increase the safety and lengthens the procedure time.

## OP311 USEFULNESS OF ENDOSCOPIC ULTRASOUND (EUS) IN EARLY BILIARY PANCREATITIS WITHOUT CHOLESTASIS ON CONVENTIONAL IMAGING

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DOI 10.1055/s-0040-1704329

**Aims** to assess the outcome of acute biliary pancreatitis (ABP) using EUS for deciding to perform an ERCP.

**Methods** Our retrospective study included ABP patients without cholangitis or cholestasis on imaging admitted in our Department between 07/2017-10/2019.

Biliary etiology of pancreatitis was defined as presence of gallstones/sludge on imaging or history of cholecystectomy with elevated liver enzymes(ALT,AST and/or alkaline phosphatase >2xULN).

ABP patients were first evaluated by EUS and if choledocholithiasis was diagnosed ERCP was subsequently performed.

**Results** Our study included 49 ABP patients with a mean age of 64.6 ±19.4years(55.1% female).Obesity was present in 34.6% of cases.Gallbladder stones were diagnosed in 77.5% of patients and 22.5% undergo previously cholecystectomy.

Ranson score at admission ≥3 was present in 20.4% of patients, C reactive protein >150 mg/dl at admission in 16.3% and 26.5% of cases 48 hours after admission. Choledocholithiasis was diagnosed in 18/49(36.7%) by EUS. ERCP could be successfully performed in 15/18(83.3%) of patients.

We did not have ABP related mortality in our study cohort.Development of severe pancreatitis,organ failure, cholangitis, readmission because of biliary complications and hospital stay were similar in patients with ruled-outcholedocholithiasis in EUS(and no ERCP) and these with positive EUS and consequently performed ERCP with successfully removal of biliary tract stones.

Two from three patients(66.6%) with choledocholithiasis by EUS and unsuccessfully ERCP developed severe pancreatitis with persistent organ failure and need of intensive care admission.

**Conclusions** EUS is a very good method for diagnosing choledocholithiasis in ABP patients without obvious cholestasis and helps to decide if ERCP is needed.

► Tab. 1

	Positive EUS and successfully ERCP (n=15)	Negative EUS,no ERCP (n=31)	p
Severity -mild -moderately severe -severe	93.3% 6.7% 0 %	90.3% 9.7% 0 %	0.81 0.82 -
Organ failure/ ICU admission	0 %/0%	0 %/0%	-/-
Cholangitis/ Pancreatic necrosis	6.6%/6.6%	0%/6.4%	0.71/0.53
Readmission (biliary complications)/ Hospital stay	6.6%/7±1.3	3.2%/6.5±1.3	0.80/0.97

## OP312 ROLE OF ENDOSONOGRAPHY-GUIDED CHOLANGIOPANCREATOGRAPHY AFTER FAILED ERCP: CUMULATIVE EXPERIENCE FROM A SINGLE CENTER

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DOI 10.1055/s-0040-1704330

**Aims** In cases of failed ERCP, the endosonography-guided cholangiopancreatography (ESCP) has positioned as an effective alternative comparable to the percutaneous approach. Furthermore, in several tertiary centers, the EUS and ERCP combination in a single procedure, is a well-accepted routine strategy. Main aims were to report a cumulative experience of ESCP from a referral center, with the purpose to assess:

- 1) the ESCP role over the total ERCPs cases;
- 2) general outcomes as technical, clinical success and safety.

**Methods** This is a single-center retrospective cohort analysis. Period: October 2010 - October 2019. Technical success for Rendez-Vous (RV, papilla identification/cannulation); and transmural drainage (successful stent placement). Clinical success for tumoral jaundice (> 50% bilirubin decrease after 4 weeks); for choledocholithiasis (cannulation and stones clearance); and chronic pancreatitis (significant pain improvement after 4 weeks). Failed RV cases were crossed to transmural/antegrade with intention to treat.

**Results** A total of 233 combined procedures (EUS+/-ERCP) were performed of 6480 scheduled ERCP procedures (3.6%). Detailed revision of 85 ESCP (1.3%) was done. EUS-guided pancreatography (n=16) and cholangiography (n = 67) in 100% of cases. Technical and clinical success rates were 90.5% and 80% respectively. EUS-guided RV (n=32) technically successful in 30% and 72% of pancreatic and biliary procedures respectively. In 12 failed RV were crossed to direct interventions. Transmural interventions (n=69) included pancreaticogastrostomy/duodenostomy (n=11), choledochoduodenostomy (n=32), hepaticogastrostomy (n=9) and antegrade stent (n = 2). Procedure related adverse events (21.2%) were more frequent (p< 0.05) and severe (p< 0.05) in malignant biliary pathology. Late stent dysfunction in 3 cases. Five procedure-related deaths related to procedures were detected.

**Conclusions** ESCP has a role reserved for a minority of selected cases with failed ERCP. It helps to improve the global efficacy of endoscopy drainage, but is not an adverse event free procedure, especially in malignant biliary pathology, and should be reserved in referral centers.

### OP313V A RARE CASE OF BILIARY STRICTURE - EUS GUIDED FINE NEEDLE BIOPSY FOR THE DIAGNOSIS OF HIV RELATED CHOLANGIOPATHY

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DOI 10.1055/s-0040-1704331

A 45 years old male, recently diagnosed of HIV / AIDS, is admitted due to infectious bronchiolitis, severe immune suppression and cholestasis. MRI demonstrates an intrapancreatic biliary stricture raising concern of cholangiocarcinoma. Diffuse common bile duct thickening is seen on EUS, causing an intrapancreatic focal stricture. Histology from EUS biopsy showed biliopancreatic tissue without malignancy and presence of CMV viral inclusions.

Clinical response and cholestasis significantly improved with highly active anti-retroviral therapy and Valgancyclovir.

We therefore report a successful diagnosis of AIDS related cholangiopathy by EUS guided FNB, avoiding diagnostic ERCP. To our knowledge, no similar cases have been reported.

### OP314V EUS-GUIDED HEPATICOGASTROSTOMY (HGS) AND ANTEGRADE TREATMENT WITH KAFFES ANASTOMOTIC STENT (KAS) OF BILIO-ENTERIC ANASTOMOTIC STRICTURES (BEAS) IN PATIENTS WITH SURGICALLY ALTERED ANATOMY (SAA)

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DOI 10.1055/s-0040-1704332

**Introduction** BEAS can be treated endoscopically in SAA antegradely via HGS. We adapted KAS, originally designed for choledocho-choledochostomy strictures, to treat BEAS.

**Procedure** Two stages: INDEX=a+b; a) Creation of HGS using transgastric cholangiography (segment-II), serial dilation, 8x80mm SEMS with anti-migration flaps placement, stent dilation and fixation/clipping; b) Antegrade intervention attempting transanastomotic guidewire passage through catheters introduced via HGS, antegrade BEAS dilation, and transanastomotic KAS placement. REVISION=KAS&HGS removal. 5 BEAS were treated with 100% short-term success (1-choolangitis). At 21[3-33]-months follow-up, 4 patients finished treatment (3-asymptomatic/1-relapse, re-treated with KAS), and 1 await stent removal.

**Conclusions** The design of KAS may enhance BEAS treatment via HGS.

Friday, April 24, 2020

17:00 – 18:30

ERCP: Ductal access

The Liffey B

### OP315 PROSPECTIVE STUDY EVALUATING SAFETY AND EFFICACY OF DIFFERENT TECHNIQUES FOR BILIARY ACCESS IN PATIENTS WITH DIFFICULT BILIARY CANNULATION AT ENDOSCOPIC RETROGRADE CHOLANGIO-PANCREATOGRAPHY

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DOI 10.1055/s-0040-1704333

**Aims** Endoscopic Retrograde Cholangio-Pancreatography (ERCP) is technically challenging and complex among all therapeutic endoscopy procedures. Difficult biliary cannulation (DBC) increases post procedure complications. Hence, getting the cannulation technique right is sine qua non in successful cannulation.

**Methods** Patients with DBC (as per ESGE guidelines) were prospectively enrolled over a three-year period. DBC protocol for failed cannulation included, pancreatic guidewire (GW) / double GW technique, precut after placement of a pancreatic stent, precut sphincterotomy/papillotomy/fistulotomy and EUS-guided rendezvous (RV). The technical, clinical success, safety rate, and adverse events was studied and a sequential algorithm was proposed.

**Results** Out of 3680 patients, 471(12.8%) had DBC. Their mean (SD) age was 51.5 (17.4) years; 330(70.1%) male. Majority of the patients 230(48.8%) underwent precut, but it was unsuccessful in 10(2.1%) patients in first attempt. The success rate of Precut Sphincterotomy was 220(86.9%), Double guidewire cannulation was 120(95.2%), Wire guided after Pancreatic stent placement was 64 (94.1%), EUS-RV was 34(97.1%) and Wire guided- repeat ERCP after 48 hrs was 10(98.3%). Precut Sphincterotomy had higher complication rate of 59(25.6%) out of which post ERCP pancreatitis was seen in 41(17.8%). 3(0.6%) underwent successful Percutaneous transhepatic biliary drainage without complications.

**Conclusions** Our results indicate that EUS-RV and repeat ERCP after 48 hrs appears relatively safe and effective for DBC. Further algorithmic modifications to the current techniques without compromising safety is needed to increase technical success of future procedures.

### OP316 COMBINED ULTRASOUND- AND FLUOROSCOPY-GUIDED TRANSHEPATIC BILIARY DRAINAGE IS SUPERIOR TO CONVENTIONAL RADIOGRAPHY-GUIDED TECHNIQUE

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DOI 10.1055/s-0040-1704334

**Aims** Difficult biliary cannulation (DBC) is a common condition in endoscopy and often remains challenging. DBC is related to benign, malignant or iatrogenic diseases. In case of unsuccessful ERCP, bile duct access can be achieved alternately by EUS-guided or percutaneous transhepatic biliary drainage (PTBD). PTBD is often performed by combined fluoroscopy and ultrasound-guided puncture (US-PTBD) but also conducted without sonography (F-PTBD). However, there is very little data evaluating US-PTBD or showing any superiority for the use of US-PTBD in technical access or complications. Therefore, we performed a retrospective, two-center study comparing US-PTBD and F-PTBD.

**Methods** Data of 294 patients, who underwent PTBD between 2002 and 2018 were collected and retrospectively analyzed. Indications, outcome, technical efficacy, comorbidities and procedural characteristics were analyzed. Fisher's exact test, Student's t-test and Chi-Square-test were used to identify differences between both groups. Logistic regression analyses were conducted to identify prediction parameters.

**Results** We identified 225 patients, who were treated with US-PTBD and 69 with F-PTBD. Mean age was 66.0 (US-PTBD) and 67.4 years (F-PTBD). PTBD was performed predominantly in men (64.5% and 66.7%). In both groups, the right hepatic lobe was mostly targeted (US-PTBD: 78.2%, F-PTBD: 79.8%). Main indications for PTBD were prior abdominal surgery and unsuccessful ERCP. US-PTBD was technically successful in 80.9% compared to 78.3% in the F-PTBD group ( $P=0.61$ ). Small bowel intubation was achieved in 50.7% (US-PTBD) and 63.8% (F-PTBD) of patients ( $P=0.07$ ). Interventions could [AH1] be performed without sedation in 17.8% of patients undergoing US-PTBD but only in 2.9% in the F-PTBD group ( $p<0.001$ ). Severe complications (pleural or cardiac injuries, perforation and fistula) occurred significantly less often in US-PTBD compared to F-PTBD (2.6% vs. 10.1%,  $p=0.02$ ).

**Conclusions** US-PTBD required sedation less often and resulted in fewer severe complications when compared to F-PTBD. US-PTBD should be the standard of care when performing PTBD.

### OP317 OUTCOMES OF NEEDLE KNIFE FISTULOTOMY AS AN INITIAL METHOD OF BILIARY CANNULATION

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DOI 10.1055/s-0040-1704335

**Aims** A previous feasibility study has suggested that needle knife fistulotomy (NFK) as an initial method for biliary access in patients with stones is associated with high levels of success and low rate of complications. This study evaluated the outcomes of NFK as an initial method for biliary access, in a large number of patients with any type of biliary pathology (tumors and stones), on the basis of success rate, complications and factors associated with success and complications.

**Methods** This was a prospective multicenter study of all consecutive patients who were submitted to NFK attempt as an initial method of biliary cannulation between August 2017 and November 2019. We evaluated the success rate and complications of NFK based on the following parameters: morphology of the major papilla, biliary pathology, diameter of the terminal CBD (t-CBD) measured 1 cm from the papilla using fluoroscopic images while the patient was in a prone or supine. Papilla were classified using a previously validated international classification of the major papilla: flat type, prominent tubular non-pleated, prominent tubular pleated, prominent bulging, intradiverticular, diverticular border, unclassified papilla. Outcomes were evaluated a probitbinary response regression models.

**Results** We included 111 patients submitted to primary NFK, median age 70 years (17-97), 59 women (53, 15%). In first ERCP, biliary cannulation rate=97.29% (108/111). The post-ERCP complications was 4,50% (n= 5), with pancreatitis rate of 3,60% (n=4) and no severe complications. Mean time to achieve cannulation was 6,25 min (sd3,37) and mean ERCP duration=18,16 min(sd5,58). In the regression model, complications were not explained by the papilla morphology, CBD diameter, biliary pathology (Overall F-Test=0,70;p=0,6725).

**Conclusions** When feasible NFK as initial method is associated with short time for gaining biliary access, high rate of success and low risk of complications, namely pancreatitis. The success of NFK is not related with the morphology of the papilla, t-CBD diameter, or underlying biliary pathology.

### OP318 IDENTIFYING AMPULLA AND DIFFICULTY OF SELECTIVE CANNULATION WITH ARTIFICIAL-INTELLIGENCE ASSISTED ANALYSIS OF ERCP IMAGE

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DOI 10.1055/s-0040-1704336

**Aims** The advancement of artificial intelligence (AI) made it possible to apply AI into medical fields. The aim of this study was to investigate an AI-assisted classification for ERCP through convolutional neural network (CNN) using documented endoscopic images.

**Methods** We used deep convolutional neural networks pre-trained on the ImageNet dataset such as ResNet18, ResNet50, and VGG19 and fine-tuned them on dataset. We performed 5-fold cross-validation on our dataset and formed subtasks, four-class classification and binary classification, according to the cannulation difficulty.

**Results** ERCP Data of 456 patients were included in the analysis. The averaged training results of 5-fold cross-validation for the detection task were as follows: mean intersection over union (mIoU) ( $0.544 \pm 0.021$ ), mean absolute error (MAE) ( $6.360 \pm 0.522$ ), and root mean squared error ( $10.009 \pm 1.390$ ). Fig. 1 shows the success plot of detection task. Each point on the plot shows the mean success rates of entire folds for each threshold. Fig. 2 shows the comparison of the estimated bounding box and the ground truth bounding box on a sample image. In the difficulty prediction task, we achieved the accuracy of 69.1 % on the four-class classification and that of 67.1 % on the binary classification.

**Conclusions** AI-assisted system mostly differentiated the ampulla and has a potential to improve the quality of ERCP.

### OP319 EFFECTIVENESS AND SAFETY OF LAPAROSCOPY-ASSISTED TRANSGASTRIC ENDOSCOPIC RETROGRADE CHOLANGIOGRAPHY IN A LARGE POPULATION OF PATIENTS WITH ROUX-AND-Y GASTRIC BYPASS

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DOI 10.1055/s-0040-1704337

**Aims** Conventional endoscopic retrograde cholangiopancreatography (ERCP) is anatomically challenging in patients with a Roux-and-Y gastric bypass (RYGB). Laparoscopic-assisted transgastric endoscopic retrograde cholangiography (LAERC) is an alternatives as it allows access to the biliary tree via the gastric remnant. We investigated the effectiveness and safety of LAERC in patients with a RYGB.

**Methods** We retrospectively reviewed all charts from RYGB patients who underwent a LAERC between January 2009 and August 2019 in Rijnstate Hospital. Patients who underwent pancreatic therapy were excluded. We collected demographic, clinical and outcome data. An adverse effect was defined as any complaint related to the LAERC up to 30 days after the procedure and graded according to the ASGE lexicon.

**Results** We identified 100 LAERC in 86 patients with RYGB. Median age at LAERC was 54 years of whom 70% female. Simultaneous cholecystectomy was performed in 35 LAERC (35%). The therapeutic success rate was 95%. Stone extraction succeeded in 88.8% and sphincterotomy was performed in 96.7%. We identified 30 adverse effects regarding 28 procedures, whereof 8 endoscopy-related, 14 laparoscopy-related and 8 non-specified. In total, 6 severe adverse effects were seen concerning post-ERCP pancreatitis (n=2), laparoscopy-related hemorrhage (n=1), abscess (n=1), shock (n=1) and pneumonia (n=1). No patient died because of a LAERC-associated cause.

**Conclusions** LAERC is a safe and effective approach for biliary diseases in patients with RYGB if performed by an experienced gastroenterologist.

### OP320 EVALUATION OF ADVANCED ENDOSCOPIC RETROGRADE CHOLANGIOPANCREATOGRAPHY (ERCP) TECHNIQUES FOR SELECTIVE BILIARY CANNULATION

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**DOI** 10.1055/s-0040-1704338

**Aims** Selective biliary cannulation (SBC) by standard methods (SM) in endoscopic retrograde cholangiopancreatography (ERCP) can be unsuccessful in up to 20% of patients. When SM of SBC fail, a variety of advanced cannulation techniques (ACT) are available. The aim of the study was to evaluate the effectiveness, security and predisposing factors of ACT

**Methods** Retrospective study of an ERCP prospective collected database in patients without previous sphincterotomy in 2015-2019. Demographic, clinical and endoscopic data were analysed to compare ACT and SM. Factors associated with need of ACT were identified using a univariate-multivariate regression analysis

**Results** Out of 1031 patients, SM were performed in 778 (75.5%) with the remaining 253 (24.5%) undergoing ACT. Five different ACT were performed: precut (39.1%), double guidewire technique (30.8%), pancreatic stent (15.8%), precut after pancreatic stent insertion (11.1%) and transpancreatic precut sphincterotomy (3.2%). SBC success rates were 73.1% with SM (754/1031) and, after SM failure, 87% (220/253) with ACT. Globally, SBC success rate was 94.5% (974/1031). Malignant neoplasia as indication of ERCP was associated with need of ACT in multivariate regression analysis (adjusted OR 3.17; CI 95% (2.21-4.56), p< 0.001). Complication rate was higher with ACT than with SM (19% vs 7.5%, respectively) (p< 0.001), due to an increased rate in ACT group of pancreatitis (12.3% vs 3.3%, respectively) (p< 0.0001) and bleeding (4.3% vs 1.8%, respectively) (p< 0.02). However, there were no differences between complication rates of ACT (19%) and the subgroup of SM in which more than 10 attempts of SBC were tried (20%) (p=0.28)

**Conclusions** 1. Through ACT a high rate of successful SCB after SM failure can be achieved, although they are associated with an increased complication risk  
2. There are no significant difference in adverse events between ACT and SM with >10 attempts of SBC  
3. Indication of ERCP due to malignancy predicts the need of resorting to ACT

### OP321 ENDOSCOPIC MINOR PAPILLA SPHINCTEROTOMY (EMPS): TECHNICAL SUCCESS AND LONG-TERM CLINICAL OUTCOMES

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**DOI** 10.1055/s-0040-1704339

**Aims** EMPS is technical demanding and few data about safety and outcomes are available. We aimed to assess the technical success and the clinical efficacy in a selected subgroup of patients with recurrent pancreatitis (RP).

**Methods** In this retrospective study, all patients referred to our Endoscopic Unit between May 2009 and May 2018 who underwent EMPS were included. Demographic and clinical data as well as technical data related to the endoscopic therapy and adverse events (AEs) were reviewed. Technical success was defined as deep cannulation of dorsal pancreatic duct guidewire, confirmed on fluoroscopy after contrast injection. AEs were defined according to the ASGE lexicon. The clinical impact of EMPS was evaluated in a subgroup of patients treated for RP with a follow-up of at least 1 year. Clinical success was defined when no AP recurred after EMPS.

**Results** A total of 99 patients were identified. Deep cannulation was obtained in 74 patients and failed in 25. On average 1.24 attempts (median 1, range 1-4) were performed. Pancreatic calcifications were the only factor related to failure. Seventeen procedure-related AEs were observed: 12 mild pancreatitis, 4 post-EMPS bleedings, and 1 perforation managed conservatively. Clinical success, evaluated in 53 patients, was obtained in 43 without any episode of AP during a median follow-up of 4.8 years (range 1.2-9.7 years). In 4 out of the 10 patients with recurrence of AP the enlargement of the sphincterotomy was performed, with clinical benefit in 2. In the remaining 6 patients a reduction of the AP episodes frequency was observed. No association between the delayed emptying of the dorsal duct documented on secretin enhanced MRCP and clinical success was observed (p= 0.472).

**Conclusions** EMPS showed a good technical success and a reasonable rate of AEs if performed in tertiary centers. Clinical success was achieved in 80% of patients.

### OP322V SPHINCTEROPLASTY, ELECTROHYDRAULIC LITHOTRIPSY AND FINAL PLACEMENT OF A SEMS INTO THE BILE DUCT OF A PATIENT WITH SURGICALLY ALTERED UPPER GI ANATOMY USING DOUBLE-BALLOON ENTEROSCOPY-ERCP

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**DOI** 10.1055/s-0040-1704340

87-year-old multi-morbid female with complex choledocholithiasis had undergone several colonoscopy and DBE-assisted ERCs in attempts to clear the bile duct, which was dilated, tortuous and distally stenotic, resulting in recurrent obstruction and cholangitis.

THE ERCP STEP-BY-STEP

1. Trans-papillary balloon dilation of stenosis with 15 mm TTS CRE balloon
2. Insertion of ultra-slim gastroscope through the side of the overtube to perform direct cholangioscopy
3. Direct cholangioscopy assisted electrohydraulic lithotripsy
4. Removal of stones and fragments with balloon and basket

5. The common bile duct remained stenotic
6. Fluoroscopy-assisted Insertion of fully-covered self-expanding metal stent using the overtube as a "working-channel"

## OP323V INTRA DIVERTICULAR PAPILLA: DESCRIPTION OF VARIOUS CANNULATION TECHNIQUES

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**DOI** 10.1055/s-0040-1704341

**Introduction** ERCP cannulation of the papilla, which is deep within the diverticulum and invisible is challenging.

**Description** We hereby discuss four methods of cannulating the intradiverticular papilla.

The clip method by pulling and tauting the mucosa, the method of entering the diverticulum gently by the tip of the duodenoscope, and then locating the papilla. The method of using the therapeutic gastroscope to cannulate the papilla on the rim of the diverticulae, and needle knife fistulotomy when the papilla is buried at the end of the ridge in between the diverticuli.

**Conclusion** With the right technique, the challenges can be overcome.

Saturday, April 25, 2020

08:30 – 10:30

Large colonic polyps: Slice and dice

The Liffey B

## OP324 EFFICACY OF UNDERWATER ENDOSCOPIC MUCOSAL RESECTION FOR THE TREATMENT OF LARGE COMPLEX COLORECTAL LESIONS: A RANDOMIZED AND MULTICENTER CONTROL TRIAL

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**DOI** 10.1055/s-0040-1704342

**Aims** The efficacy of U-EMR has been tested in small and medium size colorectal lesions. However there are not comparative studies focussed on assessing its suitability for the treatment of complex colorectal lesions (> 2 cm in size or scared).

**Methods** Randomized and multicenter control trial with 14 Spanish centers. Consecutive lesions larger than 2 cm and previously treated lesions were included, which were randomized using the REDCAP platform.

**Results** A total of 267 lesions (32.75 mm) were enrolled (141 in CEMR group (16 recurrences) and 126 in the UEMR group (15 recurrences)). There was no difference in technical success (87.2% EMR vs. 91.3% UEMR; p 0.19). UEMR showed

better results in terms of complete resection rate (82% vs. 90%; p=0.04) with no differences in the en bloc resection rate (20% EMR vs. 25% UEMR; p=0.56). Likewise, UEMR procedure was faster than CEMR (30.53 vs. 20.70 min; p< 0.001). Perception of technical difficulty was similar in both groups (30.6% EMR vs. 24.8% UEMR; p=0.42). Regarding the rate of adverse events, there was no differences in terms of perforation (2.1% vs. 2.4%; p=0.60). However, the intraprocedural bleeding rate was higher in UEMR group (18% vs. 12.7%; p=0.29) with no clinical significance. However delayed bleeding rate was two-fold higher in CEMR (4% vs. 8%; p=0.14). All complications except one hemorrhage in the CEMR group were resolved endoscopically. A total of 112 procedures (41.9% of the total)

(57 in CEMR and 55 in UEMR) were reviewed at 3-6 months with a slightly higher percentage of recurrences in the EMR group (17.6% EMR vs. 9.1% UEMR; p=0.33), again without statistically significant differences.

**Conclusions** UEMR and EMR showed similar rates of efficacy in the treatment of complex colorectal lesions. However, with UEMR the procedure was more efficient, with a trend to be safer than CEMR and with a lower recurrence rate. NCT03567746

## OP325 THERMAL ABLATION OF THE MUCOSAL DEFECT MARGIN AFTER ENDOSCOPIC MUCOSAL RESECTION SIGNIFICANTLY REDUCES ADENOMA RECURRENCE - A PROSPECTIVE, INTERNATIONAL, MULTI-CENTRE TRIAL

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**DOI** 10.1055/s-0040-1704343

**Aims** Thermal ablation of the defect margin (TAM) after endoscopic mucosal resection (EMR) in the treatment of large (≥20mm) laterally spreading lesions (LSL) has been shown to be efficacious in a clinical trial setting, with a four-fold reduction, in residual or recurrent adenoma (RRA) at 6 months first surveillance colonoscopy (SC1). The clinical effectiveness of this treatment is unknown.

We sought to evaluate the effectiveness of TAM and the rate of RRA in an international, multi-centre prospective trial (NCT02957058).

**Methods** We conducted a study of consecutive LSL, across six tertiary centres, referred for EMR. The primary endpoint was the rate of RRA at SC1. TAM was performed using soft coagulation via the snare-tip to create a minimum 2-3mm rim of completely ablated tissue around the entire circumference of the resection defect. All endoscopists underwent an educational intervention prior to enrolment. Recurrence was assessed endoscopically and at histology. Exclusion criteria included LSL involving the ileo-caecal valve/appendiceal orifice and circumferential LSL.

**Results** From, 05/2016-08/2018, 866 LSL were enrolled and underwent EMR. TAM with uniform completeness was achieved in 795 LSL. 71 LSL had incomplete treatment with TAM (poor access - 26, unstable patient/sedation issues - 15, deep mural injury (>/=3) - 10, massive lesion (LSL > 70mm)/high risk of significant stenosis - 8, other - 12). 424/494 (85.4%) of eligible LSL, treated with complete TAM. 9/424 (2.1%) cases had RRA. All recurrences were easily treated endoscopically. The overall RRA was 23/474 (4.9%) and higher in LSL with incomplete TAM (28%).

**Conclusions** In clinical practice routine thermal ablation of the defect margin after EMR is highly effective in reducing recurrence. This simple and inexpensive technique should be universally employed. Incomplete treatment, in difficult lesions, is associated with a higher rate of recurrence and thus complete margin ablation should be attempted in all LSL undergoing EMR.

### OP326 SCAR ASSESSMENT AFTER PIECEMEAL ENDOSCOPIC MUCOSAL RESECTION - INTEROBSERVER AGREEMENT IN HISTOLOGICAL RECURRENCE PREDICTION

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**DOI** 10.1055/s-0040-1704344

**Aims** Piecemeal endoscopic mucosal resection (pEMR) allows resection of larger non-invasive colorectal lesions. Adenoma recurrence is an important limitation and occurs in ≤20%. It is unclear whether scar assessment after pEMR has to include scar biopsy in the absence of suspected recurrence. The present study aimed to evaluate interobserver agreement in adenoma recurrence based on endoscopic scar assessment, among non-experts in EMR.

**Methods** An image based offline analysis was performed to evaluate adenoma recurrence prediction and assess the interobserver agreement within a heterogeneous group of participants, mostly composed by non-experts in EMR. Thirty-eight high-definition pEMR scar images were selected from the cohort of patients under pEMR surveillance. The images were subsequently randomized, though simple random sampling. Participants were blinded for the randomization sequence, patient-related factors and final histology.

**Results** Endoscopic prediction of recurrence had high sensitivity (55.6%-88.9%) and specificity (85.0-95.0%). Negative predictive value (70.4%-94.1%) and positive predictive value (82.4-93.8%) were also calculated. Overall coefficient of agreement (k) between the participants was 0.806

( $p < 0.001$ ), indicating substantial agreement. Considering image modalities higher agreement (k) was achieved under NBI visualization (k=0.837;  $p < 0.001$ ).

**Conclusions** Our study suggests that optical diagnosis of recurrent adenoma has high interobserver agreement between experts and non-experts in EMR.

### OP327 POLYPS REFERRED TO EXPERT CENTER FOR POLYPECTOMY ACCORDING TO ENDOSCOPIST'S SPECIALTY

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**DOI** 10.1055/s-0040-1704345

**Aims** The ESGE-Guideline for colorectal polypectomy (Ferlitsch M et al.) recommends which polyps should be referred to expert centers for polypectomy. Not much is known about these polyps referred to tertiary centers. Therefore, our aim of the study was to assess rates of referred polyps according to endoscopist's specialty.

**Methods** Screening colonoscopies from the years 2007-2019 were analyzed within Austrian Certificate in Quality for Screening Colonoscopy. We evaluated the rate of polyps referred to expert centers for polypectomy according to polyps' size and compared these rates in relation to endoscopist's specialty. Polyp's size could be described as < 5mm, 0,5-1cm, 1-2cm and >2cm.

**Results** From 131 489 screening colonoscopies with polyps in the results, 62,62% were performed by internists, 32,89% by surgeons and 4,49% interdisciplinary. Mean polyps' rate referred for polypectomy was 5,71%(SD=9,5) for internists, 4,64%(SD=5,66) for surgeons and 3,59%(SD=4,24) in the interdisciplinary group.

No statistical difference was found between the rates of internists and surgeons (polyps < 5mm: 1,48%(SD=7,24) vs. 1,19%(SD=3,74),  $p=0,714$ ; polyps 0,5-1cm: 6,46%(SD=12,37) vs. 4,80%(SD=10,21),  $p=0,256$ ; polyps 1-2 cm: 25,16%(SD=30,66) vs. 23,65%(SD=28,94),  $p=0,691$ ; polyps >2cm: 42,62%(SD=37,94) vs. 44,65%(SD=35,58),  $p=0,683$ ).

There was also no significant difference between internists and the interdisciplinary group (polyps < 5mm: 1,48%(SD=7,24) vs. 0,65%(SD=1,05),  $p=0,681$ ; polyps 0,5-1cm: 6,46%(SD=12,37) vs. 4,19%(SD=6,3),  $p=0,514$ ; polyps 1-2 cm: 25,16%(SD=30,66) vs. 19,75%(SD=24,69),  $p=0,550$ ; polyps >2cm: 42,62%(SD=37,94) vs. 33,77%(SD=33,21),  $p=0,471$ ).

Between surgeons and the interdisciplinary group no statistical difference could be found (polyps < 5mm: 1,19%(SD=3,74) vs. 0,65%(SD=1,05),  $p=0,681$ ,  $p=0,605$ , polyps 0,5-1cm: 4,80%(SD=10,21),  $p=0,256$  vs. 4,19%(SD=6,3),  $p=0,834$ ; polyps 1-2 cm: 23,65%(SD=28,94) vs. 19,75%(SD=24,69),  $p=0,656$ ; polyps >2cm: 44,65%(SD=35,58) vs. 33,77%(SD=33,21),  $p=0,361$ ).

**Conclusions** Most of the polyps referred to expert centers were bigger than 2cm. The study did not show significant difference in referring polyps to expert centers for polypectomy according to endoscopist's specialty.

### OP328 OUTCOMES FOLLOWING SURGERY FOR COMPLETELY REMOVED COLONIC LATERAL SPREADING LESIONS CONTAINING SUB-MUCOSAL INVASIVE CANCER

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**DOI** 10.1055/s-0040-1704346

**Aims** Management of malignant colorectal polyps can be endoscopic or surgical but the best approach has yet to be defined since prospective data is lacking. Endoscopic mucosal resection (EMR) is the treatment of choice for large (>20 mm) lateral spreading colonic lesions (LSL) with high success rates, good safety profile and clinical and economic advantages compared with surgery. There is no data on the outcome and management of malignant LSL (M-LSL) following complete removal by piecemeal EMR. We aimed to determine if salvage surgery for M-LSL following complete EMR resection is necessary.

**Methods** We analyzed data from a prospectively collected database of patients who underwent EMR at three hospitals in Israel. Patients with M-LSL were identified and their surgical and pathological data was reviewed for the presence of residual neoplastic tissue and complication. The primary end-point was the presence of residual local-regional cancer.

**Results** Over 36 months 346 LSL in 316 patients were completely removed by EMR. 280/346 (80.1%) were removed piecemeal. All lesions had pre-EMR biopsies without invasive cancer. Endoscopically, all lesions were not suspicious for containing deep submucosal invasive cancer. For lesions removed piecemeal, the final EMR pathology showed invasive cancer in 22 patients (7.8%). After multidisciplinary meeting (MDT), 4 cases were not sent to surgery (curative resection (n=3) or high operative risk (n=1)). 18 cases were referred for surgery due to increased risk for lymph node metastasis (table 2). In all cases, 18/18 (100%) patients underwent laparoscopic oncological resection with no major complications. There was no evidence of residual cancer in the resected colons or lymph nodes in all patients.

**Conclusions** Colonic LSL removed by piecemeal EMR, may not require surgery even when SMIC is present in the resected EMR specimen

### OP329 EFFECT OF PROPHYLACTIC CLIPPING FOLLOWING COLORECTAL RESECTION: A META-ANALYSIS OF RANDOMIZED CONTROLLED TRIALS

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DOI 10.1055/s-0040-1704347

**Aims** The efficacy of prophylactic clipping for post-polypectomy bleeding (PPB) prevention is still controversial, and data from previous meta-analyses are inconclusive. We performed a systematic review and meta-analysis of randomized controlled trials (RCTs) to assess the efficacy of prophylactic clipping for preventing PPB following high- and low-risk resections.

**Methods** We searched electronic databases (Medline/Pubmed, EMBASE, Scopus) for RCTs assessing the efficacy of prophylactic clipping for the prevention of PPB. Pooled relative risks were determined using fixed- or random-effects models. Sub-group analysis and meta-regression analysis were also performed based on size and location. To investigate the stability of our results, we also performed the leave-one-out sensitivity analysis.

**Results** From 1691 records, 9 RCTs satisfied all the inclusion criteria. Studies were published between 2003 and 2019, in USA (n=3), in Europe (n=1) and in Asia (n=5). A total of 7197 colorectal lesions (3544 clipped and 3653 unclipped) were resected in 4557 patients and included for the analysis. Lesion characteristics in terms of mean size (average mean polyp size, 18.6 mm), and location (mean percentage of proximal polyps 49.2%) were comparable between clipping and non-clipping groups. Compared with not clipping, clipping did not reduce the risk of PPB (RR, 0.69; 95% CI: 0.45-1.08; p=0.072). However, significant risk reductions were detected for  $\geq 20$  mm polyps (7.6% vs 4.3%; RR=0.51; 95% CI: 0.33-0.78; P=0.020) and proximally located lesions (6.2% vs 3.0%; RR=0.53, 95% CI: 0.35-0.81, p<0.001), while no reduction was shown when clipping < 20 mm or distal lesions. At multivariate analysis, the proportion of lesions  $\geq 20$  mm was associated with the risk ratio of PPB (ORs, 0.91; 95% CI: 0.85-0.98 per 1-unit increase, p=0.012). No publication bias was identified.

**Conclusions** Overall, there was little evidence of a protective effect of prophylactic clipping for prevention of PPB. However, there was a clear evidence of the benefit from clipping use for lesions at higher risk of bleeding, including lesions  $\geq 20$  mm and proximal polyps.

### OP330 TO CLIP OR NOT TO CLIP AFTER EMR OF LARGE NONPEDUNCULATED COLORECTAL POLYPS. COST-EFFECTIVENESS ANSWERS BASED ON REAL DATA

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DOI 10.1055/s-0040-1704348

**Aims** Delayed bleeding (DB) is the most common serious complication of EMR. Two randomized clinical trials have recently demonstrated that clip closure of mucosal defects after large nonpedunculated colorectal polyps (LNPCP) reduces the risk of DB. We aimed to analyze the cost-effectiveness of prophylactic clipping depending on the delayed bleeding (DB) risk score described by the Spanish Endoscopy Society Endoscopic Resection Group (GSEED-RE).

**Methods** EMR of LNCP were registered in the ongoing prospective multicenter database of the GSEED-RE from April 2013. Patients were classified

► Tab. 1 Figure 1

	Universal clipping (4.6% DB)		Selective clipping (12.9% DB)	
	58,7% RRR§	89,6% RRR§	58,7% RRR§	89,6% RRR§
ICER (€)	325,659	167,765	2,239	-54,065
Cost-effectiveness	No	No	Yes	Yes

according to the updated GSEED-RE DB risk score. Clip distances and DB risk reduction were obtained from our controlled trial (NCT02765022). Sensitivity analyses were performed varying this parameters: bleeding rate without clipping, clip interval, cost of one clip, cost of complete closure, cost of DB episode and incremental cost-effectiveness ratio (ICER) thresholds. As 24 combinations were considered, those analyses can be used in any economic scenario.

**Results** We registered 2263 EMR in 2130 patients until July 2017. DB rate in patients without clip prophylaxis was 4.6% in the total cohort (TC) and 12.9% in the high-risk group (HR). The average total cost was 2749.4€ per DB event (3349.3€ in the HR). Prophylactic clipping cost was estimated between 257 or 450€, depending on the clip interval. Universal clipping was not cost-effective, but selective clipping of HR patients was cost-effective in several scenarios.

**Conclusions** Clip closure of mucosal defects after EMR of LNCP is cost-effective but also cost-saving when complete closure is achieved in patients with high risk of delayed bleeding.

### OP331 COLD PIECEMEAL ENDOSCOPIC MUCOSAL RESECTION (EMR) FOR LARGE ADENOMAS AND SERRATED POLYPS: A TERTIARY REFERRAL CENTRE EXPERIENCE

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DOI 10.1055/s-0040-1704349

**Aims: Background** Conventional EMR carries a risk of delayed bleeding, perforation and post polypectomy syndrome. Incomplete polyp resection could lead to recurrence and post colonoscopy cancer.

**Aims** Utilisation of cold EMR in the endoscopic management of large sessile serrated polyps and adenomas.

**Methods** Prospective databases from our institution including 113 consecutive patients with 149 polyps (>1cm in size) resected by cold EMR between 2016 and 2018 were included. Demographics, clinicopathological and polyp characteristics, surveillance and recurrence data were analysed.

**Results** Male: female was 2:1 with a median age of 65 years (35-83). Median polyp size was 19mm (10-40mm). one hundred and seventeen polyps (78%) were in the proximal colon. Histology of resected polyps were: 47 adenomas (32%) and 102 sessile serrated polyps of which 3 had dysplasia (2.9%).

Intra procedural oozing was witnessed during resection and settled without any haemostatic interventions in 98.6% of cases. 2 cases needed application of clips to achieve haemostasis. One patient was admitted following the procedure with abdominal pain and managed conservatively. There were no delayed bleeding or perforation. A surveillance colonoscopy (6-36 months) were carried out in 80 patients (71%) and the remainder of the patients either awaiting a planned surveillance or discharged from surveillance programme.

Overall recurrence rate following cold EMR was 3.7% (4/108) and successfully treated with cold snare resection.

**Conclusions** Cold EMR for large adenomas and serrated polyps appears to be safe and feasible without any immediate or delayed complications.

### OP332V ENDOSCOPIC RESECTION FOR COLONIC ANGIOMAS

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DOI 10.1055/s-0040-1704350

A 63-year-old female was admitted for repeated hematochezia, red stool mainly, for one week. Physical examination showed anemic appearance without abdominal pain or rebound tenderness. Laboratory tests showed lower level of hemoglobin (76 g/L), and positive fecal occult blood test with abundant red blood cell. Emergency colonoscopy discovered a punctate bleeding in the left colon. Bleeding would be stopped after rinsing with water, but recovered after touching with the top of colonoscopy. Endoscopic resection was performed to remove the lesion (Video 1), and typical angioma was found in pathology. No bleeding occurred during the follow-up 2 years.

### OP333V REMOVAL OF RETAINED METALLIC CLIPS WITH UNDERLYING ADENOMA BY STAR (SNARE TIP ASSISTED RESECTION) TECHNIQUE

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DOI 10.1055/s-0040-1704351

We report 3 cases of clip-retention with residual adenoma formation on follow-up at 4months. EMR was done for adenomas in 2 cases and for < 1cm R0 SM1 adenocarcinoma in the last case. All the retained clips were in rectum.

A circumferential incision was made with tip of snare and snare opened into groove to remove the adenoma and clips. In one case clip was not retrieved and two clips were placed at base of retained clip. Subsequent endoscopy showed all clips had fallen off, with no adenoma recurrence. Reported incidence of clip retention is 4.2% to 8.6% at 3months.

### OP334V SUCCESSFUL RESCUE STRATEGY FOR THE TREATMENT OF A RECURRENT ADENOMA INVOLVING THE ILEOCECAL VALVE

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DOI 10.1055/s-0040-1704352

A case of successful removal of a recurrent adenoma of the ileocecal valve by cap-assisted EMR.

**Methods and results** A 60-year-old patient underwent a first colonoscopy at another center on January 2018. A LST-G was detected. The lesion was located near the ileocecal valve, partially involving it. A piece-meal EMR was performed.

6-month follow-up colonoscopy highlighted residual adenomatous tissue.

The patient was afterwards referred to our center, where cap-assisted EMR was performed in outpatient setting. Histologic examination confirmed R0 resection.

**Conclusions** Cap-assisted EMR is an advanced endoscopic technique likely to be used for removing recurrent colorectal lesions, avoiding surgical resection.

### OP335V GEL IMMERSION ENDOSCOPY (GIE) FACILITATES HAEMOSTASIS FOR THE MANAGEMENT OF BLEEDING POST WIDE-FIELD CAECAL ENDOSCOPIC MUCOSAL RESECTION (EMR)

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DOI 10.1055/s-0040-1704353

Post-procedural-bleeding (PPB) is an adverse event that may lead to hospitalisation, transfusion and additional endotherapy after wide-field-EMR (WF-EMR). Gel-immersion-endoscopy (GIE) has been recently described to improve targeted views and facilitate endotherapy.

WF-EMR was performed for a 60mm mixed-nodular type granular-laterally-spreading caecal-tumour (LST-G) and patient presented after 24h with PPB which required blood transfusion.

CO<sub>2</sub>-insufflation and water-irrigation were used without success at optimising views due to luminal fresh blood. Rapid mixture of blood and water prevented identification of bleeding-point. A clear-gel with increased viscosity was then infused into the lumen; this results in a clear 'visual-shield' which enhances visualisation and treatment of the culprit vessel.

Saturday, April 25, 2020

08:30 – 10:30

Esophageal High-tech: New

Liffey Meeting Room 2

treatment modalities for the esophagus

### OP336 ARGON PLASMA COAGULATION FOR BARRETT'S ESOPHAGUS WITH LOW-GRADE DYSPLASIA: RANDOMIZED TRIAL WITH LONG-TERM FOLLOW-UP EVALUATING THE IMPACT OF POWER SETTING AND PROTON PUMP INHIBITOR DOSE

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DOI 10.1055/s-0040-1704354

**Aims** Variable results have been reported on the ablation of Barrett's esophagus (BE) with argon plasma coagulation (APC) and the APC treatment protocol of BE has not been standardized. The aim of this randomized study was to evaluate the impact of power setting and post-ablation proton-pump inhibitor (PPI) dose on the efficacy and safety of APC for BE with low-grade dysplasia (LGD). The long-term outcomes of the treatment were also prospectively evaluated.

**Methods** Seventy-one patients were randomly assigned to APC with power set at 90W or 60W followed by 120mg or 40mg omeprazole. The primary outcome was the rate of complete (endoscopic and histologic) ablation of BE at six weeks. Secondary outcomes included safety and long-term efficacy. Analysis was conducted on an intention-to-treat basis.

**Results** Complete ablation of BE in the 90W/120mg, 90W/40mg, and 60W/120mg groups was confirmed in 18/23 (78%), 15/25 (60%), 17/23 (74%)

patients at six weeks and in 16/23 (70%), 13/25 (52%), and 15/23 (65%) patients at two years post treatment (differences not significant). Twenty-eight patients required additional APC for residual (n=23) or recurrent (n=5) BE. At a median follow-up of 108 months 66/71 (93%) patients maintained complete ablation, without significant differences between study groups. No high-grade dysplasia or adenocarcinoma developed. The overall rate of adverse events (97% mild in severity) did not differ significantly between groups. Chest pain/discomfort was more frequent in patients treated with 90W vs. 60W (19/23 (83%), 17/25 (68%), and 9/23 (39%) patients in the 90W/120mg, 90W/40mg, and 60W/120mg groups, respectively;  $p < 0.001$ ). One patient had esophageal perforation and two developed stenosis.

**Conclusions** The APC power setting and PPI dose did not impact the efficacy and safety of BE ablation. Irrespective of treatment protocol complete ablation of BE with LGD was durable in over 90% of patients without an evidence of neoplasia progression in the long term.

### OP337 FEASIBILITY OF SENTINEL NODE NAVIGATED SURGERY IN PATIENTS WITH HIGH-RISK SUBMUCOSAL (T1b) ESOPHAGEAL ADENOCARCINOMA USING A HYBRID TRACER OF TECHNETIUM-99M AND INDOCYANINE GREEN

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DOI 10.1055/s-0040-1704355

**Aims** Minimally invasive esophagectomy with two-field thoracalaparoscopic lymphadenectomy is the current standard of care for high-risk T1b esophageal adenocarcinoma. However, since the tumor can often be removed completely with endoscopic resection, and lymph node involvement only concerns the minority of patients, the majority of patients receive overtreatment. Sentinel node navigation surgery is a well-known concept to tailor the extent of lymphadenectomy. The aim of this study was to evaluate the feasibility and safety of sentinel node navigation surgery with a hybrid tracer (technetium-99m/indocyanine green/nanocolloid) for patients with high-risk T1b esophageal adenocarcinoma.

**Methods** In this prospective, multicenter pilot study, five patients with high-risk T1b esophageal adenocarcinoma without neoadjuvant treatment were included. The hybrid tracer was injected endoscopically the day before surgery, followed by preoperative imaging (lymphoscintigraphy/SPECT-CT). During surgery, sentinel nodes were localized and resected based on preoperative imaging, combined with intraoperative gammaprobe- and near-infrared detection. Immediately thereafter, standard of care minimally invasive esophagectomy was performed in all patients. Primary endpoints were the percentage of patients with detectable sentinel nodes, concordance between preoperative and intraoperative sentinel node detection, and the additive value of indocyanine green.

**Results** Sentinel nodes could be identified and resected in all five patients, with a median of 3 sentinel nodes (range 2-7) per patient. The concordance between preoperative imaging, and intraoperative gammaprobe- and

fluorescence-based detection of sentinel nodes was high. In 2 patients additional peritumoral sentinel nodes were identified with the near-infrared camera. None of the resected lymph nodes showed signs of (micro) metastases.

**Conclusions** Sentinel node navigation surgery using technetium-99m and indocyanine green seems feasible and safe in patients with high-risk T1b esophageal adenocarcinoma. Indocyanine green seems to be of additive value for detection of peritumoral sentinel nodes. More research is needed before introducing this new treatment algorithm in clinical daily practice.

### OP338 FIRST-IN-HUMAN EXPERIENCE OF THE NOVEL CRYOBALLOON SWIPE 180 ABLATION SYSTEM IN PATIENTS WITH DYSPLASTIC BARRETT'S ESOPHAGUS

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DOI 10.1055/s-0040-1704356

**Aims** Focal cryoballoon ablation has shown promising results for limited Barrett's esophagus (BE). The Cryoballoon Swipe Ablation System (CbSAS) was recently developed to treat larger BE. The CbSAS<sup>90</sup> (treatment of 90° over 3cm) has recently been shown to be feasible and effective. The CbSAS<sup>180</sup> is a new balloon catheter that directly treats half of the esophageal circumference (180°). This first-in-human study reports on the feasibility, safety and efficacy of CbSAS<sup>180</sup>.

**Methods** In this multicenter study, patients with BE (C≤3) and an indication for ablation were included. The study consists of two phases, a dose-finding and confirmation phase. Dose-finding started with the lowest dose possible (1.0mm/s). Per dose 6 patients were treated circumferentially (2 CbSAS<sup>180</sup> applications) over 3cm length. The dose was increased until the median BE regression was ≥60% without dose-related serious adverse events (DR-SAEs). BE regression was assessed on videos and still images by 2 independent expert endoscopists. DR-SAEs were defined as severe pain or strictures requiring dilation. In the second phase, the dose found in phase I will be confirmed in 19 new patients. Pain (0-10) and dysphagia (0-4) were evaluated during follow-up. Outcome parameters were technical success, DR-SAEs and BE regression.

**Results** Six patients were included with a median Prague score of COM2.5 and 50% previous endoscopic resections. The procedure was technically successful in all patients. Median ablation time was 6 minutes. The starting dose resulted in median 94% BE regression (range 60-99.5) without DR-SAEs. Median pain scores (IQR) were 2.5(2-5), 2.5(0-4), 0(0-1), 0(0-0) at days 0,1,7&30 respectively, and median dysphagia scores (IQR) 0.5(0-1) at day 1 and 0(0-0) for days 0,7&30.

**Conclusions** CbSAS<sup>180</sup> is feasible and treatment with a dose of 1.0mm/s resulted in 94% BE regression. The safety and efficacy of this dose will be confirmed in 19 new patients.

## OP339 PHOTODYNAMIC THERAPY IN THE TREATMENT OF ESOPHAGEAL CANCER

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DOI 10.1055/s-0040-1704357

**Aims** Esophageal cancer is characterized by poor prognosis. In the majority of cases radical operation cannot be performed due to tumor spread and concomitant diseases of age. Only 10% of patients receive surgical resection, providing 5-year survival only in 25%. Dysphagia is the main symptom of esophageal obstruction, which leads to poor quality and shortage of patients' life. Photodynamic therapy (PDT) is a new technique, providing tumor destruction with minimal damage to surrounding tissue. Application of PDT to esophageal carcinomas is rarely reported.

The aim of this study was the development of PDT technique for the treatment of obstructive esophageal cancer in inoperable patients for improvement of their quality of life and increase of their survival time.

**Methods** PDT has been performed in 52 inoperable patients with advanced esophageal cancer and high grade dysphagia (43 primary, 9 recurrent after surgery or chemo-radiotherapy). Tumors were located in the cervical (23), middle and lower thoracic (27) parts of esophagus and esophago-gastric anastomosis (2). Photoditazine (chlorin-e6 derivative) was used as photosensitizer. Diode laser and fibers with diffusing tip were used for irradiation via endoscopy.

**Results** The treatment was well-tolerated by all patients, including those with severe concomitant diseases. There were no lethal outcomes or severe complications. Recanalisation effect of PDT with recovery of dysphagia was observed in all cases and lasted for 6-7 months. Fourth part of patients survived 2 years. Dysphagia-free period after PDT was longer than after other palliative modalities (radio-frequency or Nd-YAG laser ablation).

**Conclusions** PDT is a safe and effective technique for obstructive esophageal cancer. Recovery of dysphagia and longer survival period in patients with obstructive esophageal cancer after PDT treatment are determined by vascular mechanisms produced by PDT which lead to vascular thrombosis and impaired tumor blood supply, these factors provide long-term process stabilization with significant improvement of patients' quality of life.

## OP340 COMPARATIVE STUDY OF SURGICAL AND ENDOSCOPIC TREATMENT FOR EARLY GASTROESOPHAGEAL JUNCTION CANCERS

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**Aims** Gastroesophageal junction (GEJ) cancers have increased in incidence. Early GEJ cancers may be submitted both to endoscopic or surgical treatment, depending on staging and patients' preferences and risks. However, there are no studies comparing endoscopic and surgical treatment of early GEJ cancers. We aimed to compare the efficacy and safety of endoscopic and surgical treatment.

**Methods** A retrospective assessment of all consecutive patients presenting with early GEJ cancers in a tertiary center from January 2011 to December

2018 was conducted. Data included curative resection, adverse events (AEs), metachronous lesions and mortality.

**Results** Forty-six patients with early lesions were included - 34 managed endoscopically and 12 by surgery. The former group had significantly more patients on antithrombotic medication and included lesions in any GEJ location besides cardia. Complete resection was similar in the surgical and endoscopic group (92% vs 88%; p= 1.0). Complete resection was lower in T1b lesions (LGD/HGD 100% vs T1a 91% vs T1b 67%; p=0.42) with no differences between surgical and endoscopic group. AEs were more frequent in surgical than endoscopic group (50% vs 30%; p=0.06) and significantly more severe (25% vs 8.8% for grade III and 8.3% vs 0% for grade IV of Clavien-Dindo classification; p=0.005) even in subgroup analysis by ASA and histology though not statistically significant. The endoscopic group had significantly higher risk of metachronous lesions (21.9% vs 0%; p=0.000 01). Re-intervention, disease progression and cancer-related death did not differ between the groups.

**Conclusions** Although the small sample and the retrospective design, this is the first study demonstrating that endoscopic treatment is equally curative and safer than surgery.

## OP341 ENDOSCOPIC RESECTION OF LOW GRADE DYSPLASIA IN BARRETT'S OESOPHAGUS: A RETROSPECTIVE STUDY ABOUT 61 PATIENTS

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DOI 10.1055/s-0040-1704359

**Aims** Barrett Oesophagus (BO) is a pre-cancerous lesion. ESGE recommends LGD endoscopic treatment. Because of the low rate of stenosis with thermablation, ESGE recommends radiofrequency for LGD in BO. However, pre-operative biopsy for BO are not reliable. That's why the policy of our unit is to perform endoscopic resection (ER) of LGD, allowing definitive histology on resection piece. We evaluated in this study this management, comparing pre-operative biopsy and final resection, and evaluating complication rate of ER.

**Methods** Single centre retrospective study based on the extracted data from coding database computer from 2008 to 2018. **Endoscopic procedure:** ER with cap-assisted technique (Duette system□) after injection of physiologic serum with indigo carmin. **Inclusion criteria:** LGD with BO referred for ER, with pathological readings by 2 digestive pathologists.

**Results** 61 (mean age = 58 years old; 41 men) patients were included. 20 patients had a BO < 3 cm, 8 a BO > 6 cm (mean = C1.8;M2.9). All patients underwent a mean of 1.3 ER. No immediate complication with re-intervention was reported. Post operative stenosis was reported for 4 patients (6%). All of them could be managed with endoscopic dilation (max = 3 sessions), and all of them were reported for long Barrett (C > 5 or M > 5). Pre-operative and post-operative histologic correlation was correct for 36 patients (60%). Post operative histology was inflammation for 9 (15%) patients, BO without dysplasia for 14 (22%) patients, adenocarcinoma in situ for 2 patients. Clinical success defined by the absence of LGD at one year, was 85%. No LGD or worst was reported at one year for 52 patients (85%). Mean follow-up was 48 months (12-132). Relapse for LGD was reported for 9 patients (15%)

**Conclusions** ER for LGD in BO is safe with a low rate of stenosis likely thermablation in particular for BO < 5 cm. ER should allow to adapt follow-up of patients regarding final histology obtained.

## OP342V CIRCUMFERENTIAL ESD FOR SQUAMOUS OESOPHAGEAL NEOPLASIA USING THE DOUBLE TUNNEL AND DOUBLE TRACTION METHOD APPLIED ON BOTH PILLARS: AN ORGAN PRESERVING PROCEDURE

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Esophageal endoscopic submucosal dissection (ESD) is technically challenging, even more if the lesion is broad and a circumferential resection is needed to perform a complete resection. In this case, we report a successful circumferential oesophageal ESD using the double tunnel and double clip-band line traction method, applying the traction on both pillars. With this strategy, the submucosa tissue is greatly exposed facilitating dissection. ESD was successfully completed using dual knife and SB knife achieving "en bloc" resection. The specimen showed a SCC with invasion of the lamina propria (T1,R0). A stenosis occurred and was endoscopically treated.

## OP343 SAFETY AND EFFICACY OF ANTIREFLUX ABLATION THERAPY (ARAT) AT THE ESOPHAGOGASTRIC JUNCTION (EGJ) IN PATIENTS WITH GASTROESOPHAGEAL REFLUX DISEASE (GERD) WITHOUT HIATAL HERNIA

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**Aims** GERD is a high-prevalent condition with potential severe complications. Medical and surgical treatments are the cornerstone; however, adverse events or complications limit their use. We hypothesize that an esophagogastric-junction(EGJ) controlled stenosis generated with a mucosal ablation(Antireflux ablation therapy[ARAT]), could decrease esophageal exposure to gastric contents. Therefore, our aim was to evaluate the safety and efficacy of ARAT in GERD treatment at early and mid-term.

**Methods** This prospective study(NCT03548298) was performed in a tertiary-care center in Mexico,from January 2016 to September 2019. GERD positive patients were included (acid exposure time[AET] > 6%, esophagitis <sup>3</sup>B and a positive GERD-HRQL questionnaire). ARAT technique was performed with a hybrid-APC catheter. First,EGJ was marked in retroflexion, then, submucosal bleb creation and finally mucosal ablation (300-330degrees) including z-line and 4cms below EGJ. Patients with hiatal hernia were excluded. Post-ARAT evaluation included endoscopy, pHmetry, and GERD-HRQL at 3,6,12,24 and 36 m. Success was considered when AET < 4%, no esophagitis and GERD-HRQL < 12points. Comparisons between pre and post-ARAT procedure were performed, considering a p < 0.05 as statistically significant.

**Results** 95 patients were included. Follow-up has been completed in 95/95 (100%),93/95(97%), 88/95(92%),80/95(84%) and 76/95(80%) at 3,6,12,24 and 36 m. 62/95(65%) were male and mean age was 46 ± 5.5yo. ARAT time was 33.1 ± 8.8 min,without procedural adverse events. 17/95(18%) had mild dysphagia, of whom 5 required endoscopic dilatation (1–2 sessions). GERD was totally(PPI withdraw), partially(decrease PPI dose) and no controlled in 78/95 (82.1%);14/95(14.7%) and 3(3.2%), respectively at 36 m follow-up. A second ARAT in partially controlled patients obtained total control in 11/14 (78.5%), and 3 didn't improve. Clinical, endoscopic and AET improved from 26.8 ± 5.3 to 8.9 ± 3.5(p = 0.002); esophagitis<sup>3</sup>B from 11.5% to 2.1%(p > 0.001) and 10.4 ± 2.2 to 3.8 ± 1.5(p = 0.01), between baseline and 36 m follow-up.

**Conclusions** ARAT is a novel promising minimally-invasive treatment with high rates of GERD control at early and mid-term evaluations. However, longer follow-up is needed to define its real role in this disease.

## OP344 EFFICACY AND SAFETY OF THE POSE PROCEDURE

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**Aims** Primary obesity surgery endolumenal method (POSE) is an incisionless weight-loss procedure in which full-thickness suture anchors are placed endoscopically in the stomach of obese subjects modifying gastric anatomy and helping the patients to change their nutritional habits and life style. Our aim was to describe its efficacy and safety.

**Methods** Prospective, non-comparative, observational evaluation of the POSE procedure efficacy and adverse events in a cohort of 222 obese subjects enrolled to a 12 months multidisciplinary schedule including nutritional and psychological assessment, who completed at least 6-months of follow-up, during 2015–2017. All patients signed the proper informed consent, and were performed by a single endoscopist (AJPG) with a previous background of 300 procedures, under antibiotics and GA in an inpatient basis. The patients took 12–18 gastric suture anchor plications. Demographic, technical features, clinical symptoms, and were described. Main outcomes were TBWL, TBWL%, EWL%, and final BMI, at 3, 6 and 12 months.

**Results** n = 222 obese 1–3 patients (41,1 years, 99.8 kg, BMI 36,92 kg/m<sup>2</sup>) were operated without intraprocedural major adverse events; 219 and 111 reached the 6 and 12 months f-up endpoints, respectively. Initial weight and BMI were significantly reduced at 3, 6 and 12 months, with a TBWL% of 9.2, 14.7 and 21.3 % at 3, 6 and 12 months and an EWL% at 3, 6 and 12 months of 66.7, 82.5 and 96.2%. Abdominal pain was the predominant symptom, 20% requiring opioids. Mean operating time = 22 minutes. There were 2 upper bleedings and 1 asymptomatic pneumoperitoneum, all managed conservatively; 98.6% were discharged within the first 24 hours.

**Conclusions** POSE is a safe, short interventional time, and well tolerated procedure for classes I–III obesity patients, and, associated to nutritional counseling and assessment shows good efficacy in terms of total body and excess weight loss at 6 and 12 months.

## OP345V ENDOSCOPIC TREATMENT OF GASTROESOPHAGIC REFLUX DISEASE - ARMS-A TECHNIQUE

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We present an endoscopic approach to the management of gastroesophageal reflux disease (GERD) using an anti-reflux mucosotomy technique (ARMS-A), employed as an option on patients with refractory GERD with proton-pump inhibitors (PPI) and who refuse surgery. The technique is performed in retroflexion, with the application of argon-plasma on the gastric mucosa of the gastroesophageal junction, creating a circumferential mucosal ulceration and consequently leading to a narrowing of the gastric cardia opening. The scar formation after healing leads to a fundoplication-like effect. This is a simple technique, may allow discontinuation of the PPI and promises a sustained relief of symptoms.

## OP346 COMPARISON OF LONG-TERM OUTCOMES BETWEEN STRETTA AND ANTI-REFLUX ENDOSCOPIC SURGERY (ARES) IN REFRACTORY GERD PATIENTS

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DOI 10.1055/s-0040-1704364

**Aims** Traditionally, the use of proton pump inhibitors (PPI) in gastroesophageal reflux disease (GERD) is well-known as a primary treatment. However, approximately 10 percent of patients failed to respond to PPI treatment. Recently, noble endoscopic techniques, such as anti-reflux endoscopic surgery (ARES) and Stretta, have been developed. The aim of this study is to compare the long term outcomes and efficacy between anti-reflux endoscopic surgery (ARES) and Stretta procedure.

**Methods** This study was conducted as a retrospective, single-center study in Cha Bundang Medical Center. From December 2015 to July 2019, a total of 208 patients has been diagnosed as refractory GERD. Total of 113 patients and 82 has performed ARES and Stretta procedures, respectively; however, 30 patients and 32 patients have been excluded due to follow-up loss or prior endoscopic or surgical procedures. Long clinical outcomes among the two groups were compared using the GERD symptom score (GERD-Q score), EndoFlip, 24 hr pH monitoring, and esophageal manometry.

**Results** The GERD-Q score and 24 hr pH monitoring were significantly improved in both groups. In Stretta group, the GERD-Q scores measured In Stretta group were 10.514 [9.618 to 11.409] prior to the procedure, 8.201 [7.392 to 9.009] after 3 months, and 7.727 [7.030 to 8.425] after 6 months. In the ARES group, the GERD-Q scores were 10.653 [10.015 to 11.292] prior to the procedure, 7.874 [7.297 to 8.451] after 3 months, and 7.414 [6.917 to 7.912] after 6 months. To compare the procedural outcomes in 3 months and 6 months, respectively, the delta ratio has been calculated. The delta ratio of GERD-Q score in 3 months and 6 months after the procedure were 1.914 [0.848 to 4.320] ( $p = 0.118$ ), and 1.627 [0.631 to 4.196] ( $p = 0.314$ ).

**Conclusions** Both ARES and Stretta are good alternative treatment options for refractory GERD patients rather than PPI therapy. However, there was no significant difference in treatment outcomes between the two group.

Saturday, April 25, 2020

Finders keepers

11:00 – 13:00

Liffey Hall 1

## OP347 DYE-BASED CHROMOENDOSCOPY VERSUS STANDARD-DEFINITION AND HIGH-DEFINITION WHITE-LIGHT ENDOSCOPY FOR ENDOSCOPIC ADENOMA DETECTION IN LYNCH SYNDROME: META-ANALYSIS OF INDIVIDUAL PATIENT DATA FROM RANDOMISED TRIALS

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DOI 10.1055/s-0040-1704365

**Aims** The additional diagnostic value of dye-based chromoendoscopy (CE) compared to standard-definition and high-definition white-light endoscopy (SD-WLE and HD-WLE) for surveillance of Lynch syndrome (LS) patients is subject to debate. To clarify this debate, an individual patient data (IPD) meta-analysis was performed.

**Methods** Randomised controlled trials (RCTs) comparing the efficacy of dye-based CE to WLE for the detection of adenomas in LS patients (*MLH1*, *MSH2*, *MSH6*, *PMS2*, *EpCAM*) were included. The primary outcome was the adenoma detection rate (ADR) (i.e. proportion of patients with at least one adenoma detected during colonoscopy). Patients were subdivided in two groups:

- (1) SD equipment and
- (2) HD equipment.

Mixed-effect logistic regression models were used to estimate ADR across studies.

**Results** Two RCTs and one randomised tandem study were included, comprising 533 LS patients with a proven mutation. HD equipment was used in 363/533 (68%) of the procedures. The ADR was 74/265 (28%) in patients randomised to WLE compared to 83/266 (31%) patients randomised to CE (odds ratio [OR] 1.17; 95%CI 0.81-1.70,  $P=0.41$ ). No difference in ADR was observed for either imaging modality within the HD (OR 1.20, 95%CI 0.77-1.90,  $P=0.42$ ) or SD equipment subgroup (OR 1.17; 95%CI 0.60-2.32,  $P=0.65$ ). The mean number of adenomas detected per patient with CE was 0.52 compared to 0.47 with WLE (incidence rate ratio 1.09; 95%CI 0.78-1.52,  $P=0.60$ ). CE was more time consuming than WLE (mean extubation time CE 19 vs WLE 12 minutes,  $P<0.01$ ).

**Conclusions** In this IPD meta-analysis of RCTs in LS patients, dye-based CE did not improve the ADR or mean number of adenomas detected per patient compared to WLE. As CE was associated with a prolonged procedural time and prior studies showed that HD equipment increases adenoma detection compared to SD equipment, we suggest to use HD-WLE as the preferred image modality for the surveillance of LS patients.

## OP348 ENDOSCOPIC RADIOFREQUENCY ABLATION OR SURVEILLANCE OF BARRET'S ESOPHAGUS WITH LOW GRADE DYSPLASIA: A FRENCH MULTICENTER RANDOMIZED TRIAL

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DOI 10.1055/s-0040-1704366

**Aims** Recent studies have suggested an annual neoplastic progression rate of Barrett's esophagus (BE) containing low grade dysplasia (LGD) of 9 to 13%, leading to consider endoscopic ablation therapy rather than surveillance. We aimed to compare radiofrequency ablation (RFA) to endoscopic surveillance in the management of BE containing LGD.

**Methods** This is a prospective multicenter randomized study comparing RFA (up to 4 sessions every 2 months) to a yearly endoscopic surveillance. Inclusion criteria were the presence of a C >1 or M > 2 BE with intestinal metaplasia and LGD confirmed by an expert central pathologist. The main judgement criteria was the rate of LGD at 3 years, and the secondary judgement criteria were the rates of complete remission of intestinal metaplasia (CRIM), neoplastic progression at 3 years, and treatment morbidity.

**Results** 125 patients were included and 82 randomized, 40 in the RFA and 42 in the surveillance arm. The median (IQR) number of RFA sessions was 3 (2-4). In intention to treat, the 3-year prevalence of LGD was 34.3% [18.6-50.0] in the RFA group and 58.1% [40.7-75.4] in the surveillance group, OR = 0.38 [0.14-1.02],  $p = 0.05$ . The 3-year CRIM was 30% [15.8-44.2] vs. 0,  $p < 0.001$  in the RFA and surveillance arms, respectively. The 3-year neoplastic progression rate was 13.5% in the RFA group and 27.5% in the surveillance group,  $p = 0.15$ . The complication rate was maximal after the first RFA treatment (16.9%) and diminished with the treatment sessions.

**Conclusions** A spontaneous regression of LGD on BE occurred in more than 40% of the patients in the surveillance group at three years. The 30% rate of CRIM, lower than reported in the literature, might explain the absence of significantly different 3-year neoplastic progression rates among the groups. Further analyses are needed to determine the factors associated with the CRIM failures.

### OP349 INCIDENCE OF COLORECTAL NEOPLASIA AMONG YOUNG PATIENTS WITH LYNCH SYNDROME IN CORRELATION WITH THE TYPE OF MUTATION: RESULTS OF THE LARGEST PARIS AREA COHORT

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DOI 10.1055/s-0040-1704367

**Aims** International guidelines recommend colorectal cancer (CRC) screening in patients with Lynch Syndrome, starting from 20-25 years-old except for MSH6 and PMS2 where the screening should start at 35 years-old.

**Methods** This is an observational analytical study. All consecutive patients under 50 years-old followed within the PRED-IdF network with a proven germline mutation were included between 2010 and 2019. Demographics, type of

mutation and endoscopic data were collected. To assess the age of primary colorectal event, we defined "colorectal neoplasia" (CN) as the detection of any of the following events: CRC, adenoma and/or sessile serrated lesion (SSL). Factors associated to CN were assessed by Cox regression survival analysis.

**Results** Seven hundred and eight patients (median age: 35 [15-50] years, male ratio 0.7) underwent 2429 colonoscopies during a median follow-up of 55 [0-350] months. They presented with the following mutations: MLH1 (33.5%), MSH2 (45.6%), MSH6 (15.3%), PMS2 (4.2%) and EPCAM (1.4%).

The quality of colonoscopy preparation was good in 73.5% of cases. Chromoendoscopy by indigo carmin was performed in 72.7% of cases.

The global incidence of CN, CRC, adenoma and SSL were respectively of 53%, 22.9%, 37.9% and 6.6%. For patients with MSH6 mutation, the age at first CN was significantly older than for other mutations ( $p = 0.038$ ). Among these, we reported that 25% of CN occurred before 35 years-old, including 7 adenomas including, 1 advanced adenoma, 1 serrated adenoma and 5 CRC.

Overall, by multivariable analysis, age (HR: 1.038, CI95%: 1.026-1.116), male sex (HR: 1.460, CI95% [1.017-1.061]), and tobacco use (HR: 1.672 CI95%: 1.252-2.233), were associated with a higher incidence of CN.

**Conclusions** In this PRED-IdF study, MSH6 mutation and demographic factors were associated with a delayed CN development. However, we report CN in MSH6 carriers before the age of 35 years, which may limit the application of recent guidelines.

### OP350 CLINICOPATHOLOGICAL CHARACTERIZATION AND SURVIVAL OUTCOME OF EARLY ONSET COLORECTAL CANCER IN THE LAST 30 YEARS IN THE NETHERLANDS

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DOI 10.1055/s-0040-1704368

**Aims** Colorectal cancer (CRC) incidence is increasing in young adults. Most of the early-onset CRC (EOCRC) are sporadic. Little is known about the clinicopathological characteristics of sporadic EOCRC. To identify features unique to EOCRC, we evaluated clinicopathological characteristics and survival outcome in EOCRC patients in the Netherlands within the last 30 years.

**Methods** All patients diagnosed with CRC < 50 years of age between 1990-2018 and in the absence of Lynch syndrome were included. Patients were divided in 3 groups: group 1 (20-29 years old); group 2 (30-39 years old); group 3 (40-49 years old). Clinical characteristics included: gender, tumor location and presence of metastasis. Pathological characteristics included: tumor type, differentiation grade, invasion depth and presence of lymph node. Chi-square tests and Log rank tests were performed.

**Results** 6.632 CRC patients were included; group 1: 209 (3%) patients, group 2: 1255 (19%) patients, group 3: 5168 (78%) patients. No difference in sex was observed between the groups. Group 1 had the highest occurrence of colon carcinomas (69.2% vs. 61.9% and 61.2% in group 2 ( $p = 0.049$ ) and 3 ( $p = 0.022$ )). Group 1 and 2 showed higher occurrence of signet ring-cell carcinoma (5.3% and 3.6% vs. 1.3%,  $p < 0.001$ ), CRC was more often poorly differentiated (21.5% and 15.2% vs. 12.8%,  $p = 0.001$ ) and more often positive lymph nodes were present (16.2% and 9.8% vs. 7.8%,  $p = 0.000$ ) versus group 3. Group 3 had the highest occurrence of adenocarcinoma (75.0% vs. 68.7% and 66.0% in group 2 and 1,  $p < 0.001$ ). No difference was found in presence of metastasis. Overall survival rates were 59.8% (group 1), 62.4% (group 2), 63.4% (group 3) ( $p = 0.788$ ).

**Conclusions** Poor prognosis pathological features of CRC are more prevalent in (non-Lynch syndrome) early onset CRC compared to older ages. This did not affect overall survival of the youngest patients compared to the 30-49 year olds.

## OP351 LONGITUDINAL FIT ADHERENCE ANALYSES USING ITALIAN DATA

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**DOI** 10.1055/s-0040-1704369

**Aims** To analyze patterns of participation among people invited for FIT screening and to assess the impact of screening history on the main performance parameters of the test.

**Methods** *Screening protocol:* biennial single sample FIT (Oc Sensor, Eiken Co. Japan), with a positivity cut-off set at 20 µg f-Hb/gr faeces (100 ng/ml). The kit is delivered at the pharmacies

**Outcomes:** Adherence, positivity rate (PR), detection rate (DR), positive predictive value (PPV).

Individuals were classified as Consistent attenders (attended all rounds invited); Inconsistent attenders (attended some but not all rounds invited); Never attenders (attended no rounds invited), based on their screening history prior to index round.

We analyzed participation rates, PR, DR and PPV for advanced neoplasia (AN-CRC+ advanced adenomas) at the fourth screening round, stratifying by screening history.

**Results** The participation in the fourth round was predicted by the numbers of previous tests performed: subjects who attended more recent invitations were more likely to respond, within each sub-group of subjects having attended the same number of previous invitations.

PR, and DR showed an inverse association with the number of previous tests preformed: PR: 10.3%, 8.1%, 6.1%, 4.9% for never attenders, subjects having attended 1, 2 and 3 previous invitations respectively. AN DR: 3.1%, 1.9%, 1.3%, 0.9% for never attenders, subjects having attended 1, 2 and 3 previous invitations respectively.

The proportion of subjects who respond to all screening invitation varies across different programs.

It was around 49% after 5 rounds in a program showing a high participation rate in each round

**Conclusions** The number of previous negative examinations and possibly the interval between them are associated with the subsequent likelihood of a positive FIT result, as well as with the AN PPV and DR at subsequent rounds. The group of inconsistent attenders may include subjects at different risk

## OP352 COLORECTAL CANCER INCIDENCE AND MORTALITY IN SUBJECTS WITH POSITIVE FAECAL IMMUNOCHEMICAL BLOOD TEST WHO DO NOT ATTEND SCREENING COLONOSCOPY

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**DOI** 10.1055/s-0040-1704370

**Aims** In the colorectal cancer screening programmes of the Veneto region, compliance with colonoscopy among subjects with a positive faecal immunochemical test (FIT) is firmly less than 90%. We compared the incidence of colorectal cancer (CCR) and cause-specific mortality in subjects with a positive who complied or did not comply with colonoscopy.

**Methods** We selected all the positive FITs occurred from January 1st, 2003 to December 31st, 2017, distinguishing between compliers and non-compliers with colonoscopy. These two cohorts were linked with the archives of the Veneto Cancer Registry and the Regional Mortality Registry in order to identify CCR diagnoses and deaths due to CCR, from the date of the screening test until to December 31st, 2018. We

calculated the cumulative incidence and cumulative mortality at 15 years, using the Kaplan-Meier estimator, and compared the two cohorts using the Cox model, adjusting by gender and five-year age class.

**Results** At 15 years from the screening test, the cumulative incidence of CCR was 48.1 % (95% CI 45.6-50.7) among colonoscopy compliers and 61.1 % (95% CI 52.9-70.6) in non-compliers, while cumulative mortality for CCR was 9.3 % (95% CI 7.1-12.1) among compliers and 22.1 % (95% CI 17.6-27.8) in non-compliers. The risk of dying by CCR among non-compliers was 120% higher than among compliers (Hazard Ratio 2.20, 95% CI 1.84-2.63).

**Conclusions** The excess of risk of cause-specific death among non-participants requires that screening programs adopt effective solutions to increase compliance with colonoscopy among subjects with a positive faecal occult blood test.

## OP353 DIAGNOSTIC YIELD OF CLEARING COLONOSCOPY ONE-YEAR AFTER BASELINE COLONOSCOPY IN PATIENTS WITH HIGH RISK ADENOMAS

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**DOI** 10.1055/s-0040-1704371

**Aims** Patients with  $\geq 5$  small adenomas or  $\geq 1$  adenoma  $\geq 20$ mm are recommended to undergo one-year clearing colonoscopy according to the European guidelines. However, data from studies supporting this recommendation are not entirely consistent.

The aim of this study was to evaluate one-year colonoscopy diagnostic yield based on advanced adenoma (AADR), CRC (CRCDR) and serrated polyps (SPDR) detection rates.

**Methods** Descriptive, multicentric, cross-sectional study across four regions in Spain. Participants from organized FIT screening program between January 2014 and December 2015 were recruited. Inclusion criteria:  $\geq 1$  adenoma  $\geq 20$ mm or  $\geq 5$  small adenomas. Exclusion criteria: incomplete procedure, inadequate colon cleansing, hereditary CRC syndromes and IBD.

**Results** A total of 1876 patients were included (73.6% male; median age 62 years-old (range 49-72)). 48.9% of patients presented  $\geq 5$  small adenomas, 39.6% had  $\geq 1$  adenoma  $\geq 20$ mm and 11.5% fulfilled both criteria. The median of colonoscopies needed for diagnosis was 1 (range 1-6) and checking the polypectomy scar (34.9%) was the main reason for repeating the procedure. The median of time from baseline colonoscopy to surveillance was 13.1 months (25<sup>th</sup>P 12.1-75<sup>th</sup>P 14.4).

Detection rates during surveillance were: adenomas 58.2%, advanced adenomas 10%, serrated polyps 14.7%, advanced serrated polyps 2.5%, CRC 0.3% and advanced polyp detection rate 12.5%.

Patients with  $\geq 10$  adenomas [OR1.85 (95%CI 1.21-2.84)], advanced adenomas located proximal to sigmoid [OR1.63 (95%CI 1.19-2.24)] and those with  $\geq 5$  serrated lesions [OR2.42 (95%CI 1.02-5.75)] had increased risk of

advanced polyps during 1-year surveillance colonoscopy. In the multivariate analysis, only both criteria ( $\geq 1$  adenoma  $\geq 20$ mm or  $\geq 5$  small adenomas) was related with advanced polyps during one-year clearing colonoscopy [(OR)2.96 (95%CI 1.29-6.83)].

**Conclusions** In high-risk patients, advanced polyps detection rate was 12.5%, but only 0.3% of patients presented CRC. Patients who fulfilled both high-risk criteria benefit most from 1-year surveillance colonoscopy. It could be considered to extend the surveillance interval in the remaining patients.

### OP354 EFFECT OF IMPLEMENTING A REGIONAL REFERRAL NETWORK ON SURGICAL REFERRAL RATE OF BENIGN POLYPS FOUND DURING A COLORECTAL CANCER SCREENING PROGRAM: A POPULATION-BASED STUDY

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DOI 10.1055/s-0040-1704372

**Aims** Surgical management is too often performed as a first-line treatment for large benign colorectal polyps. We report the evolution of the management of benign lesions detected in organized colorectal cancer (CRC) screening.

**Methods** We carried out a population-based study, using the years 2012, 2016 and 2017 in order to compare the results of management of benign colorectal lesions since from 2016 a regional referral network has been implemented in our geographic area.

The main objective was to compare the evolution of the surgical management rate for benign lesions before and after the development of a regional referral network with experts in interventional endoscopy.

**Results** 1571 patients had a colonoscopy following a positive test, 981 colonoscopies showed at least one lesion.

The adenoma detection rate was 57%, lower for the 2012 tests (*Hemocult II*) at 40% compared to 62% and 57.5% in 2016 and 2017 (FIT) ( $p < 0.0001$ ).

The surgical management rate for benign lesions decreased significantly, from 14.6% in 2012 to 7.5% in 2016 and 5% in 2017 ( $p = 0.016$ ).

Surgical management of benign lesions was significantly more important in the private sector (10% compared to 2.8%,  $p = 0.001$ ) but tends to decrease.

The risk factors for surgery for benign lesions were year 2012 (OR:3.35,  $p = 0.22$ ), high-grade dysplasia (OR:2.49,  $p = 0.04$ ), *in situ* carcinoma (OR:5,  $p = 0.003$ ), size  $\geq 20$ mm

(OR:17.39,  $p < 0.0001$ ), private sector (OR:6.6,  $p = 0.0002$ ).

Morbidity at one month for benign lesions over 20 mm was 20.4% (versus 6% with endoscopy,  $p = 0.044$ ) and the cost was 6 times higher with surgery (7197.7 euros (+/- 3018) versus 1128.6 euros (+/- 353),  $p < 0.0001$ ).

**Conclusions** This study is the first to demonstrate a direct life and cost saving effect of the establishment of a specialized regional network for large superficial benign colorectal lesions. However, benign lesions directly send to surgeons are too frequent and absolutely need to be avoid.

### OP355V ENDOSCOPY NURSE LED SERVICE

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DOI 10.1055/s-0040-1704373

This abstract aims to show the effectiveness of a nurse led service in endoscopy. It breaks down the processes of the patient journey in the English bowel cancer screening programme at St. Marks Hospital in Harrow, London. We followed a patient journey and the processes that are undertaken from the nursing workforce to achieve safe and effective patient outcomes. The results are measured in the number of procedures

undertaken, the adenoma detection rate and patient feedback. We have shown that a nurse led service is an integral part of endoscopy services and is safe, efficient and effective.

### OP356V DETECTION OF DYSPLASTIC LESIONS IN FUNDIC GLAND POLYPS IN FAP PATIENT - A CASE REPORT

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DOI 10.1055/s-0040-1704374

Familial adenomatous polyposis (FAP) - rare genetic disease. 20-80% patients with FAP has fundic gland polyps (FGP) in stomach. Sometimes they have dysplastic changes, but HGD in european patients with FAP is very rare and difficult for detection.

There are some papers about "white mucosal patch" (WMP) - symptome helping to find dysplastic FGP.

Our case is about patient with FAP and FGP. WMP was detected, biopsy showed HGD and piecemeal EMR was performed. Histologic examination of resected specimen confirmed HGD.

Thus WMP is useful and high-specific sign of FGP' HGD.

### OP357 DOES QUALITY OF SCREENING COLONOSCOPY DIFFER BY WEEKDAY?

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DOI 10.1055/s-0040-1704375

**Aims** Previous studies showed, that the so called „weekend effect“ exists, which means that health care on weekends is worse than on regular weekdays (Huijts DD et al., J Natl Compr Canc Netw., 2019). Aim was to see if quality of screening colonoscopy is also worse on weekends, using the adenoma detection rate (ADR) as quality indicator.

**Methods** 304.774 screening colonoscopies performed by 315 physicians between 2007-2019, within the Austrian certificate of screening colonoscopy got analyzed to investigate if ADR differs by weekday. ADR got calculated for each endoscopist. Mean ADR per weekday got compared via ANOVA and were considered significant if  $p < 0,05$ .

**Results** Results showed that the most screening colonoscopies were performed on Monday (n=65716) and the least on Sunday (n=3319). On Saturday

► Tab. 1

	Mon	Tue	Wed	Thu	Fri	Sat	Sun
ADR (mean +SD)	19,4-4% (13,-70)	19,-29% (14,-41)	20,6-0% (14,-37)	20,-01% (15,-43)	20,-59% (18,-17)	23,-40% (30,-34)	21,-73% (30,-88)
Absolute numbers	n=6-5716	n=6-5400	n=6-0751	n=6-2144	n=-42-027	54-17	331-9

172 endoscopists performed colonoscopy and 162 on Sunday. According to the ADR the highest mean ADR was reached on Saturday with 23.40% (SD=30.34%), and the lowest on Tuesday with a mean ADR of 19.29% (SD=14.41%). Still, there was no significant difference ( $p=0.212$ ). Results are shown in table 1.

**Conclusions** There was no significant difference comparing ADRs from Monday to Sunday ( $p=0.212$ ). This outcome shows that there is no decrease in quality of screening colonoscopy on the weekend. This might be because data stem from the certificate of screening colonoscopy and endoscopists, who are participating are aware of their ADR and are always trying to improve.

### OP358 RESULTS OF THE TWO ROUNDS OF THE COLORECTAL CANCER SCREENING PROGRAMME IN THE BALEARIC ISLANDS (SPAIN)

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DOI 10.1055/s-0040-1704376

**Aims** The aim of this study is to present the results and impact during the two rounds of the programme in Balearic Islands.

**Methods** The Balearic CRC programme includes until now two rounds, the first one from January 2015 to December 2016, and the second one from January 2017 to December 2018.

The programme has been developed in the areas of Menorca, Ibiza-Formentera and Tramuntana (Mallorca), including 30% of the Balearic Islands population.

The target population, people who reside in these areas aged between 50 and 69 years old, was 75.575 individuals.

Quantitative immunochemical fecal occult blood testing (i-FOBT/OC-Sensor) was the screening method. Participants who tested positive ( $\geq 100$  ng/ml) were referred to pre-endoscopy evaluation and then colonoscopy.

**Results** Total number of sent letters was 122 078. Overall participation rate (number of people who provide their i-FOBT sample) was 28.8% ( $n=35\ 160$ ). Positive rate of i-FOBT was 6.51% (2 289) and 89.78% of those positive tests underwent a colonoscopy (we had a 10.22% of exclusions and resignations after pre-endoscopy evaluation). 2 055 colonoscopies were performed. 116 adenocarcinomas were found and of those 75.86% were in stage I and II. 472 of colonoscopies were classified as high risk (as it was established in the EU 2010 guidelines as  $\geq 5$  adenomas or at least one  $\geq 20$  mm). They have been reported 2 cases of colon perforations, both resolved by endoscopic treatment.

**Conclusions** The participation rate in the two rounds of the colorectal cancer screening programme of the Balearic Islands was acceptable.

The index of positivity rate of i-FOBT and the results of the endoscopic explorations are according with the observed in other colorectal cancer screening programmes.

We can conclude that we had a successful development of these two rounds of our programme.

Saturday, April 25, 2020

11:00 – 13:00

EUS- guided therapy: From training to complications

Liffey Meeting Room 3

### OP359 HOW MANY EUS-GUIDED GASTROJEJUNOSTOMY PROCEDURES ARE NECESSARY FOR PROFICIENCY? AN APPRAISAL OF THE LEARNING CURVE FOR A SINGLE OPERATOR

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DOI 10.1055/s-0040-1704377

**Aims** Endoscopic ultrasound-guided gastrojejunostomy (EUS-GJ) can be an alternative to surgery/enteral stenting to manage gastric outlet obstruction (GOO). However, no data are available on the learning curve for EUS-GJ, and defining it is mandatory for the creation of adequate subspecialty training programs and quality assurance.

**Methods** Consecutive patients that underwent EUS-GJ between 2014-2019 by the same endoscopist. Cumulative sum (CUSUM) analysis was used to assess the learning curve for EUS-GJ in terms of procedural time. The overall mean procedure time was used as the target value. Proficiency was defined as the number of procedures at the inflection point in the CUSUM graph. Mastery was defined as the number of procedures at which the average time of procedures was consistently similar to, or lower than, the target value (plateau or descent in the CUSUM graph). Moving average graphs were also used to assess procedural time. Secondary outcomes were efficacy and safety of EUS-GJ.

**Results** Sixty-one patients were included (49% F, mean age 61 years). Technical success was achieved in 58 (95%) of patients. The mean procedural time was 36.8 min (SD 24.6). Clinical success (oral diet within a week) was achieved in 89% of patients.

At an evaluation of the CUSUM curve, 25 cases were needed to achieve proficiency, and 40 cases were needed to achieve mastery of the technique. These results were confirmed with the average moving curve.

The composite outcome of technical failure and/or immediate adverse events occurred in 6(10%) patients, all occurring during the first 40 cases. Endoscopist's experience with < 40 cases was the only factor marginally associated with the composite outcome ( $p=0.06$ ).

**Conclusions** We report for the first time data on the learning curve for EUS-GJ. About 25 procedures can be considered the threshold to achieve proficiency, and about 40 cases are needed to reach mastery of the technique.

### OP360 LUMEN APPOSING METAL STENTS RELATED ADVERSE EVENTS. RESULTS FROM A NATIONWIDE PROSPECTIVE REGISTRY

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DOI 10.1055/s-0040-1704378

**Aims** Describe the number, type and severity of adverse events associated to lumen-apposing metal stents (LAMS) in a real-life setting.

**Methods** Multicenter prospective case series including all consecutive LAMS placed to access extraluminal structures between January-October 2019. Centralized follow-up was performed via standardized telephonic questionnaires, at 14 days and 3,6,9 and 12 months after placement or until LAMS removal. In case of positive or missing responses to the questionnaire, a query was raised to the local investigators, whose reports were evaluated by a commission for categorize event.

**Results** A total of 283 procedures performed in 258 patients, median age: 69 years (IQR:59-82), 63% males from 27 centers, were included. Technical success was reached in 96%. Stent placement indications are summarized in ► **Table 1**.

After a median follow-up of 71 (IRC:28-93) days, 128 (45.2%) stents retrieved, 52 patients (18.4%) died and 103 (36.4%) had their stent still in-situ. 62 LAMS related events were identified in 56 procedures (19.8%), 22 mild, 21 moderate, 16 severe and 3 deaths (digestive haemorrhage in walled-off-necrosis(WON) and 2 perforations, gastrojejunostomy and choledochoduodenostomy). Most frequent complications were haemorrhages (17 cases) and LAMS obstruction related infections (16 cases). Cumulative risk of LAMS related adverse events 3 months after deployment was 21.2%(16.5-27.2%), while the cumulative risk of severe/fatal events was 7.3%(4.6-11.4%). Overall, 3-month cumulative risks were higher in WONs, 31.3%(20.1-46.5%), and pseudocysts, 37.8%(21-61.5%), than in gallbladder drainages 6.2%(20.3-18.1%) or enteral anastomoses 18.6%(10.8-30.7%).

**Conclusions** Our study shows an acceptable overall risks rate, although the 3 (0.9%) LAMS related deaths require further analysis of risk factors.

► **Tab. 1** Indications

Enteroanastomosis,n(%)	70(24.7%)
WON,n(%)	69(24.5%)
Gallbladder drainage,n(%)	52(18.4%)
Pseudocysts, n(%)	36(12.7%)
Others,n(%)	56(20%)

## OP361 USEFULNESS OF LUMEN-APPOSING METAL STENTS (LAMS) IN ENDOSCOPIC ULTRASOUND-GUIDED GALLBLADDER DRAINAGE (EUS-GBD) IN PATIENTS WITH ACUTE CHOLECYSTITIS UNSUITABLE FOR SURGERY

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DOI 10.1055/s-0040-1704379

**Aims** In recent years, EUS-guided gallbladder drainage (EUS-GBD) has become an effective and safe alternative to percutaneous cholecystostomy patients deemed unfit for surgery. We aimed to assess the usefulness and safety of LAMS in EUS-GBD in patients with acute cholecystitis or recurrent biliary colic who were high risk candidates for cholecystectomy.

**Methods** Retrospective study of all EUS-GBD cases performed in a third level hospital between January 2017 and June 2019. In all cases, a Hot AXIOS stent with "free hand" technique and double-pigtail stent inside was placed.

**Results** 33 patients with acute cholecystitis (31) or recurrent biliary colic (2) were considered for inclusion. In 1 patient EUS-GBD was performed with a double-pigtail plastic stent, and in 5 patients the drainage was not technically feasible, so the study group finally included 27 patients (16 men/11 women) with a mean age of 79.8 ± 11.6 years. 7 patients (26.9%) had a percutaneous drainage at the time of the EUS-GBD. The technical and clinical success rate was 100%. Cholecystoduodenostomy (CD) was performed in 19 cases and cholecystogastrostomy (CG) in 8. No immediate complications were observed. 3 late complications occurred (11.1%): two mild complications (7.4%) (migration of the stent into the gallbladder) and 1 moderate (3.7%) (recurrence of cholecystitis due to occlusion of the stent). The mean hospital stay after drainage was 3 (2-7.25) days. Complications were significantly more frequent in CG vs CD: 37.5% vs 0% (p=0.019); in women vs men: 27.5% vs 0% (p=0.027), and in patients with previous cholecystitis or previous percutaneous drainage (p< 0.05). In 3 patients the stent was removed after resolution of the cholecystitis with no recurrence of cholecystitis during follow-up.

**Conclusions** EUS-GBD is an effective and safe procedure in poor surgical candidates with acute cholecystitis. Transgastric access seems to be associated with a higher incidence of long-term complications.

## OP362 A NOVEL ELECTROCAUTERY-ENHANCED LUMEN-APPOSING METAL STENT FOR ONE-STEP EUS-GUIDED DRAINAGE OF BILE DUCT AND GALLBLADDER

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DOI 10.1055/s-0040-1704380

**Aims** EUS-guided transmural drainage (EUS-TD) of the bile duct and gallbladder (GB) using a lumen-apposing metal stent (LAMS) has been established as one of the effective alternative procedure. Moreover, as the electrocautery-enhanced delivery system enhanced LAMS has been introduced, one-step EUS-biliary drainage (BD) is facilitated in a recent. In this study, we evaluated the feasibility of the novel electrocautery-enhanced LAMS for one-step EUS-guided choledochoduodenostomy (CDS) or GB drainage (GBD).

**Methods** Patients who had failed ERCP for the drainage of malignant distal biliary obstruction or patients with acute cholecystitis by malignant biliary

stricture or high risk for surgery were enrolled prospectively. EUS-CDS or GBD were performed using a fully covered LAMS with an electrocautery-enhanced device (Niti-S HOT SPAXUS; Taewoong Medical Co., Ltd., Ilsan, South Korea). Primary outcome is technical success of EUS-CDS and EUS-GBD.

**Results** Among 14 enrolled patients (median age, 70.5 years; 10 males), EUS-GBD and EUS-CDS were performed in 8 patients and 6 patients, respectively. Overall technical success rate of EUS-BD was 92.9% (13/14 patients) with one technical failure in EUS-GBD. All 13 patients successfully undergoing EUS-BD showed clinical success (100%). Median procedure time of EUS-GBD and CDS were 13 min and 7 min, respectively. Adverse event was observed in 2 patients; peritonitis responding to antibiotics with EUS-GBD (n=1), abdominal pain with EUS-CDS (n=1).

**Conclusions** One-step EUS-CDS and GBD using a novel electrocautery-enhanced LAMS is feasible with high technical success rate and safety.

### OP363 DIAGNOSIS AND TREATMENT OF PANCREATIC DUCT DISRUPTION OR DISCONNECTION: AN INTERNATIONAL EXPERT SURVEY AND CASE VIGNETTE STUDY

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DOI 10.1055/s-0040-1704381

**Aims** A disrupted or disconnected pancreatic duct is an often overlooked and potentially severe complication of necrotizing pancreatitis. We aimed to evaluate current expert opinion regarding the diagnosis and treatment of pancreatic duct disruption and disconnection in patients with necrotizing pancreatitis to assist in developing future guidelines.

**Methods** An online survey consisting of 6 general questions and 3 case vignettes was sent to 124 international expert pancreatologists. Experts were selected based on publications on pancreatic duct disruption and disconnection in the last 5 years, participation in the development of IAP/APA and ESGE guidelines on acute pancreatitis or the Dutch Pancreatitis Expert Panel.

**Results** The response rate was 35%; 20 surgeons (47%), 19 gastroenterologists (44%) and 4 radiologists (9%) responded. Of the respondents, 38 (88%) had over 10 years of experience in treating patients with necrotizing pancreatitis. Seventeen respondents (40%) always evaluate pancreatic duct integrity in patients with necrotizing pancreatitis, 12 (28%) usually, 11 (25%) sometimes and 3 respondents (7%) never. Thirty-five respondents (81%) prefer evaluation of a disrupted or disconnected pancreatic duct by MRI/MRCP over other imaging modalities. Endoscopic transluminal drainage is the preferred intervention in patients with infected necrotizing pancreatitis and a disrupted duct (37 respondents, 86%) or disconnected duct (39 respondents, 91%). When drained endoscopically, 15 respondents (35%) would prefer plastic pigtailed, 21 (49%) lumen-apposing metal stents and 7 (16%) no preference. In patients with persistent percutaneous drain production and duct disruption, 15 respondents (35%) would perform EUS-guided drainage to internalize the external drain, 13 (30%) endoscopic transpapillary drainage and 3 respondents (7%) upfront surgery.

**Conclusions** This international survey demonstrated that MRI/MRCP is the preferred diagnostic modality and endoscopic transluminal drainage the preferred intervention for pancreatic duct disruption or disconnection. Consensus is

lacking regarding when to look for a disrupted duct and regarding the treatment of patients with persistent percutaneous drain production.

### OP364 ENDOSCOPIC-ULTRASOUND (EUS)-DIRECTED TRANSGASTRIC ERCP (EDGE) PROCEDURE FOR THE MANAGEMENT OF CHOLEDOCHOLITHIASIS FOLLOWING ROUX-EN-Y GASTRIC BYPASS

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DOI 10.1055/s-0040-1704382

**Aims** The obesity epidemic and resultant growth in bariatric surgery have led to a unique problem of managing pancreaticobiliary diseases in patients with altered anatomy, particularly after Roux-en-Y gastric bypass (RYGB). Various techniques including enteroscopy-assisted [1] and laparoscopy/laparotomy-assisted [2,3] endoscopic retrograde cholangiopancreatography (ERCP) have been developed to address this problem with varying success. More recently, a novel endoscopic-ultrasound (EUS)-directed transgastric ERCP (EDGE) procedure has been described<sup>4</sup>. Here we present what the authors believe are the first five EDGE procedures performed in the United Kingdom.

**Methods** A prospectively-collected database of EDGE procedures performed at a single centre from 1st October 2018 to 30<sup>th</sup> September 2019 was reviewed retrospectively. Procedures were performed by two experienced endoscopists trained in interventional EUS and ERCP. Recorded variables were technical success, adverse events, length of stay (LOS) and 30-day all-cause mortality.

**Results** All procedures were performed under general anaesthesia. Four patients had a single step procedure and one patient underwent a two-step procedure with gastro-gastrostomy formation followed by ERCP two weeks later. The median age was 70 years (range 60-79 years) and all patients were female. The indication in all patients was choledocholithiasis with severe cholangitis in two patients.

Technical success was achieved in 100% patients. The median LOS was 6.4 days (range 1-19 days). There were no procedure-related adverse events or deaths within 30 days. One patient had a 19-day admission due to pre-existing sepsis and multi-organ failure secondary to cholangitis. Another patient developed a pleural effusion due to heart failure which prolonged in-patient stay but subsequently recovered and was discharged home.

**Conclusions** The EDGE procedure is a novel approach to an increasingly common problem of performing ERCP in RYGB patients. To the authors knowledge this is the first case series of EDGE procedures performed in the UK.

### OP365 ENDOSCOPIC ULTRASOUND-DIRECTED TRANSGASTRIC ERCP (EDGE) IN PATIENTS WITH ROUX-EN-Y GASTRIC BYPASS (RYGB): TECHNIQUE AND RESULTS IN A EUROPEAN CASES SERIES

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DOI 10.1055/s-0040-1704383

**Aims** To describe technique, efficacy and safety of EDGE in RYGB.

**Methods** 14 consecutive patients [12 female; 56(±9.7)years] identified from prospective database underwent EDGE at tertiary Unit (6 choledocholithiasis; 3 cholangitis; 2 pancreatitis; 3 other). Definitions: Complete therapeutic cycle (CTC) = EUS-Directed Gastro-gastrostomy/gastro-jejunoscopy (EUS-GG/GJ) + transgastric ERCP + transmural stent removal; Index procedure = creation of EUS-GG; Single session procedure (SSP) = EUS-GG and ERCP under the same sedation. Technique, procedural issues and clinical outcomes were reviewed.

**Results** 14 EDGE anastomoses were 9 GG and 5 GJ. Bridging stents: 4 duodenal 20-mm PC-SEMS, 10 cautery-enabled 20-mm LAMS, without suture-

anchoring. SSP was tried in 12: 9 successful (75%), 2 dislodgements (managed endoscopically) and 1 ERCP aborted by friction. Eventually, papillary access was obtained in 16/19 ERCPs (13 patients): 9 successful SSPs; 4 dual-session procedures [mean (range) = 22 (4-34) days]; 3 for follow-up procedures (hemostasis/biliary stent revision), with technical success in 15/16 (94%). There were 2 other late intraprocedural stent dislodgements (1 in patient with prior SSP dislodgment/one resolved by transfistulous ERCP). Complications: 2 pain, 1 post-sphincterotomy bleeding (21% patients; 15% sessions; all mild). Transgastric stents were removed without complications after a median (IQR) of 30(7-65) days in 12 CTC patients, all resolved. Closure techniques were used in 50% (4 pigtails/2 OTSC), typically for dislodgement and/or early closure. A median (IQR) of 256(104-787) days post-removal of transgastric stents, the 12 CTC patients remain without recurrence or fistula. There are 2 patients with fistula kept with LAMS/pig-tail (one each) pending re-ERCP (1 access failed due to dislodgement during SSP; another successful access with incomplete ERCP).

**Conclusions** 20-mm metal stents (FC-SEMS or LAMS) allow single-session EDGE in most patients with RYGB. Suture-anchoring appears unnecessary. The small risk of dislodgement appears to be related to angulation. Dislodgement can usually be managed endoscopically.

### OP366 HEPATICO-JEJUNOSTOMY'S ANASTOMOTIC STRICTURE TREATED BY ENTERAL-ENTERAL ENDOSCOPIC BYPASS GUIDED ERC: A TERTIARY REFERRAL SINGLE CENTER EXPERIENCE

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DOI 10.1055/s-0040-1704384

**Aims** Since re-do surgery and interventional radiology are considered the first-line treatment for bilio-digestive anastomotic stricture, endoscopic treatment has been utilized as a minimally invasive alternative, with two critical issues: (1) ability to reach the biliary anastomosis; (2) perform an effective therapeutic procedure. We proposed a totally endoscopic approach to improve the endotherapy of bilio-digestive anastomotic stricture.

**Methods** From 01/2014 to 04/2019, 40 consecutive patients affected by bilio-digestive anastomotic stricture treated by endoscopic enteral-enteral bypass (EEEB) and subsequent endoscopic retrograde cholangiography (ERC) were included in the study.

**Results** Forty consecutive patients (mean age 62 yo; M/F 26/14) underwent EEEB which was successful in all but two patients because of a perforation secondary to LAMS migration and an intraprocedural bleeding (technical success rate 95%). When EEEB is successfully performed, the therapeutic ERC's rate was 100%, with the effective treatment of the anastomotic biliary stricture using large-bore fully covered metal stents (FC-SEMS). The most performed procedures were stone extraction and multiple metal stenting. During a mean follow-up of 2,5 years (3 mth- 5 y) we register a 100% clinical success (defined as resolution of presenting clinical problem) with a mean number of ERC sessions of 3. In two cases recurrent biliary stricture occurred, successfully re-treated through the EEEB (biliary strictures' recurrence rate 5,3 %). Complications have been divided in short- and long-term depending on the onset < 48 or >48 hours from the procedures. We have no long-term complications.

**Conclusions** EEEB-guided ERC is safe, feasible, and effective in referral centers with high-level experience in both ERCP and EUS. It lets the use of endoscopes with large operative channel to treat the stenosis(es) with large-bore self-expandable metal stents, to manage case of complex strictures and multiple-ducts biliary anastomosis, to guarantee a long-lasting gradual dilation and to re-treat patients in case of recurrence.

### OP367 TRANSJEJUNAL ERCP (TJ-ERCP) VIA EUS-GUIDED ENTERO-ANASTOMOSES (EUS-EA) IN ROUX-EN-Y-HEPATICOJEJUNOSTOMY (RYHJ): SHORT AND LONG-TERM OUTCOMES OF A VARIANT EUS-DIRECTED ERCP IN A CHALLENGING PATIENT POPULATION

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DOI 10.1055/s-0040-1704385

**Aims** EUS-directed transGastric ERCP (EDGE) is gaining acceptance in RY gastric bypass (RYGB). Short-term outcomes of similar LAMS-based EUS-directed ERCP have been reported in mixed non-RYGB altered anatomy patients. Endoscopic biliary drainage of RYHJ strictures +/- hepatolithiasis is challenging. An endoscopic approach to biliary drainage in RYHJ might improve outcomes and decrease patient discomfort.

**Aims:** To assess feasibility and clinical outcomes of TJ-ERCP via EUS-EA with LAMS in patients with RYHJ and failed standard biliary access.

**Methods** 44 Consecutive RYHJ patients [27(61.3%) male; mean (SD) age 60 (10.9) years] with biliary obstruction (BO) who underwent attempted EUS-EA with LAMS for biliary access between 2012-2019 were included from two Centers. We describe baseline demographics, procedure details and clinical outcomes. Short-term clinical success: BO resolution without relapses within 30 days. Long-term clinical success: removal of indwelling percutaneous biliary drainage catheters with no recurrences or unscheduled reinterventions within 365 days +/- stricture resolution/complete stone clearance.

**Results** Benign BO etiology in 37(84%). Median (IQR) time between surgical RYHJ and EUS-EA was 4.2(4.3) years. 35(79.5%) patients had previous biliary drainage attempts (endoscopy, PTBD and/or surgery) with a median (IQR) of 2.5 (1-5) failed/unsuccesful procedures. EUS-EA succeeded in 43/44(97.7%). 15mm LAMS was used in 41/43(95.3%). Type of EUS-EA: 13/43(30.2%) gastro-jejunos-tomy, 27/43(62.8%) duodeno-jejunos-tomy and 3/43 jejuno-jejunos-tomy. Single-session ERCP in 10/43 (23.2%). Median (IQR) time between EUS-EA and index TJ-ERCP was 7(2-7) days. There were 4/44(9%) adverse events (2 severe) and 2 LAMS dislodgements. Type of interventions: dilations, stent insertion/removal, lithotripsy, stone removal, cholangioscopy. Technically successful drainage was achieved in 42/43(97.3%) with short-term clinical success in 39/43(90.7%). Long-term success in 31/43(72%) after a median (IQR) of 2(2-3) TJ-ERCPs and a median (IQR) follow-up of 555(357-884) days.

**Conclusions** TJ-ERCP via EUS-EA with LAMS is feasible in most RYHJ patients despite prior failed biliary drainage. Long-term resolution is achieved in 70% and often requires iterative endoscopy.

### OP368V SEVERE HEMOBILIA DUE TO ARTERIO-BILIARY FISTULA. DIAGNOSIS AND TREATMENT BY ENDOSCOPIC ULTRASOUND

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DOI 10.1055/s-0040-1704386

75-year-old man with locally advanced cholangiocarcinoma. Uncovered self-expandable metal stent for biliary drainage was placed by ERCP. The patient was admitted to the hospital because of hematemesis. ERCP demonstrated direct visualization of oozing blood through the papilla. The patient presented

hemodynamic instability following balloon catheter removal. Fully covered self-expandable metal stent (10x60 mm) was delivered blindly. EUS revealed anomalous artery adjacent to the stent with active bleeding into the common bile duct. Embolization of the anomalous blood vessel was attempted using 22-gauge needle and five 0.0018-inch coils (Tornado Embolizations Coils). Bleeding cessation and hemodynamic stabilization were achieved after the procedure.

### OP369V THE LAMS-IN-LAMS RESCUE TECHNIQUE TO RESOLVE AN EXTREME BURIED STENT

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DOI 10.1055/s-0040-1704387

Four weeks after a complete resolution of a pancreatic collection, the proximal end of the LAMS (10x10-mm, HXS) was totally covered by gastric mucosa, and the buried stent was located 1-cm far from the gastric wall by fluoroscopy/EUS image. Rescue strategy: (I) ostomy repermeabilization by EUS-guided intervention (19-G needle, 6-Fr cystotome and 8-mm balloon); (II) placement of second coaxial LAMS (15x10-mm, HXS) plus a pigtail; (III) Four-weeks after, migration of the second LAMS and persistence of the pigtail maintaining the ostomy permeable. Ostomy tract dilation allowing a first endoscopic identification of the buried LAMS, and a successful extraction.

### OP370V EUS-GUIDED LEFT HEPATICO-DUODENOSTOMY (L-HDS): A NOVEL OPTION FOR EUS-GUIDED BILIARY DRAINAGE (EUS-BD) OF THE LEFT BILE-DUCT WHEN HEPATICOGASTROSTOMY (EUS-HGS) IS NOT FEASIBLE

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DOI 10.1055/s-0040-1704388

**Introduction:** We describe L-HDS as alternative to EUS-HGS in left biliary exclusion when transgastric access is precluded.

**Technique:** Metastatic gastric adenocarcinoma with hilar block and unilateral right-side SEMS by ERCP presenting with persistent jaundice because of left-side exclusion. Gross linitis precludes transgastric access for EUS-HGS. From the duodenum, the left intrahepatic duct is punctured for EUS-cholangiography and L-HDS performed with FC-SEMS. A second overlapping FC-SEMS is required to overcome foreshortening. Patient experienced 48-hour pain but cleared his jaundice.

**Conclusions** EUS-BD adapts to individual patient anatomy. L-HDS is more challenging than EUS-HGS but can still provide internal biliary drainage despite linitis.

Saturday, April 25, 2020

11:00 – 13:00

Esophageal therapy: No limits?!

Wicklow Meeting Room 3

### OP371 QUANTIFICATION OF LYMPHOVASCULAR INVASION IS USEFUL TO PREDICT LYMPH NODE METASTASES IN PATIENTS WITH SUBMUCOSAL (T1B) ESOPHAGEAL ADENOCARCINOMA

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DOI 10.1055/s-0040-1704389

**Aims** Lymphovascular invasion (LVI) is an important prognostic factor for lymph node metastases (LNM) in patients with submucosal esophageal adenocarcinoma (T1b EAC). Currently, LVI is classified as present or absent. The aim of this study was to determine whether quantification of LVI provides additional prognostic information in patients with pT1b EAC.

**Methods** Patients diagnosed with pT1b EAC between 1989-2017 and treated with surgery or endoscopic resection, were included in this nationwide multi-center retrospective cohort study. Primary endpoints were the presence of LNM in surgically resected specimens ( $\geq 12$  resected lymph nodes), or the development of pathologically confirmed metastases during follow-up. All resection specimens were reassessed by three gastrointestinal pathologists. Patients were categorized into 3 groups based on the number of LVI foci: no-LVI, low-LVI (1 LVI focus), and high-LVI ( $\geq 2$  LVI foci). Cox proportional hazards analysis was performed to identify risk factors for metastases.

**Results** The cohort consisted of 283 patients with pT1b EAC. Median age was 66 years (IQR: 58-72), 87% was male. LVI was distributed as follows: no-LVI (n=222; 78.4%), low-LVI (n=19; 6.7%), high-LVI (n=42; 14.8%). 93 (32.9%) patients had LNM or distant metastases. The rate of metastases was higher in patients with high-LVI (78.6%), compared to patients with low-LVI (42.1%;  $p < 0.01$ ) or no-LVI (23.4%;  $p < 0.01$ ). The rate of metastases was not higher in patients with low-LVI (42.1%) compared to no-LVI (23.4%;  $p = 0.07$ ). Corrected for invasion depth and differentiation grade, the Hazard Ratios (HRs) for low-LVI and high-LVI were 1.9 (95% CI 0.9-4.1) and 3.5 (95% CI 2.2-5.6), respectively. When using LVI as a binary variable; HR was 3.0 (95% CI 1.9-4.5).

**Conclusions** Patients with  $\geq 2$  LVI foci have an increased risk of developing metastases, compared to patients with only 1 LVI focus. Quantification of LVI is useful to identify pT1b EAC patients who have a high risk of developing metastases.

## OP372 ORGAN PRESERVATION AFTER ENDOSCOPIC RESECTION OF AN EARLY ESOPHAGEAL CANCER WITH A HIGH RISK OF LYMPH NODE METASTASES

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DOI 10.1055/s-0040-1704390

**Aims** Esophagectomy is recommended after endoscopic resection of a T1 esophageal cancer in case of deep mural invasion or poor histoprognostic factors. However, this surgery is highly morbid, and no advanced residual neoplasia is found in up to 87% of resection specimens. We aimed to assess the outcomes of patients with an endoscopically resected T1 esophageal cancer considered at high risk of lymph node metastases that were managed non-operatively.

**Methods** We conducted a retrospective study in two centers between 2010 and 2019, including patients with a histologically complete endoscopic resection of a T1 esophageal cancer and: poorly differentiated cancer, lymphovascular invasion, m3 histology for squamous cell carcinoma (SCC) and submucosal invasion >500um for adenocarcinomas (ADC). Patients had declined or were unfit for esophageal resection.

**Results** 41 patients, among which 36 SCC and 5 ADC, with a median (IQR) age of 65 (47 - 85) were included. Criteria for inclusion were: poor differentiation (n=10), lymphovascular invasion (n=11), deep mural invasion (n= 33). 13 (32%) patients were followed up, 20 (49%) were treated by chemoradiotherapy (CRT) and 8 (20%) by radiotherapy (RT). Recurrence free survival was 98%: 100% (13/ 13) in the surveillance group and 96% (27/28) in the (C)RT group, with a median (IQR) follow-up of 12 (5 - 43) and 28 (3 - 71) months, respectively. Overall survival was 83%: 92% in the surveillance group and 79% in the (C)RT group. The only recurrence was a local recurrence, treated by rescue surgery, without late recurrence. Grade 3 or 4 toxicities occurred in 10% of patients of the (C)RT group and included radiation esophagitis and hematologic toxicity. No treatment related death was observed.

**Conclusions** Our data suggest that close follow-up could be an acceptable option after complete endoscopic resection of a T1 esophageal cancer currently considered at high risk of lymph node metastases.

## OP373 ENDOSCOPIC FOLLOW-UP OF HIGH-RISK ADENOCARCINOMA ARISING FROM BARRETT'S ESOPHAGUS (BE), RESULTS OF 120 PATIENTS FROM THE DUTCH BARRETT EXPERT CENTER COHORT

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**Aims** After radical endoscopic resection(ER) of esophageal adenocarcinoma (EAC) in BE with high-risk(HR) features, optimal management is unclear. This concerns three groups: HR-T1a-EAC (poorly(G3)/undifferentiated(G4) cancer a/o lymphovascular invasion(LV+)); low-risk(LR) T1b-EAC (submucosal invasion < 500um, no G3/G4, no LV); HR-T1b EAC (invasion>500um, G3/G4, a/o LV+). Endoscopic follow-up(FU) to detect lymph node metastases(N+) at a curable stage is considered in selected cases, however, optimal FU strategy is unclear. Aim was to evaluate outcomes of endoscopic FU in all patients treated by radical ER for HR-T1a or T1b-EAC.

**Methods** Endoscopic therapy for BE-neoplasia in the Netherlands is centralized in 9 expert centers with specifically trained endoscopists and pathologists. In an ongoing registry, treatment/FU data of all patients treated endoscopically for BE-neoplasia in the Netherlands, is collected in a dedicated database. We identified all patients who underwent radical ER for HR-T1a or T1b-EAC, followed by endoscopic FU with gastroduodenoscopy(GDS) ± endoscopic ultrasound(EUS). Outcome parameters were N+, distant metastases(M+) and tumor-related-death(TRD).

**Results** From Jan-2008 to Oct-2019, 120 patients (median 74years) underwent radical ER of HR-T1a(n=27), LR-T1b (n=55) or HR-T1b EAC(n=38) and endoscopic FU (median 29months(IQR 15-48), with 5/2 GDS/EUS). Nine patients were diagnosed with N+ (n=4;3%) and/or M+ (n=5;4%) after median 27mo FU(23-38), diagnosed by EUS-FNA (n=5), or CT performed for symptoms (n=4). N+/M+ was found in 22% of HR-T1a, 2% LR-T1b and 5% HR-T1b patients. The 4 patients with N+-disease were treated with curative intent; 1 was cured, 1 is still treated, 2 died of complications. Overall, TRD was 6%(n=7) (2/7 from treatment complications). Non-EAC related mortality was 8,3%.

**Conclusions** We found an unexpected high risk of N+ associated with HR-T1a EAC. Treatment with curative intent was still an option in almost half of patients with N+, and TRD was lower than non-TRD. Thus, in selected patients, endoscopic FU may be justified. The optimal strategy is yet to be established.

## OP374 INDIVIDUAL RISK CALCULATOR TO PREDICT LYMPH NODE METASTASES IN PATIENTS WITH SUBMUCOSAL (T1B) ESOPHAGEAL ADENOCARCINOMA: MULTICENTER COHORT STUDY

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DOI 10.1055/s-0040-1704392

**Aims** A prognostic model may help to identify patients at risk for lymph node metastases (LNM) in order to stratify between a conservative approach or additional surgery, after endoscopic resection of pT1b esophageal adenocarcinoma (EAC). The aim of this study was to develop a prediction model for the risk LNM or distant metastases in patients with pT1b EAC.

**Methods** This is a nationwide, retrospective, multicenter cohort study in collaboration with the Netherlands Cancer Registry. All patients who were diagnosed with pT1b EAC and treated with endoscopic resection and/or surgery between 1989 and 2017 were included. Primary endpoints: the presence of LNM in surgically resected specimens ( $\geq 12$  resected lymph nodes) or the development of pathologically confirmed LNM or distant metastases during follow-up. Histopathological reassessment of all resection specimens was performed by three gastrointestinal pathologists. Cox proportional hazard analysis was performed to identify independent risk factors associated with metastases. The discriminative ability of this model was assessed using the c-statistic.

**Results** 283 patients were included (median age 66 years [IQR: 58-72], 87% male). Endoscopic resection was performed in 100 patients and surgery in 183 patients. Ninety-three (32.9%) patients had metastases, LNM mainly identified in surgical specimens (78/93). In multivariable analysis, the risk of developing metastases increased with worse differentiation grade (G2 vs G1: HR 3.2, 95% CI 1.2-9.0; G3 vs G1: HR 3.1; 95% CI 1.1-8.9), deep submucosal invasion (Sm3: HR 2.4; 95% CI 1.3-4.5) and lymphovascular invasion (HR 3.0; 95% CI 1.9-4.5). The c-statistic of the prediction model was 0.74 (95% CI 0.68-0.79).

**Conclusions** One-third of patients with pT1b EAC had metastases. Risk factors are moderate and poor differentiation grade, deep submucosal invasion and the presence of lymphovascular invasion. A personalized risk for LNM can be predicted based on the presence or absence of each of these separate risk factors with a c-statistic of 0.74.

### OP375 RECURRENCE FOLLOWING COMPLETE ERADICATION OF INTESTINAL METAPLASIA OF BARRETT'S ESOPHAGUS AFTER ENDOSCOPIC THERAPY IN A SPANISH REFERRAL CENTER

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**Aims** Endoscopic Therapy of Barrett's esophagus (BE) with Radiofrequency Ablation (RFA) and Endoscopic Mucosal Resection (EMR) is effective to achieve complete eradication of intestinal metaplasia (CEIM). Long-term rate of CEIM is not establish longer than 5 years so surveillance in these patients is unclear. Studies report a 20% recurrence rate of Intestinal Metaplasia (IM) after 2-3 years of CEIM. There are not cases published with Dysplasia or cancer after 4 years of CEIM.

We assessed the rates for disease recurrence of Low Grade Dysplasia (LGD), High Grade Dysplasia (HGD) or Intramucosal cancer (IMC) after CEIM in patients with BE treated with RFA and/or EMR, the time of the recurrence and the therapy used.

**Methods** We performed a retrospective cohort study of 118 patients with BE and LGD, HGD or IMC treated with RFA and/or EMR that achieve CEIM between 2007 and 2017 and underwent subsequent endoscopic surveillance at a single center. Rates of disease recurrence and progression were determined and also the therapy used and its efficacy.

**Results** Seven patients (6% of those with CEIM) had a recurrent disease with LGD in 5, HGD in 1 and IMC in 1 after a median of 29 months (interquartile ranges (IR) 12'5-58'0 months). RFA was performed in 4, EMR in 2 (in 1 EMR was used twice) and RFA and EMR in 1 patient. CEIM was achieved in 6 and 1 patient died for other reason.

**Conclusions** There is BE recurrence of Dysplasia in patients that achieved CEIM after more than 4 years of surveillance. Endoscopic treatment is feasible if reappears. Endoscopic follow up in these cases should continue because late recurrence can occur after years.

### OP376 SUPERFICIAL ADENOCARCINOMA OF THE ESOPHAGOGASTRIC JUNCTION (AEGJ): OUTCOMES OF ESD IN A WESTERN COHORT

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DOI 10.1055/s-0040-1704394

**Aims** The aim was to analyze the feasibility, outcomes and safety of ESD for the management of superficial AEGJ in a large cohort of patients.

**Methods** This is an observational and retrospective study. All consecutive patients presenting with AEGJ tumours who underwent ESD between 2006 and 2019 were included. The following main outcomes were comparatively evaluated: en-bloc, complete (R0), and curative (< sm2, G1-2, LV0) resection rates, and local recurrence. Secondary outcomes were perforation and delayed bleeding.

**Results** Eighty-eight tumours in 84 patients were included and classified as HGD (7.9%), well or moderately differentiated carcinoma (60.2%), poorly or undifferentiated carcinoma (31.8%). En bloc resection and R0 rates were 96.6% and 68.2% respectively (R0 for vertical margins 77.9%). Curative resection rate was 48.9% due to LV invasion in 13pts and G3 foci in 9 pt. Local recurrence rates after curative resection was 4.5% at a mean follow-up of 23.7 months [IC 9-36]. Adverse events including perforation, delayed bleeding, and esophageal stricture were 1.7%, 0% and 27.9%, respectively. No perforation required surgery.

**Conclusions** ESD for superficial AEGJ showed a high en bloc resection with an acceptable safety profile. The curative resection was however much lower due to unforeseen LV invasion and poorly differentiated areas even in mucosal and submucosal cancer. Recurrence rates remains low after curative resection. Safety profile was acceptable with no serious adverse events.

### OP377 LONG-TERM OUTCOME OF SALVAGE ENDOSCOPIC RESECTION AFTER DEFINITIVE CHEMORADIOTHERAPY FOR OESOPHAGEAL CANCER: A WESTERN EXPERIENCE

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DOI 10.1055/s-0040-1704395

**Aims** Definitive chemoradiotherapy (dCRT) is increasingly used as non-surgical treatment for oesophageal cancer. Local failure after dCRT at the primary site is common and remains a major challenge. In Japanese series, salvage endoscopic resection (ER) has emerged as promising treatment modality for superficial residual/recurrent lesions after dCRT. Comparable data from outside Japan are scarce. The primary aim was to evaluate the safety and long-term efficacy of salvage ER in a Western case series.

**Methods** Gastroenterologists from endoscopic centres in Europe were invited to check their institutional databases for salvage endoscopic submucosal dissection (ESD) or endoscopic mucosal resection (EMR) cases following dCRT. Participating gastroenterologists completed an anonymized database, including patient's demographics and clinicopathological variables. All patients were followed up for recurrent locoregional or distant disease after salvage ER.

**Results** Nine endoscopic centres in 6 European countries submitted information on 22 patients (16 males, 6 females), with a median age of 72 years (IQR:69-76). A total of 27 salvage ER procedures were performed, of which 20 (74%) were ESD and 7 (26%) EMR. The majority of patients had squamous cell carcinoma (64%) of the middle or distal oesophagus (72%), clinically staged as cT2-3 (64%) or cN+ (50%) prior to dCRT. Median time from end of dCRT to ER was 19 months (IQR:5-45). En-bloc resection rate was 100% for ESD and 57% for EMR. During a median of 32 months (IQR:13-64) follow-up after salvage ER, 55% developed a recurrence (9 locoregional, 3 distant). The 5-year recurrence-free survival, overall survival and disease-specific survival rates were 34%, 67% and 82%, respectively. No major complications, such as bleeding or perforation were reported. Only 2 patients developed a stricture during follow-up.

**Conclusions** In carefully selected patients with local residual or recurrent disease after dCRT, salvage ER seems to be a safe and effective non-surgical treatment option with favourable long-term disease-specific survival.

### OP379 CLINICAL OUTCOMES OF PATIENTS WITH ENDOSCOPIC SUBMUCOSAL DISSECTION OF EGC WITH UNDIFFERENTIATED TYPE HISTOLOGY

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DOI 10.1055/s-0040-1704396

**Aims** Clinical efficacy of endoscopic resection of early gastric cancer (EGC) with undifferentiated type histology are still under controversy. We aimed in this study to evaluate the clinical outcomes of endoscopic submucosal dissection (ESD) of EGC with undifferentiated type histology.

**Methods** We enrolled patients with EGC with undifferentiated type histology who underwent endoscopic submucosal dissection (ESD) at tertiary medical center. The clinical outcomes including curative resection rates and recurrence rates were retrospectively extracted and analyzed.

**Results** From 2007 to 2016, 75 EGCs with undifferentiated-type histology from 75 patients were identified. Mean age was 60.6 ±11.5 years and male were 46 (61.3%). Tumor location was most frequent at antrum (35/75, 46.7%), followed by corpus (20/75, 26.7%), angle (14/75, 18.7%) and high body and cardia (6/75, 8.0%). Mean tumor size was 18.2 ±7.8mm, and 17 (22.6%) showed submucosal invasion. Curative resection was estimated in 44 patients (58.7%). Among patients with non-curative resection, 6 patients (19.4%) underwent additional ESD, 8 (25.8%) additional surgery, and 17 (54.8%) was followed-up without additional treatment. After excluding 17 patients of

follow-up loss more than 12month and additional surgery, recurrence was found in 2 patients (3.4%) during 55 (1-125) months (metachronous 1, distant metastasis 1). All the patients of recurrent cases were corresponding to non-curative resection and only observation was conducted.

**Conclusions** Due to lower curative resection rate, ESD for EGC with undifferentiated-type histology should be cautiously selected. In case of non-curative resection, additional treatment such as re-do ESD or surgery should be considered due to risk of recurrence.

### OP380 GASTRIC CANCER OCCURS AT 3-YEARS ENDOSCOPIC SURVEILLANCE IN LOW RISK ATROPHIC GASTRITIS PATIENTS

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DOI 10.1055/s-0040-1704397

**Aims** Atrophic gastritis (AG) or intestinal metaplasia (IM) are at risk for development of pre- and neoplastic lesions. MAPS II guidelines recommend for patients with advanced stage of AG/IM, surveillance with high quality endoscopy every 3 years.

This study aimed to assess the occurrence of pre- and neoplastic lesions in AG patients at 3-years follow-up.

**Methods** Prospective study (2011-2019) on consecutive patients with histological diagnosis of AG/IM who performed follow-up at 3 years interval (±6 months) were included. Exclusion criteria were: follow-up and/or polypectomy/intervention < 3 years. Gastroscopy was first evaluated in high resolution white light endoscopy and then by Narrow Band Imaging (NBI). Histological examination was performed according to Updated Sydney System with neoplastic risk stratification by OLGA/OLGIM (operative link on gastric atrophy/metaplasia) scores.

**Results** Overall 128 patients (73% female, median age 63 yrs (31-83)) were included. Median follow-up was 36 (30-42) months. At baseline, endoscopically visible elevated lesions were observed and removed in 10 (7.8%) patients: low grade dysplasia (LGD) adenoma in 1 patient (0.8%), type-1 gastric carcinoid (T1-GC) in 3 (2.3%) patients and hyperplastic polyps in 6 (4.7%) patients.

At 3-years follow-up, 16 (12.5%) patients presented 16 (12.5%) lesions, 14 endoscopically visible and 2 intramucosal. Endoscopically visible lesions were 3 (2.3%) GC, 3 (2.3%) T1-GC, 1 (0.8%) LGD adenoma and 7 (5.5%) hyperplastic polyps. Intramucosal lesions were 2 (1.6%) LGD. GC was diagnosed at 31/36/32 months after previous upper endoscopy and the 3 patients with GC neither presented advanced stages of OLGA/OLGIM scores nor first-degree familiarity for GC nor H. pylori infection. They are alive and they were treated by endoscopic (1 patient) and surgical treatment (2 patients).

**Conclusions** The 3-years endoscopic surveillance seems satisfactory to timely detect gastric neoplastic lesions. However, 2 patients needed a surgical treatment. Likely, current criteria for early detection of neoplastic lesions should be better addressed.

### OP381 ESTIMATING THE GLOBAL PREVALENCE OF BARRETT'S ESOPHAGUS: A SYSTEMATIC REVIEW OF PUBLISHED STUDIES

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DOI 10.1055/s-0040-1704398

**Aims** Determining the prevalence of Barrett's esophagus (BE) is of paramount importance for defining screening strategies and health-services resource

utilization. However, precise estimates of prevalence are not clear with existing published data reporting a wide range of prevalence. We aimed to synthesize the available data, determine BE prevalence and assess variability according to definition (namely to the most recent guidelines), geographical region, time period and methodology.

**Methods** Three databases (PubMed, Scopus and Web of Knowledge) were searched for manuscripts addressing the prevalence of BE. Subgroup, sensitivity and meta-regression analysis were conducted to explore heterogeneity. Pooled prevalence was computed using random-effect model.

**Results** Of 3510 studies from the initial search, 110 were included (63 in general population, 2 in asymptomatic population, 22 in gastro-esophageal reflux disease, 10 in other symptoms and 13 in specific populations) in the final analysis. The prevalence of BE varied depending on the population and definition used. In GERD, the pooled prevalence of BE with IM was 7.46%[CI95%:5.79;8.13]. In general population, the pooled prevalence of BE with intestinal metaplasia (IM) was 0.87%[CI95%:0.75-0.99]; BE > 1 cm was [0.82(CI95%:0.61;1.02) vs BE of any length was 2.81(CI95%:1.81;3.82)]. The pooled prevalence significantly increased to 4.86%[CI95%:2.70;7.02] when considering any columnar epithelium and to 7.04% [CI95%:6.35;7.74] when considering endoscopic suspicion of BE irrespective of length. Even though the high heterogeneity and high risk for biases, there was a gradient East-West, North-South and a time-trend in BE prevalence with differences in the estimation of BE prevalence after and before Prague classification [after:0.65(CI95%:0.54;0.77) vs before:2.38(CI95%:1.96;2.79)]. The study design did not influence estimations. Studies assessing population's cohort/sample had lower BE prevalence than studies assessing patients undergoing endoscopy.

**Conclusions** There is a need to reassess true estimates of the prevalence of BE using the current guidelines in most regions. Of this, diverse attitudes will depend from educational activities to screening programmes.

### OP382V PER-ORAL ENDOSCOPIC TUNNELING FOR RESTORATION OF THE ESOPHAGUS (POETRE) IN THE MANAGEMENT OF A 45MM COMPLETE ESOPHAGEAL OBSTRUCTION

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DOI 10.1055/s-0040-1704399

A 54-year-old man submitted to chemoradioterapy presented with aphagia due to a long complete post-radioterapy esophageal obstruction(CEO). Simultaneous-dual-endoscope procedure(one *via* the mouth and another simultaneously inserted through the PEG-tube-tract) was performed. Retrograde submucosal tunneling was started distal to the obstruction, and the fibrotic tissue was carefully dissected under endoscopic and fluoroscopic guidance. Once the two endoscopes were in close proximity, fibrotic tissue was incised, restoring esophageal continuity, and a stent was placed, maintaining a new esophageal lumen.

POETRE was described in 2014, being limited to a few case reports. Our case supports this technique for the management of long CEO.

## ESGE Days 2020 ePoster Podium presentations

Upper GI: Resection techniques 1

09:30–10:00

Thursday, April 23, 2020

ePoster Podium 1

### ePP1V DEEP SUBMUCOSAL BIOPSY ASSISTED BY ENDOSCOPIC SUBMUCOSAL DISSECTION FOR THE DIAGNOSIS OF AN INFILTRATIVE GASTRIC CANCER: A CASE-REPORT

**Autors** Garcia JS<sup>1</sup>, de Frutos Rosa D<sup>1</sup>, Castillo BA<sup>1</sup>, Ruiz MGH<sup>1</sup>, de Tejada Echanojauregui AH<sup>1</sup>

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DOI 10.1055/s-0040-1704400

A 57-year-old woman was admitted because of vomits and weight loss. Gastroscopy revealed thickened gastric folds and poor distension on insufflation. CT-scan and EUS showed no additional abnormalities. Two repeat sets of biopsies, sampling by unroofing technique and EUS-FNA were inconclusive. The patient was proposed for deep submucosal biopsies assisted by ESD tunneling technique aiming a histological diagnosis to guide treatment. A mucosal incision was made in the proximal body. Submucosal dissection was continued until an extremely fibrotic area was reached. Biopsies taken with a standard biopsy forceps showed poorly differentiated carcinoma. The patient underwent total gastrectomy confirming this diagnosis.

### ePP2V ESD FOR REMOVAL OF EARLY CANCER OF THE PHARYNX

**Autors** Shishin K<sup>1</sup>, Nedoluzhko I<sup>1</sup>, Chernikova E<sup>1</sup>, Kanishev I<sup>1</sup>, Shumkina L<sup>1</sup>, Kurushkina N<sup>1</sup>

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DOI 10.1055/s-0040-1704401

A 68 year old patient came to our hospital to perform EGDS as planned. According to EGDS on the back wall of the oropharynx epithelial neoplasm is determined by the size of 1 cm in diameter. Biopsy performed.

Histological conclusion: squamous cell neoplasm with high grade dysplasia.

This tumor was removed by the ESD method.

According to the final histological examination - squamous cell carcinoma. The edges of the resection are outside the tumor.

The patient was discharged after 3 days.

### ePP3V ENDOSCOPIC FULL-THICKNESS RESECTION OF EARLY DUODENAL CANCER

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DOI 10.1055/s-0040-1704402

We present the case of 45-year-old male with early duodenal cancer. Physical and laboratory examinations (including colonoscopy) were unremarkable. The patient underwent endoscopic full-thickness resection of the lesion with the FTRD (full-thickness resection device; Ovesco Endoscopy, Tubingen, Germany) by using a 1-step clip-and-snare technique. Histology confirmed complete (R0) full-thickness resection. There were no complications in postoperative period.

The patient was discharged on the third day after surgery.

### ePP4V TARGETING THE BULLSEYE! ENDOSCOPIC MANAGEMENT OF A COMPLEX POST-SURGICAL AMPULLECTOMY STENOSIS

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DOI 10.1055/s-0040-1704403

**Aims** A 60-years-old woman presented 5 episodes of acute pancreatitis a few months after having undergone laparoscopic ampullectomy of a large peri-ampullary adenoma. We demonstrate the endoscopic management of an anastomotic stricture and the effect of secretin administration for spotting the non-visible pancreatico-digestive orifice. During ERCP the orifice was not identified, but soon after secretin injection a punctiform orifice appeared. However, serial cannulation attempts using an ultra-thin sphincterotome and a dilator failed. Pancreatic duct cannulation was only possible with a 6Fr cystotome and pure current application. The stenosis was dilated using a CRE-balloon and a plastic stent was left in place.

### ePP5 ENDOSCOPIC MULTIPLE STENTING FOR THE TREATMENT OF ENTERAL LEAKS NEAR THE BILIO-PANCREATIC ORIFICE: AN EXPERIENCE FROM A SINGLE CENTER

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DOI 10.1055/s-0040-1704404

**Aims** To evaluate the clinical outcome of a new endoscopic procedure for complex enteral leaks involving the bilio-pancreatic orifice, inducing the healing through the isolation of the leak and the diversion of all the secretions (biliary and pancreatic).

**Methods** A fully covered SEMS was placed to seal the leak. Subsequently bile and pancreatic juice were drained away from the leak, inside the lumen of the enteral metal stent, by placing biliary and pancreatic stents through the meshes of the enteral stent.

**Results** Between April 2013 and June 2019, 16 consecutive patients (11 M/5 F) treated with this multiple stenting technique were included. In 9 patient with normal upper gastrointestinal anatomy, the leaks involved the second portion of the duodenum near the biliopancreatic orifice (2 Roux-en-Y reconstruction after duodenal diverticulization, 7 surgical primary repair after surgical/endoscopic duodenal perforation), in 7 patient, after Whipple-Child pancreaticoduodenectomy the leaks involved the bilio and/or pancreatico-jejunal anastomosis with perianastomotic jejunal necrosis. A re-do surgery and/or a percutaneous drainage placement were attempted firstly in all the patients. Technical success was 100%, clinical success (healing of the leak) was 94%. The leak healed in 15 patients, one patient died few days after the procedure because of septic shock and massive dehiscence of the duodenum. Stents removal was scheduled 6 weeks after the procedure. An abdominal CT scan was always performed before stents removal to confirm the complete healing of the fistula and the absence of any perilesional residual fluid collection. Two cases of spontaneous migration of the enteral stent were reported, in two patients that missed the scheduled removal appointment, causing small bowel

obstruction treated surgically with enterotomy and removal of the stent complexes.

**Conclusions** Endoscopic biliary-pancreatic-enteral fluids' compartmentalization to treat complex enteral leaks is an effective, safe and minimally invasive endoscopic procedure for post-surgical duodenal/jejunal leaks in tertiary referral endoscopic centers.

### ePP6 IS ENDOBILIARY STENTING A CULPRIT FOR TUMOR RECURRENCE IN AMPULLARY CARCINOMA?

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DOI 10.1055/s-0040-1704405

**Aims** The aim of this study was to evaluate relationship between endoscopic retrograde biliary drainage (ERBD) and recurrence in patients who underwent R0 resection of ampullary carcinoma.

**Methods** Among patients diagnosed as ampullary carcinoma between Jan 2000 and May 2019 at Yeungnam university hospital, the patients who received R0 resection and diagnosed as stage 1 and 2 were included. Ampullary carcinoma with R1 resection or stage above 3 were excluded. Clinical characteristics, performance of endoscopic retrograde cholangiopancreatography and ERBD and recurrence were analyzed retrospectively. Patients were divided into ERBD group and non-ERBD group.

**Results** Of 57 patients, a total of 32 patients (56.1%) underwent ERBD before surgery. Mean age was not significantly different between ERBD and non-ERBD group (p=0.545). Male and female ratio was not significantly different between two groups. No statistical difference between proportion of stage 1 and 2 ampullary carcinoma was observed between two groups (p=0.933). Level of total bilirubin was significantly higher in ERBD group than non-ERBD group (p<0.001). Recurrence occurred in 15 patients (26.3%) after R0 resection of ampullary carcinoma. Recurrence rate was significantly higher in patients who received ERBD at the time of diagnosis of ampullary carcinoma after R0 resection than patients who did not received ERBD (37.5% vs 12.0%, p=0.037).

**Conclusions** Even in ampullary carcinoma with stage 1 and 2, postoperative recurrence seems to occur more frequently in patients who underwent ERBD before surgery. Further studies are needed to evaluate relationship between endobiliary stenting and recurrence in ampullary carcinoma.

### ePP7 BENEFITS OF THE ENDOSCOPIC ULTRASOUND-GUIDED FINE-NEEDLE ASPIRATION (EUS-FNA) FOR THE EVALUATION OF HYPERMETABOLIC MEDIASTINAL LYMPHADENOPATHY DETECTED BY PET-CT WITH 18F-FDG (PET) (APOGEE STUDY)

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DOI 10.1055/s-0040-1704406

**Aims** During cancer management, the high sensitivity (Se) (95-100%) of PET-CT With 18F-FDG can lead to the demonstration of hypermetabolic mediastinal adenopathies. Its lower specificity (Sp) (89%) can require histological examination. We report the results of a prospective, single-center study evaluating the diagnostic performance of EUS-FNA in this indication.

**Methods** Prospective single-center study featuring patients in whom PET had revealed hypermetabolic mediastinal lymphadenopathy requiring diagnostic certainty. All EUS-FNA were performed with a 19-gauge needle (EchoTip, Cook Endoscopy).

**Main objective:** to evaluate the diagnostic performance in terms of Se and Sp of EUS-FNA in the characterization of hypermetabolic mediastinal adenopathies in PET in the context of a new cancer or relapse.

**Secondary objectives:** To evaluate the negative predictive value (NPV) of the EUS-FNA, to evaluate the percentage of surgical diagnostic procedures avoided. The standard technique was a thoraco-abdominopelvic CT scan at 6 months and at 12 months.

**Results** 52 patients were eligible and evaluable for the primary endpoint. The most common primary cancers were mammary (17.3%) and bronchial (13.5%). The lymph nodes were analyzed as malignant in 44.2% of cases, benign in 50% of cases and atypical or suspicious in 3.8% of cases; the results were unclear in 2% of cases. The malignant lymph nodes were metastatic for breast cancer in 21.7% of cases, bronchial cancer in 17.4% of cases, colorectal cancer in 17.4% of cases and prostate cancer in 13% of cases. The Se of the EUS-FNA, was 92% (95% CI 0.74-0.99) and the Sp 100%. NPV was 87% (95% CI: 0.59-0.98). A diagnostic surgical procedure was necessary in 2% of the cases.

**Conclusions** In a context of cancer management, hypermetabolic mediastinal adenopathies in PET are often described. When a confirmed diagnosis is required, the diagnostic accuracy of the minimally invasive procedure of EUS-FNA, is sufficiently robust to avoid a surgical diagnosis technique.

### ePP8 EUS-GUIDED FINE NEEDLE BIOPSY SAMPLING IN LYMPH NODE ENLARGEMENT - A PROSPECTIVE, COMPARATIVE STUDY

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**DOI** 10.1055/s-0040-1704407

**Aims** The diagnostics of enlarged lymph nodes deep in the abdomen or the mediastinum is challenging. EUS-guided fine-needle biopsy sampling (EUS-FNB) may have diagnostic advantages compared with EUS-FNA but studies on the topic are few.

**Methods** In a tertiary single-center, prospective setting 2012-2018, all patients with enlarged lymph nodes of unclear etiology referred for EUS were eligible for inclusion and sampled with EUS-FNA (25 gauge), EUS-FNB (22 gauge Procure), or with dual techniques (EUS-FNA/B). Outcome measures were the diagnostic sensitivity, specificity, overall accuracy, and the adverse event rate. Surgical specimens were used as reference standard if available.

**Results** In total, 123 EUS-guided sampling procedures (FNA: n=74; FNB: n=9; FNA/B: n=40) were performed in 84 study subjects (median age: 67; f/m: 38/46). Lesions were located in the mediastinum (n=37) or the abdomen (n=47) with a median lesion size: 3.0 cm. The final diagnosis was metastasis n=27; lymphoma n=11; sarcoidosis n= 6; inflammatory node n=40. All procedures counted, the outcome measures were according to ► **Table 1**.

Lesion size, lesion position or the number of needle passes did not impact the diagnostic yield. In dual sampling FNA/B-procedures, EUS-FNA and EUS-FNB was comparable (sensitivity: 74% vs 74%, p=1.0; specificity: 71% vs 65%, p=1.0;

overall accuracy: 78% vs 73%, p=0.77;). In the lymphoma subgroup (n=9), there was a non-significant superior sensitivity of EUS-FNB compared to EUS-FNA (78% vs 44%, p=ns). The adverse event rate was nil (0/122, 0 %).

**Conclusions** 25 gauge EUS-FNA and 22 gauge EUS-FNB are safe and comparable techniques in the diagnosis of enlarged lymph nodes. However, EUS-FNB may be superior in cases suspected for lymphoma. Additional, large volume studies are needed to confirm the findings.

### ePP9 COMBINED EUS-ELASTOGRAPHY (EUS-E) AND CONTRAST-ENHANCED HARMONIC EUS (CH-EUS) IMPROVES DIFFERENTIAL DIAGNOSIS BETWEEN BENIGN AND MALIGNANT LYMPH NODES - A PROSPECTIVE STUDY

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**DOI** 10.1055/s-0040-1704408

**Aims** To evaluate the diagnostic performance of contrast-enhanced EUS(CH-EUS) and elastography(EUS-E) combination in the differential diagnosis(DD) between benign and malignant lymph nodes(LN).

**Methods** Consecutive patients with suspected LNs were prospectively enrolled from 2018. EU-ME2 processor(Olympus) elastography and CH-EUS(MI 0.22) with SonoVue(Bracco) were used. Final diagnosis was obtained with pathology (EUS-tissue acquisition or surgical specimen) or based on clinical follow-up(6-month). Age, gender, LN size, location, shape, echotexture, presence of visible vascular hilum. EUS-E, CH-EUS and their combination(both positive, both negative and at least one positive for malignancy) were evaluated.

**Results** 110 LNs(76 abdominal, 34 mediastinal) in 84 patients(46 male; age 64.8±13.1) were evaluated; of these, 32(29.1%) were benign, 78(70.9%) malignant (65 solid tumor metastasis; 13 lymphoma). No difference was observed in terms of size. B-mode criteria for malignancy were present in 56(50.9%), a visible vascular hilum was identified in 20(18.2%) cases. 54 cases were EUS-E criteria positive, 27 negative and 29 non-diagnostic; 57 cases were CH-EUS criteria positive, 32 negative and 21 non-diagnostic. Vascular hilum identification showed high specificity (97.4%) for benign LNs. ► **Table 1** shows EUS-E and CH-EUS diagnostic performance. The concordance of the two techniques(both positive) had 100% specificity for malignancy, despite low sensitivity, while when both techniques were negative, specificity for benign LNs was 98.7%. An optimal sensitivity(93.6%) was observed when at least one technique(EUS-elastography "OR" CH-EUS) was suggestive for malignancy.

► **Tab. 1** Diagnostic performance of EUS-E, CH-EUS and their combination for the DD of suspected LNs

► <b>Tab. 1</b>			
Sampling modality	Sensitivity (%)	Specificity (%)	Overall accuracy (%)
EUS-FNA (n=114)	77	78	77
EUS-FNB (n=49)	79	67	76

	EUS-E	CH-EUS	Both EUS-E "AND" CH-EUS positive for malignancy	EUS-E "OR" CH-EUS positive for malignancy
Sensitivity	69.2%	67.9%	43.6%	93.6%
Specificity	100%	87.5%	100%	87.5%
AUC	0.846	0.777	0.718	0.905

**Conclusions** The combination of elastography and CH-EUS increases the diagnostic yield in LN characterization (benign vs malignant). Indeed, the concordance of the two techniques improves specificity (up to 100%), while the presence of at least one positive result leads to optimal specificity (up to 95%).

Thursday, April 23, 2020

09:30 – 10:00

Management of fistulas and foreign bodies ePoster Podium 4

### ePP10V NOVEL ENDOSCOPIC MANAGEMENT OF A CHRONIC GASTRO-GASTRIC FISTULA USING A CARDIAC SEPTAL DEFECT OCCLUDER

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DOI 10.1055/s-0040-1704409

Closure of gastro-gastric (GG) fistulas after Roux-en-Y gastric bypass (RYGB) it's a challenge. A 51-year-old woman, status-post RYGB in 2008, presented with a six-month history of weight regain and reflux. She had regained weight to 84kg when she was found to have a GG fistula. She underwent successful Cardiac septal defect occluders (CSDO) placement, and 3-months later, had lost 10kg with improvement in her reflux. Repeat evaluation confirmed successful closure without contrast leak. This is the first report of use of a CSDO for closure of a GG fistula. The use of CSDO was technically feasible and appeared to be effective and safe.

### ePP11V AN EDUCATIONAL VIDEO DEMONSTRATING PRACTICAL USE OF THE ESGE FOREIGN BODY GUIDELINES

**Authors** Kabir M<sup>1,2</sup>, Ravindran S<sup>1,2,3</sup>, Dhillon A<sup>1</sup>, Sukha A<sup>1</sup>, Thomas-Gibson S<sup>1,2,3</sup>

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DOI 10.1055/s-0040-1704410

**Aims** Development of an educational video for endoscopy trainees to improve knowledge of foreign body guidelines.

**Methods** An instructional video was created based on the European Society of Gastrointestinal Endoscopy (ESGE) guidelines for removal of foreign bodies (FB) in the upper GI tract [1]. Creative input was sought from a range of endoscopists.

**Results** This video highlights the indications for FB removal, demonstration of assembly and use of protective devices and retrieval devices.

**Conclusions** Knowledge of FB guidelines is important to all endoscopists. This instructional video provides insights into an area of endoscopy that is not commonly taught.

### ePP12V CLOSURE OF DUODENAL FISTULA IN 10 DAYS WITH ENDOSCOPIC VACUUM THERAPY (EVT)

**Authors** Galetti F<sup>1</sup>, Matsubayashi CO<sup>1</sup>, Madruga-Neto AC<sup>1</sup>, Resende RH<sup>1</sup>, de Moura DTH<sup>1</sup>, Tahmasebi R<sup>2</sup>, de Medeiros FS<sup>3</sup>, Matuguma SE<sup>1</sup>, dos Santos MEL<sup>1</sup>, de Moura EGH<sup>1</sup>

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DOI 10.1055/s-0040-1704411

**Aims** Endoscopic management of a duodenal fistula using EVT.

**Methods** EVT was performed.

**Results** 81-year-old female underwent laparoscopic left hemicolectomy for colon neoplasm. After 2 days she underwent duodeno-jejunal segmental resection with duodeno-jejunal anastomosis for generalized peritonitis. 25 days later the endoscopy showed a transmural defect. EVT was performed. Ten days later a significant decrease in the size of the defect was observed, without extravasation of the contrast in fluoroscopy resulted in the closure of the duodenal fistula.

**Conclusion** EVT is a recent therapy in the management of GI transmural defects that can be used as a first line therapy.

Thursday, April 23, 2020

09:30 – 10:00

Advanced ampullectomy

ePoster Podium 5

### ePP13 LONG-TERM OUTCOMES OF ENDOSCOPIC PAPILLECTOMY FOR EARLY-STAGE CANCER IN DUODENAL AMPULLARY ADENOMA: COMPARISON WITH SURGICAL TREATMENT

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DOI 10.1055/s-0040-1704412

**Aims** Recently, the evidence has been accumulating that the endoscopic resection may be curative in treating ampullary tumor with high grade intraepithelial neoplasia. However, there are only small cases series of endoscopic management of early ampullary cancer, and radical surgery is still considered the only accepted treatment modality. The aim of this study is to evaluate the long-term outcomes of patients diagnosed with early ampullary adenocarcinoma treated with endoscopic management.

**Methods** This is a retrospective study in a single tertiary medical center in Korea. Electronic medical records of 715 patients who underwent EP between 2004 and 2016 were reviewed. Patients who diagnosed with early adenocarcinoma (Tis, T1a by AJCC 8<sup>th</sup> edition) with follow-up data more than 2 years were included. Their demographics, histopathologic data and clinical outcomes were analyzed.

**Results** A total of 70 patients were included for EP alone group (n=42, M:F 21:21, mean age 61.9±12.0 years) and the subsequent surgery group (n=28, M:F 19:9, mean age 62.3±9.1 years). There was no significant difference in demographics between groups. There were no significant differences in mean tumor size (2.1 ±0.6cm vs 2.0±0.5cm, P=0.220), histologic grade (P=0.077), tumor extent (P=1.000), lymphovascular invasion (2.4% vs 10.7%, P=0.344) and complete resection rate (50.0% vs 25.0%, P=0.065). EP alone group received more additional ablative treatment than subsequent surgery group (42.9% vs 14.3%, P=0.024). The 5-year disease-free survival rate and 5-year cancer-free survival rate were not significantly different in both groups (79.1% vs 87.4%, P=0.111 and 93.5% vs 87.4%, P=0.726).

**Conclusions** EP followed by endoscopic surveillance showed comparable long-term outcomes to the surgical resection for early duodenal ampullary cancer. It can be considered as an alternative option to surgery in patients with high operative risks.

### ePP14 CAN WE AMELIORATE THE SAFETY OF INTRADUCTAL RADIOFREQUENCY ABLATION FOR PERSISTENT DYSPLASIA AFTER ENDOSCOPIC AMPULLECTOMY?

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DOI 10.1055/s-0040-1704413

**Aims** After endoscopic ampullectomy, intraductal adenoma may persist. Intraductal radiofrequency ablation (ID-RFA) is a potential alternative to avoid surgery. In a previous trial, acute pancreatitis and biliary stenosis were noted in 15% of cases, respectively. Systematic pancreatic and biliary stenting could potentially prevent these complications. This retrospective study aimed to evaluate the safety profile of ID-RFA when associated with prophylactic stenting.

**Methods** All patients treated in Mermoz Hospital from December 2015 to October 2019 for intraductal recurrence of adenoma after endoscopic ampullectomy were prospectively included in a database. For biliary ID-RFA, systematic plastic pancreatic stenting before irradiation and systematic biliary stenting with fully-covered self-expandable metal stents (FCSEMS) were performed. For pancreatic ID-RFA, systematic plastic pancreatic stenting was performed.

**Results** Fifteen patients were included (mean age of 74 years (62-89), 11 males). There were 13 endobiliary adenomas (11 low-grade dysplasia (LGD), 2 high-grade dysplasia (HGD)), 2 intrapancreatic LGD). 23 sessions (21 biliary, 2 pancreatic) were performed with ELRA system (settings: 30-240 seconds; 7-10W; maximum heat 80°). Pancreatic and biliary stents were inserted as per protocol. There were no immediate complications but one transient conduction heart block. Four patients developed a late common bile duct stenosis (19%) of which 2 were successfully calibrated by FCSEMS and 2 are currently under ongoing endoscopic treatment. Seven patients (47%) had no recurrence (mean follow-up 12 months (1-24), 86% after one session). One was operated without remaining biliary adenoma, 4 are under ongoing treatment (LGD, mean follow-up 27 months (11-36)), 3 had unrelated severe diseases (one death, 2 pancreatic tail adenocarcinoma).

**Conclusions** In this trial no major adverse events were noted after ID-RFA of adenomatous remnant post endoscopic ampullectomy. Systematic pancreatic stenting prevented acute pancreatitis (0%) but biliary stenting did not modify the risk of common biliary strictures (19%). No patients developed ductal malignancy during follow-up.

### ePP15 CLINICAL OUTCOMES AFTER ENDOSCOPIC RESECTION OF AMPULLARY ADENOMAS AND LATERALLY SPREADING AMPULLARY LESIONS: A SINGLE-CENTRE RETROSPECTIVE COHORT STUDY

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DOI 10.1055/s-0040-1704414

**Aims** Endoscopic ampullectomy is a relatively high-risk procedure, increasingly performed for adenomatous lesions of the major duodenal papilla. We aimed to determine the procedural outcomes and recurrence rates after endoscopic resection of ampullary adenomas, including both adenomas confined to the ampulla (ACA) and laterally-spreading ampullary lesions (LSALs).

**Methods** Patients who underwent endoscopic resection of an ampullary adenomatous lesion (April 2014-March 2019) were retrospectively reviewed. LSALs were defined as lesions extending  $\geq 10$ mm beyond the ampullary mound. A single experienced endoscopist (KDP) performed all procedures.

**Results** We included 26 patients (16 Females, 66.6±17.4 years), of whom 20 had ACA and 6 had an LSAL. The median lesion sizes were 17.6mm, 13.9mm and 30mm, respectively (p=0.002). The en-bloc resection rate was 90% (18/20) in ACAs, whereas all LSALs were resected piecemeal. A small (< 1cm) intraductal adenoma extension was noted in 2 LSALs, snare resected following exposure using an extractor balloon. Six lesions (23.1%) contained foci of high-grade dysplasia (ACA: 10%; LSAL: 66.6%; p= 0.01). Acute pancreatitis occurred in 4 (15.4%) patients (one severe), showing no significant difference between ACAs and LSALs, and between patients undergoing pancreatic duct stenting (n=18) and those who did not. No clinically significant post-procedural bleeding or perforation were noted. The median follow up duration for the entire cohort was 11.5 months. Adenoma recurrence was observed in 8 (30.8%) patients at a median of 11 months after the index procedure (ACA: 20%; LSAL:

66.6%, p=0.05). Lesions resected piecemeal were significantly more likely to recur compared to those resected en-bloc (75% vs 11.1%, p=0.03). All recurrences were managed endoscopically.

**Conclusions** Endoscopic ampullectomy is effective and can be safely performed in patients with ACAs and LSALs. Early recognition of these lesions, allowing for en-bloc resection, appears to be the main determinant of successful adenoma eradication.

### Upper GI: Resection techniques 2

Thursday, April 23, 2020

09:30 – 10:00

ePoster Podium 6

### ePP16 POST ENDOSCOPIC SUBMUCOSAL DISSECTION (ESD) STRICTURES - IS RISK RELATED TO PATHOLOGY? A EUROPEAN COMPARISON OF BARRETT'S VERSUS SQUAMOUS NEOPLASIA

**Authors** Arndtz S<sup>1</sup>, Subramaniam S<sup>1</sup>, Alkandari A<sup>1</sup>, Hossain E<sup>1</sup>, Abdelrahim M<sup>1</sup>, Galtieri PA<sup>2</sup>, Pellegatta G<sup>2</sup>, Seewald S<sup>3</sup>, Maselli R<sup>2</sup>, Repici A<sup>2</sup>, Bhandari P<sup>1</sup>

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DOI 10.1055/s-0040-1704415

**Aims** ESD is a minimally invasive therapeutic option for early oesophageal neoplasia, however is not without risk. In Europe, the complication profile is most established for Barrett's neoplasia, being the predominant pathology, and stricture risk has been shown to be related to lesion circumference. Our aim was to compare the safety of ESD between Barrett's and squamous neoplasia in a Western population.

**Methods** This was a retrospective analysis of all oesophageal ESDs performed within 3 tertiary referral centres in Europe. The primary outcome was post procedure stricture rate.

**Results** 226 oesophageal ESDs from 201 patients were included, consisting of 167 Barrett's and 59 squamous neoplasia. Average age was 70.7 in Barrett's and 68.5 in squamous neoplasia, with lesion size 34.6mm and 34.2mm and en bloc resection rate 96.6 and 94.6% respectively. The complication rate was 3/167 perforations or delayed bleeds and 7/167 strictures in Barrett's, with 1/58 perforations or delayed bleeds in squamous and 15/58 strictures in Barrett's (1 patient lost to follow up). Circumferential lesion involvement did increase stricture risk, but did not account for the difference between the two groups (table 1).

**Conclusions** ESD remains a low risk therapeutic option for early oesophageal neoplasia, however the stricture risk is higher in squamous neoplasia, irrespective of circumferential lesion involvement. We would suggest counselling patients with squamous neoplasia for a higher risk of stricture and having a lower threshold for steroid injection or prophylactic dilatation in these patients.

► **Tab. 1** Stricture Risk Stratified by Circumferential Lesion Involvement

Lesion circumference %	Strictures in Barrett's ESD (n, %)	Strictures in Squamous ESD (n, %)	p-value
≤1/3	0/98 (0.0%)	3/23 (13.0%)	<0.001
>1/3-2/3	1/56 (1.8%)	6/26 (23.1%)	0.001
>2/3	6/13 (46.2%)	6/9 (66.7%)	0.354

## ePP17 COMPARATIVE STUDY OF ESD AND SURGICAL RESECTION FOR GASTRIC SETS ORIGINATED FROM MUSCULARIS PROPRIA

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DOI 10.1055/s-0040-1704416

**Aims** The aims of this study were to compare endoscopic submucosal dissection (ESD) with surgical resection for the removal of GSET-PM.

**Methods** This study involved 17 patients with GSET-PM removed by ESD and 76 patients who underwent curative surgical resection. ESD was attempted in GSET-PM with well marginated tumors which was below 5cm and showed an endoluminal growth pattern according to endoscopic ultrasound (EUS) finding.

**Results** ESD group were more likely to have upper portion (10/17, 58.8%) and surgery group were more likely to have mid portion (41/76, 53.8%) ( $p=0.039$ ). ESD group were smaller median tumor size (25.6 mm vs 35.9 mm,  $p=0.037$ ) and higher endoluminal ratio (58.5±9.1 % vs 45.8±15.4 %,  $p=0.002$ ). ESD group were mostly to have Yamada type III (10/17, 58.8%) and surgery group were mostly Yamada type I (52/76, 68.4%) ( $p<0.001$ ). Complete resection by ESD was lower than by surgical resection (82.4% vs 100%,  $p<0.001$ ). In ESD group, 3 performed surgical resection after ESD (1 incompletely resection and 2 uncontrolled bleeding) and 1 showed perforation was completely resected with endoscopic closure. In surgery group, complications occurred in 6 patients (1 leakage, 1 stricture, 1 hernia and bowel obstruction, 1 wound infection and 2 worsened general condition after surgery). Although surgery group were lower in complication rate than ESD group ( $p=0.006$ ), severity of complications were higher in the surgery group and there were no mortalities in the ESD group compared with 2 in the surgery group. There was no statistical difference of recurrence and the follow-up period between two group.

**Conclusions** ESD can be one of good options for the resection of endoluminal GSET-PM and could be replace treatment by surgical resection in Yamada type III with a high endoluminal ratio.

## ePP18 ENDOSCOPIC RESECTION OF UPPER GASTROINTESTINAL SUBMUCOSAL TUMOURS: ESD, STER AND EFTR

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DOI 10.1055/s-0040-1704417

**Aims** Upper gastrointestinal submucosal tumours (U-SMTs) are infrequent but may contain malignant potential. Some may require removal for treatment and on occasion definitive diagnosis may necessitate complete excision. A range of techniques have been developed to facilitate endoscopic removal and avoid surgical resection, even for lesions involving the muscularis propria (MP). This includes endoscopic submucosal dissection (ESD), submucosal-tunnelling endoscopic resection (STER) and endoscopic full-thickness resection (EFTR).

**Methods** We conducted a prospective observational study over 84 months until October 2019 (NCT-02306707). Procedure technique was guided by pre-resection endoscopic appearance, cross-sectional imaging and predicted MP involvement based on EUS. For each lesion, all resection techniques were available. Oesophageal lesions were planned for STER and gastric lesions for ESD or EFTR with endoscopic suture closure. Lesions >30mm were consented for possible laparoscopic gastrotomy for specimen retrieval by the surgical team.

**Results** 59 endoscopic resections for U-SMTs were performed (mean age 61 ±12, 57.6% male). Procedures included ESD (n=47), STER (n=7) and EFTR (n=5). Mean lesion size was 22±14mm. Pathology included leiomyoma (29.3%),

neuroendocrine tumours (27.6%) and GISTs (12.1%). Median length of stay was 1 day (IQR 1-2). There were no adverse events.

Technical success for ESD was 87.2%. En-bloc resection was achieved in 97.6%. Involvement of the MP was identified in seven cases (14.9%). Six were deemed non-resectable intra-procedurally and were referred to surgery, with five located in the stomach ( $p=0.15$ ). Two lesions resected by EFTR, of 40-50mm size, required laparoscopic gastrotomy for retrieval

**Conclusions** U-SMTs can be effectively treated with endoscopic resection. As extent of MP involvement may not be reliably appreciated by EUS, switch between endoscopic resection approaches should be considered intra-procedurally if required. Planned resection for lesions >30mm should involve a surgical team for consideration of laparoscopic gastrotomy to retrieve the specimen, as this still allows for organ preservation

Thursday, April 23, 2020

09:30 – 10:00

ESD 1

ePoster Podium 7

## ePP19 ENDOSCOPIC SUBMUCOSAL DISSECTION VERSUS LOCAL LAPAROSCOPIC SURGICAL RESECTION (TRANSANAL MINIMALLY INVASIVE SURGERY [TAMIS] TRANSANAL ENDOSCOPIC OPERATION [TEO]) IN EARLY RECTAL NEOPLASIAS (DSETAMIS-2018 STUDY). PRELIMINARY RESULTS

**Authors** de Frutos D<sup>1,2</sup>, Santiago J<sup>2,3</sup>, Albéniz E<sup>4</sup>, Rosón P<sup>5</sup>, Marín JC<sup>6</sup>, Nogales Ó<sup>7</sup>, Ramos F<sup>8</sup>, Barquero D<sup>9</sup>, Terán A<sup>10</sup>, de Tejada AH<sup>2,3</sup> DSETAMIS-2018. Endoscopic Resection Group of the Spanish Society of Gastrointestinal Endoscopy (GR-SEED)

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DOI 10.1055/s-0040-1704418

**Aims** Endoscopic Submucosa Dissection (ESD) and laparoscopic surgical resection techniques (Transanal minimally invasive surgery (TAMIS) and Transanal endoscopic operation (TEO)) have demonstrated high rates of curative resection in Early Rectal Neoplasias (ERN), although no randomized studies comparing both strategies have been published. We present the preliminary results of the DSETAMIS-2018 study.

To compare ESD and TAMIS/TEO (T/T) in recurrence rate (3-6-12 months), en-bloc & R0 resection rate, time of procedure and safety.

**Methods** Prospective multicentric randomized no-inferiority clinical trial. Consecutive patients with non-pedunculated ERN >20 mm, between 3-14 cm from the external anal verge, involving less than 50% of the rectum circumference and without signs of deep invasion were eligible. The estimated sample size is 34 cases per study group for a non-inferiority limit of 10%, power of 80% (beta 0.2) and alpha error 0.05. This study is registered in clinicaltrials.gov (NCT03959839).

**Results** From April 2019 20 patients fulfilled the inclusion criteria and were invited to. Seven patients were finally randomized (4 ESD, 3 T/T), whereas 13

► **Tab. 1** Preliminary results

	ESD	TAMIS/TEO	p Value
En-bloc (%)	100	66.7	0.42
R0 (%)	100	33.3	0.18
Lesion size, mm Media (SD)	53.5 (9.2)	36.3 (8.1)	0.16
Time per procedure, min Media (SD)	69.5 (2.1)	51.7 (28.4)	0.39

patients declined and choose the endoscopic treatment (ESD). The preliminary results of the randomized patients are shown in ► **Table 1**.

**Conclusions** This is one of the first randomized clinical trials comparing ESD with surgical endoscopic treatment in ERN. Recruitment is limited by patient's preference towards ESD and restrictive inclusion criteria due to technical limitations of surgical procedures. Preliminary results show a remarkable en-bloc and R0 resection in ESD group.

*NOTE: These results may be updated in final presentation if this abstract is accepted*

## ePP20 LEARNING CURVE FOR ENDOSCOPIC SUBMUCOSAL DISSECTION OF RECTAL TUMORS IN A WESTERN CENTER - A SINGLE-OPERATOR LEARNING CURVE ANALYSIS

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DOI 10.1055/s-0040-1704419

**Aims** Colorectal endoscopic submucosal dissection (ESD) is widely implemented in many Asian countries as standard treatment of early colorectal neoplasms. However, ESD experience is still limited to a handful of centers outside Asia, leading to few reports describing the learning curve in this setting. We aimed to evaluate the learning curve of rectal ESD in a western center.

**Methods** Included 154 consecutive rectal ESD performed by a single endoscopist between January 2013 and October 2019. *En bloc* and R0 resection rate, resection speed, rate of snare-assisted ESD and complications were recorded prospectively and compared between five chronologically study periods (1<sup>st</sup> to 4<sup>th</sup> with 30 cases each and the 5<sup>th</sup> with 34 cases) in order to determine the learning curve.

**Results** *En bloc* resection rate increased sharply after the first period before reaching plateau (75,0% vs 96,7% vs 96,6% vs 100% vs 100%; significant p-value between the 1<sup>st</sup> and 2<sup>nd</sup> groups (p=0.023)). R0 rate improved during the study (64,3% vs 70,0% vs 75,9% vs 86,7% vs 87,1%, p=0.148). ESD resection speed increased over time (median, mm<sup>2</sup>/min: 7,1 vs 13,7 vs 21,4 vs 33,2 vs 40,5, significant p-value between 1<sup>st</sup> and 2<sup>nd</sup> groups, 2<sup>nd</sup> and 3<sup>rd</sup> groups and 3<sup>rd</sup> and 4<sup>th</sup> group (p=0,002, p=0,018, p=0,044, respectively)). Rate of snare-assisted ESD decreased gradually (17,9% vs 10,0% vs 3,4% vs 0% vs 0%). After an initial increase, there was a non-significant decrease on complication rate (10% vs 16,7% vs 16,7% vs 6,7% vs 3,2%).

**Conclusions** Based on our analysis, approximately 30 procedures must be carried out to significantly increase *en bloc* resection rate and approximately 90 procedures are necessary to achieve R0 resection rate >75%. Resection speed increased progressively over time, particularly during the first 120 lesions. Our study shows that rectal ESD can be implemented in western countries

achieving a high rate of *en bloc* and R0 resections with an acceptable incidence of complications.

## ePP21V ESD USING A DOUBLE BALLOON ENDOLUMENAL INTERVENTIONAL PLATFORM FOR STABILIZATION COMBINING WITH RUBBER BAND CLIP TRACTION

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DOI 10.1055/s-0040-1704420

ESD using a gastroscope for better maneuverability in proximal colon using a double balloon EIP combining with rubber band technique has been described by Jacques J., Pioche M. et al (Endoscopy 2019).

Herein we present a case of a NG LST in transverse colon, in a "tough" colon with poor stability of the scope due to constant looping removed *en bloc* by ESD using this technique.

A colonoscope was inserted using a Dilumen (Lumendi Ltd.) to help stabilization, balloons were inflated and the colon was shortened. The colonoscope was exchanged for a gastroscope and *En-Bloc* ESD was performed successfully.

**Polyp forensics: Colon advanced imaging 1**

**09:30 – 10:00**

**Thursday, April 23, 2020**

**ePoster Podium 8**

## ePP22 VALIDATION OF AN ONLINE LEARNING TOOL FOR OPTICAL DIAGNOSIS OF DIMINUTIVE COLORECTAL POLYPS

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DOI 10.1055/s-0040-1704421

**Aims** 1) To assess the efficacy of an online self-learning tool for OD of diminutive colorectal polyps; 2) To describe in detail the learning process and possible variables related to learning efficacy.

**Methods** Online web page-based tool divided in five sections: 1) pre-tutorial test; 2) OD tutorial (NICE and WASP classifications); 3) First post-tutorial test; 4) Second post-tutorial test (different images); 5) Test with videos. The OD learning tool is prepared to gather information of each student individually as they pass through every phase. For each phase, number of right answers, percentage of high confidence diagnosis and number of attempts to pass the test were collected. Each phase was passed when there were at least 90% correct answers. A multicenter study was designed to assess the performance of the OD tool on endoscopists of different experiences and background.

**Results** 36 endoscopists from 7 different Spanish centers entered the study [23 (63,9%) endoscopists; 5 (13,9%) gastroenterologists; 8 (22,2%) fellows].

► **Tab. 1** Overall results of the learning process through the online tool

	Pre-tutorial test	Post-tutorial test	1st pass of the 2nd post-tutorial test	1st pass of the video test
Correct answers, mean (range)	19.0 (13.0-25.0)	24.0 (23.0-25.0)	25.8 (20.0-30.0)	24.6 (18.0-29.0)
High-confidence diagnosis, % (range)	67.5 (32.0-92.0)	87.3 (64.0-100)	78.7 (53.0-100)	75.2 (37.0-97.0)
Students passed at 1st attempt, n (%)	-	24 (66.7)	18 (50.0)	6 (16.7)
Students needing 3 attempts to pass		2 (5.6)	1 (2.8)	7 (19.4)

Mean difference on correct answers between pre- and post-tutorial tests was 5 (0-10), and mean difference on the percentage of high-confidence diagnosis was 19.7 (-8 - 56).

Previous endoscopic experience had no influence on the efficacy of learning.

**Conclusions** 1) Our web-based online tool is efficient for OD learning of diminutive colorectal polyps; 2) A drop in the diagnostic efficacy occurs when moving from evaluating still pictures to videos. Therefore any learning tool has to include a video phase; 3) Efficacy results are homogeneous not depending on previous endoscopic experience.

### ePP23 THE OPTIMIZATION OF BRACHYTHERAPY BASED ON THE DATA OF BIOSPECTROFOTOMETRY

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DOI 10.1055/s-0040-1704422

**Aims** Brachytherapy is a valuable element of the complex treatment of rectal cancer. But before brachytherapy it is necessary to have exact information about pathology focus, its size, healthy tissues and the area of the tumor and its boundaries.

For better identification of the irradiated area, it is proposed to use optical methods of diagnostic, for example, biospectrophotometry (endogenous fluorescence). To optimize the determination of the boundaries of the invisible by endoscopical search tumor in the submucosa of the rectum using the method of endogenous fluorescence.

**Methods** 40 patients with rectal cancer were performed rectoscopy with biospectrophotometry by the laser endoscopic spectrometer LESA-01. We measured proximal and distal boundaries of the tumor at first by visual control and after that by using LESA-01.

**Results** During the study, we identified that tomograms and spectrograms more exactly show the borders of colorectal cancer than visual characteristics, have different characteristics than images of the normal mucosa. So, this

method can optimize individual plan of equaldose distribution while brachytherapy for increasing the efficiency of intracavitary radiotherapy.

**Conclusions** Usage of intracavitary biospectrofotometry methods helps to determine the true border of the neoplastic process in the rectum, and to optimize the process of creating an individual plan of brachytherapy in order to increase the efficiency of intracavitary radiotherapy.

Upper GI: Management of complications 1

11:00 – 11:30

Thursday, April 23, 2020

ePoster Podium 1

### ePP25V ENDOSCOPIC INTERNAL DRAINAGE (EID) OF SUTURE-LINE DEHISCENCE POST-LAPAROSCOPIC GASTRIC SLEEVE (LGS): SIMPLER THAN ENDOSCOPIC VACUUM THERAPY (EVT) AND MORE EFFECTIVE THAN INTRALUMINAL COVERED SEMS

**Authors** Tejada JT<sup>1</sup>, Nuñez RN<sup>1</sup>, Valenzuela EF<sup>1</sup>, De Benito Sanz M<sup>1</sup>, Hernández RSO<sup>1</sup>, Pérez-Miranda M<sup>1</sup>

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DOI 10.1055/s-0040-1704423

**Introduction** EVT improves outcomes over SEMS for endotherapy of postoperative leaks but requires repeated procedures. We show simplified EID using transmural double-pig-tail stents.

**Description** Acute post-LSG leak shown on abdominal CT. Endotherapy included EID and 35-mm balloon dilatation of antral stricture. Guidewire was passed at EGD into perigastric collection through suture-line defect. Following wire-guided balloon dilation: abscessoscopy, saline irrigation and placement of two 7F-pigtail stents. 12-weeks later, pig-tail-stents were removed and resolution was confirmed at EGD.

**Conclusions** An acute infradiaphragmatic post-LSG leak was effectively managed by EID with two double pig-tail stents requiring just two EGD with minimal patient discomfort.

### ePP26V ENTRY-AND-EXIT DOUBLE PIG-TAIL DRAINAGE AS SALVAGE OF INEFFECTIVE PRIMARY CLOSURE AND STANDARD DRAINAGE IN BOERHAAVE SYNDROME

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DOI 10.1055/s-0040-1704424

**Introduction** Primary closure and drainage are management principles of Boerhaave Syndrome (BS). We present a combination of double pig-tail drainage and intraluminal lumen-apposing-metal-stent (LAMS) in a BS patient.

**Case presentation** Male with BS, at EGD esophageal tear is seen at the GE junction. A week later EUS-guided mediastinal drainage is performed, and two weeks later, a dual approach is performed at EGD by combining entry-and-exit double pigtail drainage with LAMS placement across the GE junction. The patient started oral feeding the following day.

**Conclusions** Failed primary endoscopic closure and standard EUS-guided pig-tail drainage were salvaged with pig-tail drainage combined with intraluminal LAMS.

## ePP27V UNUSUAL ENDOSCOPIC-LAPAROSCOPIC MANAGEMENT OF BURIED BUMPER SYNDROME AS COMPLICATION AFTER PERCUTANEOUS ENDOSCOPIC GASTROSTOMY PLACEMENT

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DOI 10.1055/s-0040-1704425

A 67 years-old male with PEG was admitted for buried-bumper-syndrome (BBS).

PEG tube was removed. We unsuccessfully tried to insert guidewire through the original tract of the fistula, either from abdominal wall towards gastric cavity or from gastric cavity towards abdominal orifice. Introducing a pediatric gastroscope through the cutaneous fistula into peritoneal cavity, we recovered with a forceps the guidewire placed into peritoneal cavity through the gastric orifice of the fistula, thus restoring the fistula via. After hydro-pneumatic dilation of the fistula, a new tube was replaced.

Early BBS diagnosis and appropriate expertise can allow conservative resolution of this complication.

**Biliary stones: Diagnosis and clearance**  
Thursday, April 23, 2020

11:00 – 11:30  
ePoster Podium 2

## ePP28 RISK OF CHOLEDOCHOLITHIASIS IN PATIENTS WITH HIGH PRE-PROCEDURE PROBABILITY FOR CBD STONES AND IMPROVING BILIRUBIN LEVELS

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DOI 10.1055/s-0040-1704426

**Aims** American Society for Gastrointestinal Endoscopy guidelines are commonly used to identify patients with high risk for choledocholithiasis. Presence of bilirubin >4 mg/dl, bilirubin >1.8 and dilated common bile duct (CBD) and/or clinical cholangitis are considered high risk criteria that predict the need for interventional ERCP. However, no time frame is mentioned in guidelines, and high-risk patients often have improvement in bilirubin levels before the ERCP. Our aim was to evaluate the risk of choledocholithiasis in patients with suspected CBD stones and bilirubin >4 mg/dl, with decline in bilirubin levels below 4 mg/dl prior the ERCP.

**Methods** In a single center retrospective study we investigated the records of hospitalized patients that had ERCP or EUS for presumed choledocholithiasis between 6.2018- 6.2010 and had bilirubin >4 mg/dl prior the examination. All patients had abdominal imaging before the endoscopy. Patients with active malignancy, external biliary drainage or PSC were excluded. Choledocholithiasis risk was assessed in a cohort of patients with bilirubin that declined below 4 mg/dl compared to those with bilirubin remaining above 4 mg/dl prior the endoscopic procedure.

**Results** Out of 717 patients screened, 291 met the inclusion criteria. Choledocholithiasis was found in 65/102 (63%) patients with decline in bilirubin below 4 mg/dl, compared to 144/189 (76%) patients with bilirubin that remained above 4 mg/dl (p=0.02). In patients with elevated bilirubin as an only high-risk criteria for CBD stones, choledocholithiasis was found in only 9/34 (26%) of those with bilirubin decrease below 4 mg/dl, compared to 33/52 (63%) of those with bilirubin >4 mg/dl before the ERCP (p=0.0008).

**Conclusions** Decrease in bilirubin below 4 mg/dl is associated with lower risk for choledocholithiasis in patients presenting with increased bilirubin levels, and is especially pronounced for those with bilirubin > 4mg/dl as an only high-risk criterion. EUS or MRCP should be considered before ERCP in those patients.

## ePP29 KEY FACTORS LEADING TO INCOMPLETE BILIARY STONES CLEARANCE DURING THEIR FIRST ERCP IN PATIENTS WITH NAÏVE PAPILLA

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DOI 10.1055/s-0040-1704427

**Aims** ERCP is currently the standard of care for the management of bile duct stones. The clearance of bile duct stones has improved with techniques as endoscopic papillary large balloon dilation (PLBD) or the novel intraductal therapies based on peroral cholangioscopy (POC), but reports about large stones clearance scarce.

**Methods** Prospective enrolment of 397 consecutive patients with suspicion of intraductal biliary stones in two University Hospitals. Analysis of the factors influencing the bile duct stones' clearance failure during the first ERCP in naïve papilla patients. Primary outcome: complete ductal clearance (CC) on first attempt. Secondary outcome: CC according to demography, and to patient and technical features.

**Results** 397 consecutive, papilla-naïve patients elected for ERCP (56.4% female; 68.2% >69 years; 55.5% ASA-II-III). Global CC: 87.4%; incomplete removal: 5.0%; clearance failure: 7.5%. Univariate model: age, gender, ASA, indication or endoscopist experience did not reach significant differences (p< 0.05). Altered anatomy (p< 0.03), post-ERCP pancreatitis (p< 0.03), intraprocedural incidents (p=0.0005), anticoagulant disorders (p< 0.03) or drugs (p< 0.01), non-routine techniques (pre-cut, PLBD mechanic lithotricia, or POC (p< 0.0001) lead to CC failure. Multiple stones was a statistical significant factor for failed retrieval (p< 0.005). Only 67.5% of stones sized 19 mm or more were removed, as compare to a 93.7% CC in small stones (p< 0.0001). Multivariate analysis showed only significance for stone size, with an area under de curve ROC=0.637.

### Conclusions

1. In our cohort, the main cause of failed CC of biliary stones was a stone size larger than 18 mm.
2. Other features that may influence were: > 3 choledocholithiasis, intraprocedural incidents, anticoagulants and modified anatomy.
3. The most frequent use of LBDP and the implementation of electrohydraulic or intraductal lithotripsy might help to improve the complete clearance rate, during the first ERCP, especially in patients with larger stones.

**Pancreatic cysts**  
Thursday, April 23, 2020

11:00 – 11:30  
ePoster Podium 3

## ePP31 CLINICAL IMPACT AND SAFETY OF ENDOSCOPIC ULTRASOUND-GUIDED THROUGH THE NEEDLE MICROBIOPSIES IN PATIENTS WITH PANCREATIC CYSTS - A PROSPECTIVE SINGLE CENTER STUDY

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DOI 10.1055/s-0040-1704428

**Aims** Previously, results of EUS-guided through-the-needle biopsies (TTNBs) from pancreatic cystic lesions have been reported in several, mainly retrospective studies. While the technique is associated with high technical success and diagnostic yield, there is a lack of evidence concerning its added diagnostic value.

**Methods** Primary aim of this prospective single-center study was to estimate the clinical impact of TTNBs. Between February 2018 and August 2019, we included consecutive patients presenting with a pancreatic cystic lesion of 15 mm or above referred for EUS examination. Secondary outcomes included technical success, diagnostic yield, interrater reliability for TTNB, and adverse event (AE) rate. AEs were defined according to current ASGE lexicon.

**Results** One hundred and one patients were included. Technical success was high (n=95, 94.1%). Diagnostic yield of TTNB was higher compared to FNA-cytology, 70.3% and 31.7% ( $p < 0.001$ ), respectively. Additional diagnostic yield of TTNB, leading to change in clinical management, was 11.9%. Of these, a diagnosis of SCN was made in ten cases, leading to discontinuation of follow-up. In the remaining two cases, a diagnosis of MCN and IPMN was made in spite of low CEA concentration in cyst fluid. Interrater reliability was substantial to almost perfect for all measured parameters. AE rate was 9.9% (four mild, three moderate, two severe and one fatal) and did not change significantly following introduction of aggressive perioperative hydration with Ringer lactate and rectal NSAIDs (17.6% vs. 8.3%,  $p=0.366$ ). Most common AE was pancreatitis, three of which severe.

**Conclusions** TTNBs had an additional diagnostic yield of 11.9% compared to FNA-cytology and cross-sectional imaging, resulting in important change of clinical management. However, the procedure seems to be associated with severe adverse events and a substantial overall adverse event rate. Further studies will elucidate the appropriate indications of TTNB and in which subgroup of patients the clinical implication will outweigh the risk.

## ePP32 THE ROLE OF ENDOSCOPIC ULTRASOUND-GUIDED THROUGH-THE-NEEDLE MICROFORCEPS BIOPSY IN THE DIAGNOSIS OF PANCREATIC CYSTIC LESIONS

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DOI 10.1055/s-0040-1704429

**Aims** Pancreatic cystic neoplasms (PCN) are estimated to be present in 2-45% of the general population. Their biological behaviour ranges from benign to malignant disease. Correct management may prevent progression to pancreatic cancer while minimising the need for lifelong screening. Unfortunately, accurate diagnosis and classification of PCN remains a challenge.

To evaluate the safety and technical success of microforceps for EUS-guided through-the-needle biopsy (TTNB) and to assess its diagnostic role in the management of PCN when compared to FNA cyst fluid cytology.

**Methods** Retrospective study of prospectively enrolled patients who underwent EUS-FNA and TTNB for PCNs with suspicion of malignancy.

The biopsy of cystic wall was obtained using micro-forceps through the 19-gauge needle under EUS visualization. Cystic fluid was collected for cytological analysis.

Technical success was defined as acquisition of a specimen adequate for histological evaluation.

Categorical variables were analysed by means of Fisher's exact test, and continuous variables by t-test. A  $p < 0.05$  was considered significant.

**Results** From December 2017 to October 2019, twenty-nine patients were enrolled (21% male; mean age  $63 \pm 14$  years). The mean size of PCNs was  $39 \pm 16$  mm. TTNB was successfully performed in all patients. A diagnostic sample was obtained in 24/29 (82.7%) PCNs with TTNB compared with 13/28 (46.4%) obtained with FNA cyst fluid cytology ( $p 0.01$ ). Not mucinous PCN were diagnosed in 13/29 patients (44.8%).

Mucinous PCNs were diagnosed in 15/16 (93.7%) with TTNB compared with 8/16 (50%) obtained with FNA cyst fluid cytology ( $p 0.02$ ).

Complications were observed in 4/29 (13.8%) procedures and were mainly mild acute pancreatitis. Only one patient experienced severe acute pancreatitis with infected fluid collections.

**Conclusions** EUS-TTNB is effective for evaluating PCNs and it may help increase the diagnostic yield of mucinous PCNs. EUS-TTNB seems to be safe but not absolutely free from complications so it should be performed in well selected patients.

## ePP33 DIAGNOSTIC ACCURACY OF INTRACYSTIC GLUCOSE AS COMPARED WITH CEA FOR THE DIAGNOSIS OF MUCINOUS PANCREATIC CYSTIC LESIONS: A META ANALYSIS

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DOI 10.1055/s-0040-1704430

**Aims** Differential diagnosis between mucinous(M) and non-mucinous(NM) pancreatic cystic lesions(PCLs) is often difficult and both false positive and negative results can lead to clinically relevant overtreatment and undertreatment. Dosage of intracystic Carcinoembryonic antigen(CEA) with a cut-off  $>192$  ng/ml suggests M-PCL diagnosis, but its sensitivity is limited. Recently, it has been reported that low levels of intracystic glucose diagnose M-PCLs with high accuracy, but data are limited and heterogeneous.

We aimed to perform a meta-analysis to gather data on sensitivity, specificity and accuracy of intracystic glucose as compared with CEA for M-PCLs diagnosis.

**Methods** A computerized bibliographic search was performed on Pubmed. Pooled effects were calculated using a random-effects model and expressed in terms of pooled sensitivity and specificity and OR(95%CI) for accuracy for M-PCLs diagnosis. Heterogeneity was evaluated by  $I^2$  and publication bias by Begg-Mazumdar test and funnel plot visual inspection.

**Results** 4 cohort studies were included (3 US, 1 Portuguese), for total 319 patients (207 M, 112 NM). Employed glucose cut-off were 50 in 3 studies and 66 mg/dl in 1; all studies employed 192 ng/ml CEA cut-off. Employed gold-standard for diagnosis in the 4 studies was a composite of surgical pathology and cytology. Glucose dosage showed higher pooled sensitivity and lower heterogeneity (92%;  $I^2=0\%$ ) compared to CEA (69.4%;  $I^2=64\%$ ), while specificity was higher for CEA (75.6% glucose vs 92% CEA) with lower heterogeneity ( $I^2=89\%$  glucose vs 69% CEA). Glucose dosage was very close to be significantly superior in terms of pooled accuracy (OR 1.96; 95% CI 0.97-3.94;  $p=0.057$ ;  $I^2=53\%$ ). There was no publication bias at Begg-Mazumdar test and funnel plot.

**Conclusions** Our meta-analysis suggests that intracystic dosage of glucose is more sensitive, but CEA more specific for M-PCLs diagnosis, with glucose overall better accuracy. Given the heterogeneity of results and relative low number of investigated patients considering the high PCLs prevalence, more studies are needed to define if combined use of both markers with different cut-offs is needed to increase accuracy significantly.

Quality assurance in colonoscopy  
Thursday, April 23, 2020

11:00 – 11:30  
ePoster Podium 4

### ePP34 ONE-MAN METHOD VS. TWO-MAN METHOD FOR COLONOSCOPE INSERTION: A RANDOMIZED CONTROLLED TRIAL

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DOI 10.1055/s-0040-1704431

**Aims** The one-man method for colonoscopy insertion is recommended by professional societies and is regarded as the standard practice. However, two-man method has shown several advantages over one-man method. The aim of this study is to evaluate the performance of two-man compared to one-man method.

**Methods** In this prospective study, consecutive individuals undergoing outpatient colonoscopy were randomized to undergo colonoscopy by either one-man or two-man method. Colonoscopy examinations were performed by three senior and three junior endoscopists. The primary end-point was adenoma detection rate. Secondary outcome measures included cecal intubation rate, cecal insertion time, total colonoscopy time, procedure related complications, mean doses of sedatives, and procedure tolerability as assessed by either the endoscopy assistant or the patient.

**Results** 204 subjects (117 males, mean age 52.4 [17-87]) were randomized to one-man (n= 102) or two-man method (n=102). The adenoma detection rate was 40.2% in one-man method and 42.2% in two-man method. (p=0.82). No significant differences between the two groups were found regarding cecal intubation rate (98/102 vs 98/102), cecal insertion time (411sec vs 381sec), total examination time (1426sec vs 1296sec), and sedative dose (midazolam; 3.5mg vs 3.2mg, propofol; 88mg vs 79.3mg). However, individuals undergoing two-man method had lower pain score than one-man method (3.29 vs 2.15, p= 0.03; 0 for painless to 10 for maximal pain). Endoscopists' fatigue measured using FACIT-F was significantly lower in two-man method group.

**Conclusions** Two-man method for colonoscopy showed similar technical and clinical outcomes compared to one-man method, but resulted in better patient tolerance and reduction in endoscopists' fatigue.

### ePP35 IMPACT OF COLONOSCOPY ON WORKING ACTIVITY (CO-WORK): A PROSPECTIVE MULTICENTER OBSERVATIONAL STUDY

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DOI 10.1055/s-0040-1704432

**Aims** Colonoscopy is a complex and invasive procedure possibly affecting patient's working activity, both before and after its performance. Aim was to assess the impact of colonoscopy on patient working activity.

**Methods** Multicenter prospective observational study conducted in 10 Italian Centres from April 2016 to May 2017. Consecutive adult workers who underwent colonoscopy as outpatient were included. Data were recorded at time of colonoscopy and through a diary for the following 7 days. The primary outcome was the impact of the procedure on the working activity.

**Results** 1,102 subjects (56% male, mean age 51 years) were included. Overall, 745 (68%) subjects were employees, whereas 273 (25%) were freelance workers; 301 (27%) worked 6-7 days a week, 702 (64%) had flexible timetable, 153 (14%) worked also at night. Travel time to work was < 30 minutes in 724 (66%) subjects, and >1 hour in 68 (6%) subjects. Split-dose or same-day bowel prep regimen was followed by 772 (70%) subjects. Low- and high-volume bowel prep was taken by 494 (45%) and 608 (55%) subjects, respectively. Colonoscopy was complete in 1,038 (94%) subjects. Colon cleansing was adequate in 1,006 (91%) cases. Overall, 244 (22%) subjects reported that bowel prep significantly interfered with their working activity; this figure was higher for same-day (35%) and day-before (25%) vs. split-dose (20%) regimen (p=0.01), whereas no significant impact was found for high- (24%) vs. low-volume (20%) prep (p=0.07). Among 910 patients with follow-up data, 103 (11%) reported a worse working performance, and 50 (6%) lost ≥1 day of work. A higher proportion of subjects who reported pain during colonoscopy later had a worse working performance vs. those who did not (17% vs. 8%, p=0.01), whereas intravenous sedation did not affect this outcome (p=0.200).

**Conclusions** Bowel preparation undertaken as a same-day or day-before regimen, and pain during colonoscopy significantly affect working activity.

### ePP36 COLONOSCOPY AFTER ACUTE DIVERTICULITIS: TIME TO CHANGE RECOMMENDATIONS?

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DOI 10.1055/s-0040-1704433

**Aims** The findings of unincreased rate of colorectal cancer in diverticulosis patients along with recent reports doubting the benefit of prompt colonoscopy after acute episode of diverticulitis mandates further evaluation of colonoscopy yield and timing in this regard. The current study aims to determine whether the rate of advanced colonic neoplasia after acute diverticulitis differs from that of average risk patients, and to identify risk factors associated with their development.

**Methods** In this retrospective study, all patients hospitalized to surgery ward in the years 2008-2016 with radiographically confirmed acute diverticulitis and completed colonoscopies within 1 year of index hospitalization were included. Patients referred for screening colonoscopy in the same years were included as a control group. We compared the rate of colorectal cancer and advanced polyp diagnosis rates between both groups before and after adjustment for age, sex and colonoscopy preparation quality. Moreover, we investigated risk factors associated with increased rate of advanced polyp and cancer diagnosis.

**Results** 350 patients were included in the diverticulitis group and 1502 patients in the screening colonoscopy control group. Colorectal cancer diagnosis rate (1.2% vs. 0.3%; p=0.09) as well as overall diagnosis of advanced neoplasia (12.3% vs. 9.6%; p=0.19) were not significantly different when comparing findings from AD and control groups, respectively. Complicated diverticulitis was associated with increased risk of advanced neoplasia diagnosis (OR 3.729, 95% CI 1.803-7.713; P=0.01).

**Conclusions** Advanced neoplasia diagnosis rate in colonoscopies performed after acute diverticulitis appears to be similar to that of average risk populations. Complicated diverticulitis course, however, may confer a prominently increased risk for its diagnosis and may justify early follow-up colonoscopy. Large scale prospective studies to further define the impact of a risk-matched approach is warranted.

ERCP: Training and practice  
Thursday, April 23, 2020

11:00 – 11:30  
ePoster Podium 5

### ePP37 ARE ENDOSCOPISTS GOOD AND CONFIDENT AT ERCP FLUOROSCOPIC IMAGE INTERPRETATION?

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**DOI** 10.1055/s-0040-1704434

**Aims** The aim of this audit was to determine whether there was discordance between reporting of ERCP fluoroscopic images by endoscopists and radiologists. Objectives included gauging endoscopists confidence and training at image interpretation.

**Methods** Patients treated with ERCP in a UK tertiary centre by three experienced endoscopists were identified from a prospective database over a 1-year period. Endoscopy reports were compared for concordance to image reports written by consultant gastrointestinal radiologists who had access to the endoscopy reports. Discordance was classified as minor if it was not of immediate clinical significance or major if it resulted in adverse outcomes.

A survey was shared through social media to endoscopists to gather practice, confidence and experience of image reporting and interpretation.

**Results** 409 ERCP cases were identified. 36 were not reported by radiologists. There was full concordance in 356 cases, minor discordance in 15 cases and major discordance in 2 cases. The majority of minor discordance was secondary to 8 cases of missed stones; Other cases included incorrectly placed stents, missed fistulas, strictures, additional findings and sites of bile duct injury. Cases of major discordance included a missed stone and an incorrectly placed stent. Both patients suffered from cholangitis and had another ERCP.

100 endoscopists completed the survey (55% trainees, 45% trainers). 23% of endoscopist's images were routinely reported. Mean confidence for interpretation of images was 70%. 27% had received formal training in image interpretation. 88% felt they would benefit from formal training.

**Conclusions** Image reporting by endoscopists and radiologists has a discordance rate of 5%. Discordance is likely to increase the risk of patient harm; which occurred in 0.5% of patients in this case series. Image reporting provides a safety net and feedback to endoscopists. Formal training in image interpretation is uncommon and desired by endoscopists; this may improve endoscopist's image interpretation and increase confidence.

### ePP38 THE ERCP-RELATED LAWSUIT: THE DECLINE OF PANCREATITIS AND THE RISE OF INFECTIONS

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**DOI** 10.1055/s-0040-1704435

**Aims** The aim of our research is to determine the main causes for the ERCP-related lawsuits and to describe possible time trends regarding the causes for professional liability and medical litigation.

**Methods** In order to objectively assess the causes and the timely dynamics for malpractice trials we performed a meta-analysis of all ERCP related lawsuits published in the medical and judicial databases between 1993 and 2018. The indication for ERCP, type of procedural adverse event, the lawsuit allegation and the judicial sentence have been monitored. Cumulative meta-analysis of the effects have been studied using the Freeman-Tukey method with two-tailed significance levels.

**Results** 7257 published papers have been reviewed, 125 publications were found relevant and only 14 of them were suitable for meta-analysis inclusion. 809 malpractice suits have been evaluated. Post-ERCP acute pancreatitis has been constantly associated with an elevated risk for malpractice. However, its overall timely dynamics has been descending while the total number of duodenoscope-associated nosocomial infections-related lawsuits is on the rise. Nevertheless though, the total number of ERCP-related lawsuits has slightly decreased in the study period.

**Conclusions** Despite the fact that post-ERCP pancreatitis is still the most frequent post-procedural adverse events, judicial malpractice cases and subsequent sentences in favor of the plaintiff tend to refer more to infections rather than other traditional adverse events.

### ePP39 CHANGHAI ADVANCED ENDOSCOPY COURSES FOR ERCP TRAINING PROGRAM (CHANCE): A SHORT-TERM TRAINING MODEL IN CHINA

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**DOI** 10.1055/s-0040-1704436

**Aims** There is a huge shortage of ERCP practitioners (ERCPists) in China, and ERCP training is urgently needed. ChangHai Advanced eNdoscopy Courses for ERCP (CHANCE) is a 4-month program for ERCP training since 2004. This study evaluated the efficiency of this short-term training model, and reported on the ERCP careers of the trainees following completion of the CHANCE program.

**Methods** This survey included all the CHANCE trainees from Jan 2004 to Dec 2014. Questionnaires were sent to all trainees. The competence percentage, ERCP careers and predictive factors of competence were investigated and analyzed.

**Results** A total of 413 trainees participated in the CHANCE program over the 11 years covered by the survey. Of the submitted questionnaires, 258 were valid for the study. The mean (SD) age of the trainees was 35.36 (4.17), and the gender ratio (male vs. female) was 4.4:1. The average follow-up time was 7.77 (3.44) years. A total of 173 (67.1%) trainees had achieved competence. In terms of ERCP careers, the mean annual ERCP volume was 120.60 (96.67), with a complication percentage of 8.2%. ERCP hospital qualification, compliance with follow-up learning guidance, participating academic activity, and practitioner type were identified predictive factors of competence.

**Conclusions** As a short-term training program, the CHANCE achieved an acceptable competence percentage, providing doctors with more chances to learn ERCP and giving them appropriate training guidance for competence. Therefore, this training mode is worth promoting in developing countries with a shortage of ERCPists.

Thursday, April 23, 2020

11:00 – 11:30

Endoscopic treatment of Zenker 1

ePoster Podium 6

### ePP40 Z POEM FOR ZENKER'S DIVERTICULUM: A SINGLE CENTRE DATA OF 16 CASES

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DOI 10.1055/s-0040-1704437

**Aims** We studied 16 cases of Zenker's diverticulum causing dysphagia and regurgitation treated with Z POEM. Traditionally septotomy has recurrence rate of around 20 to 30%. Hence we attempted to see if Z POEM reduces recurrence.

**Methods** General anaesthesia. Left lateral or supine position depending on the septum. Mucosal injection 1 cms proximal to septum, entry in tunnel after 1.5 cms incision. Septum isolated from esophageal and diverticular side till the base of septum. Septum divided using an insulated tip knife completely. Hemostasis secured. Incision closed. Patient nil orally for 24 hours. Gastrografin study to see for any leak and ease of swallow. Patient started on liquids.

**Results** Total Number of patients: 16

Male: Female: 10: 6

Charlson Comorbidity index: Average to High Risk

Major Symptoms: Dysphagia- 14, Regurgitation -2

Average Procedure Time - 51min (40 - 75min)

Length Of Diverticulum: 32 mm (22 to 60 mm)

Dysphagia Score Prior to Z POEM - Average Score: 3 (10 had 3, 2 had 4 and 4 had 2)

0=normal diet/no dysphagia,

1=some solid foods,

2=semi solid food,

3=liquid food only,

4=unable to swallow anything

(total dysphagia)

**Results** Immediate Reduction in Dysphagia Score: 0.3 (13 had 0, 4 had 1)

Resolution of Diverticulum on Gastrograffin: 12/16 (75%)

Length of Hospital Stay: 1.3 days (12 - 1 night stay, 4 - 2 nights)

Length of Septotomy: 31 mm (21 to 59 mm)

Complications: Bleeding Intra op mild - 1/16 (6.3%)

Capno mediastinum/peritoneum: 2/16 (12.5%)

Symptom Recurrence: 3 months - 0/16

6 months- 0/16

12 months- 1/16(6.3%)

18 months- 1/16 (6.3%)

**Conclusions** Z POEM is an effective technique for Zenker's diverticulum. Very good relief of dysphagia, very low complication rate. Recurrence rates in early follow up is very low.

### ePP41 FLEXIBLE ENDOSCOPIC TREATMENT FOR ZENKER'S DIVERTICULUM: RESULTS OF OUR 44 CONVENTIONAL INTERVENTIONS

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DOI 10.1055/s-0040-1704438

**Aims** Flexible endoscopic myotomy (FEM) of the cricopharyngeal muscle is a widely used technique in the treatment of symptomatic Zenker's diverticulum. It is considered to be safe and effective. Nowadays a new endoscopic technique using submucosal tunneling method (Z-POEM) has been introduced. Until now, no clear advantage of this new technique has been confirmed.

**Methods** We retrospectively analyzed our experiences with conventional FEM.

**Results** 35 patients with symptomatic Zenker's diverticulum were treated with FEM and 44 myotomies were performed from September 2012 until November 2019. Most of our patients were male (20/35), with average age of 72.1 (40-88) years. The mean size of diverticula was 4 (2-10) cm. We have used diverticuloscope, while free-hand technique was needed in 8 cases where positioning of the diverticuloscope could not be achieved due to anatomical reasons. 34 patients were followed (mean 15 months), one patient was lost to follow-up. Clinical success at 1 month was 91.1% (31/34). 3 patients remained symptomatic, one of them was treated with re-myotomy and became symptom-free, another two patients refused further interventions. Over the long term period, 25/31 patients remained symptom-free after one myotomy. 5/31 patients required one further myotomy and one patient had to undergo 2 more sessions of myotomies due to recurrence of symptoms. The overall clinical success was 91.1% (31/34).

We observed pneumomediastinum in one patient that was treated conservatively successfully. Intraprocedural bleeding has occurred in (5/44) cases, in all of them the bleeding was successfully stopped during intervention. In one of them, early recurrent massive bleeding required surgery. The overall rate of significant complications was 4.5% (2/44), and there was no procedure-related mortality.

**Conclusions** Based on our experience, conventional cricopharyngeal myotomy with flexible endoscopy is safe and effective for the treatment of Zenker's diverticulum that does not need special expertise in the field of submucosal tunneling technique.

### ePP42 ONE MORE GOOD PLACE FOR TUNNEL! COMPARATIVE RESULTS OF ENDOSCOPIC OPERATIONS FOR ZENKER'S DIVERTICULUM ON 135 CASES

**Authors** Shishin K<sup>1</sup>, Nedoluzhko I<sup>1</sup>, Pavlov I<sup>1</sup>, Shumkina L<sup>1</sup>, Kurushkina N<sup>1</sup>

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DOI 10.1055/s-0040-1704439

**Aims** The best option of treatment of Zenker's diverticulum is still controversial. Recent data shows that same effectiveness of flexible endoscopy and traditional surgery. The only drawback of endoscopic technique is the limitation of myotomy level, which can result in the relapse of symptoms. Driven by new technologies we started to utilize the tunnel technique in patients with Zenker's diverticulum.

**Aim** is to evaluate the effectiveness of endoscopic cricopharyngoesophagomyotomy using a different techniques in the treatment of patients with Zenker's diverticulum.

**Methods** In the period from July 2014 to November 2019, endoscopic surgery in MCSC A.S. Loginov for Zenker's diverticulum was performed in 135 patients. The average age of patients was 66 (from 34 to 86 years). According to the traditional method, 35 patients were operated on (I group). The average operative time was 42 minutes. According to the tunnel technique, 37 patients were operated on (group II). The mean operative intervention time was 50 minutes. According to the combined method, 63 patients were operated on. The average operative time was 31 minutes.

**Results** The peculiarity of the patients who underwent surgery using the new combined method was the almost complete absence of the residual cavity of the diverticulum during the X-ray control examination.

Three patients in the group of traditional endoscopic treatment were re-operated because of complaints recurrence; No recurrence of symptoms was observed after tunnel or combined technique.

**Conclusions** Combined and tunneled endoscopic surgery for Zenker's diverticulum allows to successfully expand the scope of surgical intervention by performing an extended myotomy and dissection of the mucous membrane of the septum. This allows you to create conditions for the prevention of recurrence of the disease, thereby providing the best result of treatment.

### ePP43 FEASIBILITY, SAFETY AND EFFECTIVENESS OF ENDOSCOPIC SUBMUCOSAL DISSECTION OF GASTROINTESTINAL LESIONS IN OUTPATIENTS VS INPATIENTS

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DOI 10.1055/s-0040-1704440

**Aims** Endoscopic submucosal dissection (ESD) allows 'en-bloc' resection of superficial gastrointestinal neoplasms. Usually, ESDs are performed as inpatients. This study aimed to assess the feasibility, safety and efficacy of ESD in outpatients compared to inpatients.

**Methods** We retrospectively reviewed a prospective cohort of 83 consecutive patients undergoing a ESD at one Italian tertiary referral centre from August 2017 to October 2019.

**Results** Eighty-three patients with 83 lesions undergoing ESD were reviewed. Of these, 69% were located in the rectum and in the sigma, 4% in the right colon, 5% in the esophagus and 22% in the stomach. Overall, 70 (84.3%) were inpatients and 13 (15.7%) outpatients. Mean age was 69.5±13.0 and 67.4±12.8 years respectively (p=0.5). In both groups most lesions were lateral spreading tumors (58.6% vs 61.6%, p=0.8). Inpatient presented a larger mean lesion size of 36.8±15.0 vs 30.7±10.5 mm (p=0.09), and a higher prevalence of Kudo type IV lesions in 67.3 vs 50.0% (p=0.02). ESD was feasible in all cases. The median duration of procedures was higher in inpatients (112.3 vs 71.9 minutes; p=0.008). Complications occurred in 9/70 (13.2%) of inpatients vs 1/13 (7.7%) of outpatients (p=0.5). In the inpatient group there were six perforations treated endoscopically and three minor bleedings, whereas in the outpatient group there were three minor bleedings. All outpatients were observed for 8-10 hours and discharged the same day of procedure.

A R0 resection was achieved in 59/70 (84.3%) and 10/13 (76.9%) of patients, respectively. Both budding and angioinvasion were observed in 2 cases (1 in each group).

After a median follow-up of 8.4 months, recurrence was observed in 1/70 inpatients and in 0/13 outpatients and the only case of recurrence was successfully treated with EMR.

**Conclusions** Our experience confirmed that ESD is also feasible, effective and safe on an outpatient basis for selected and less complex gastrointestinal lesions.

### ePP44 ENDOSCOPIC SUBMUCOSAL DISSECTION USING SCISSOR-TYPE KNIFE (SB KNIFE JR) FOR LARGE BROAD-BASED OR STALKED COLONIC POLYPS: A MULTICENTRE CASE SERIES

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**Institute** 1 St Mark's Hospital, Wolfson Unit for Endoscopy, London, United Kingdom; 2 Hillingdon Hospitals NHS Foundation Trust, London, United Kingdom; 3 Imperial College London, Department of Surgery and Cancer, London, United Kingdom; 4 Nottingham University Hospitals NHS Trust, NIHR Nottingham Digestive Diseases Biomedical Research Centre, Nottingham, United Kingdom; 5 Sahlgrenska University Hospital, Division of Gastroenterology, Department of Internal Medicine, Gothenburg, Sweden  
DOI 10.1055/s-0040-1704441

**Aims** Large, broad-based pedunculated (lp) or sub-pedunculated (lsp) polyps can be technically difficult to resect with significant risk of intraprocedural and delayed bleeding. We report our experience in endoscopic submucosal dissection (ESD) using a scissor-type knife (SB-knife Junior, Sumius) for these lesions.

**Methods** Databases from four institutions including 57 consecutive patients with 61 polyps (lp n=38/lsp n=23) resected by ESD with SB-knife between 2014 and 2019 were analysed. Intra-procedural bleeding was treated with the haemostatic function of SB-knife. Clinicopathological characteristics, additional instrument exchange for haemostasis and complication rates were examined.

**Results** Median polyp size was 35mm (20-70mm). Fifty-one polyps (84%) were in rectum/sigmoid colon. Histology showed: 30 adenomas with low-grade dysplasia (49%), 19 adenomas with high-grade dysplasia (31%), four T1N0 adenocarcinomas (7%), three serrated lesions (5%), three hamartomas (5%) and two lipomas (3%).

En-bloc resection was achieved for 57 polyps (95%). Three lsp lesions were switched to piecemeal snare-resection after partial SB-knife dissection. One ESD was abandoned due to muscle retraction during dissection. At surgery, this patient had a T1N0 (SM3) tumour.

Complete histological (R0) resection rate was 91% (52/57). Two cases had unevaluable margins (RX) and one case had deep margin involvement (R1). Of three polyp cancers, one had curative (R0) resection at index procedure with SB-knife whilst two patients at risk of lymph node metastasis underwent additional radical surgery.

Haemostatic forceps were required during in 11 ESD cases (18%). Prophylactic clips were used in 54 (89%) cases (median 4 clips (range 1-10)). There were no episodes of perforation or post-polypectomy bleeding. Twenty-nine patients (51%) had endoscopic follow-up data over a median 12 months (range 6-48). One piecemeal resected polyp had local recurrence at 6 months, treated successfully with under-water EMR.

**Conclusions** ESD with the SB-knife is efficient and safe in treating lp/lsp polyps. Our series highlighted a favourable short and medium-term outcome.

### ePP45V DILUMEN ENDOSCOPIC SUBMUCOSAL DISSECTION OF THE ASCENDING COLON IN A RECURRENT COLONIC LESION

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DOI 10.1055/s-0040-1704442

The treatment of colonic recurrent lesions could be challenging especially for complex polyps. DiLumen Endolumenal Interventional Platform (EIP) improves endoscopic stability and visualization and it allows an effective tissue traction.

A 59-year-old woman was referred to our center for a recurrent lesion.

Colonoscopy documented a 20 millimeters sessile polyp involving a fold in the ascending colon. DiLumen was placed allowing a complete visualization of the lesion and the submucosal dissection was performed with a traction-assisted technique. The total procedural time was 33 minutes.

This device can be a valuable tool in the armamentarium for the management of complex colonic lesions.

Thursday, April 23, 2020

11:00 – 11:30

Keeping the lumen 1

ePoster Podium 8

### ePP46 QUALITY OF LIFE BEFORE AND AFTER ENDOSCOPIC LIGATION OF HEMORRHOIDS: APPLICATION OF THE BURDEN HÉMO/FISS QOL SCORE

**Authors** Ayari M<sup>1</sup>, Ennaifer R<sup>1</sup>, Nsibi S<sup>1</sup>, Bouchabou B<sup>1</sup>, Nejma HB<sup>1</sup>

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**DOI** 10.1055/s-0040-1704443

**Aims** Improving quality of life (QoL) of patients has become a major therapeutic goal in the management of hemorrhoidal disease (HD). Rubber band ligation (RBL) of hemorrhoids is currently the first-line therapeutic after failure of medical treatment. The aim of our study is to assess the impact of HD on the quality of life (QoL) of patients before and after RBL.

**Methods** We performed a prospective study including patients requiring rubber band ligation after failure of the medical treatment. QoL before and after RBL was assessed using the Burden Hemo/Fiss Qol score based on a questionnaire including 23 questions grouped into four domains: Physical disorders, psychology, troubles defecating and repercussions on sexuality.

**Results** A total of 40 patients were included in our study, with a male predominance (sex ratio M/F: 7.5). The mean age of our patients was 46.8 ± 10.9 years. The clinical signs were dominated by bleeding (91.4%), followed by anal pain (48.5%). Indications for RBL were hemorrhagic internal hemorrhoids (77%) and prolapse (23%). Clinical examination found grade 2 internal hemorrhoids in 68.5% of cases and grade 3 in 31.5% of cases. A total of 148 RBL sessions were performed with an average number of ligation sessions per patients of 4 sessions (1 - 12). The mean value of the Hemo/Fiss score before ligation was 49.27 versus 14.82 after ( $p < 0.001$ ). A significant improvement in physical disorders (48.64 versus 14.55,  $p < 0.001$ ), troubles defecating (68.5 versus 21.91  $p < 0.001$ ), psychology (45.27 versus 12.95  $p = 0.001$ ) and sexuality (37.09 versus 12.09,  $p = 0.02$ ) was observed after instrumental treatment by band ligation.

**Conclusions** Rubber band ligation of hemorrhoids is an effective technique that improves QoL. The Burden Hemo/Fiss Qol questionnaire reliably assesses the impact of HD on patients' lives. This simple tool can be useful for assessing effectiveness of band ligation in daily practice.

### ePP47 HEMORRHOIDAL DISEASE: SHORT AND LONG-TERM RESULTS OF RUBBER BAND LIGATION

**Authors** Nsibi S<sup>1</sup>, Ennaifer R<sup>1</sup>, Ayari M<sup>1</sup>, Bouchabou B<sup>1</sup>, Nejma HB<sup>1</sup>

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**DOI** 10.1055/s-0040-1704444

**Aims** Hemorrhoidal disease (HM) is probably the most frequent proctologic disorder. There are several therapeutic approaches: medical treatment, instrumental treatment in particularly band ligation and surgical treatment. Rubber band ligation of hemorrhoids (RBLH) remains the main instrumental treatment in our country. The aim of our study was to evaluate the short and long-term outcome of RBLH.

**Methods** We performed a descriptive, four-year retrospective study (2014-2018). We included all patients who had been treated with RBLH. Demographic, clinical and therapeutic data relating to patients and their disease were analyzed.

**Results** Thirty-seven patients were included with a male predominance: sex ratio (M/F) = 7.7. The average age was 46 years. 17% of patients were smokers and 43% consumed alcohol. The average follow-up was of 20.4 months [1-72]. The predominant symptomatology was rectorrhagia followed by proctalgia and constipation in 32, 17 and 12 patients respectively. Proctologic examination was motivated by anemia in 28% of cases requiring transfusion in 3 patients. 70% of the patients had internal hemorrhoids (IH) grade 2 according to the Goligher classification; 30% had IH grade 3. The indication for RBLH was

a failure of medical treatment in 70% of cases. The average number of RBLH sessions was 4 sessions [1-12] and the average number of elastics per patient was 4. Band ligation was complicated by minimal bleeding in 5 patients (14%). Eleven patients had pain within 6 hours of ligation, with 5 patients requiring the use of analgesics. Three cases of external hemorrhoidal thrombosis have been described. Good results were noticed in the majority of cases (80%) at 5 years follow-up. Two patients had recourse to surgical treatment.

**Conclusions** In our study, RBLH was an effective and safe technique. These results were concordant with the literature data which underlines the important place of the band ligation in the management of HD.

### ePP48V TWO-STEPS FULL-THICKNESS RESECTION PLUS ANCHOR-DEVICE OF AN LST-GRANULAR TYPE INSIDE A RECTAL RECESS IN A PATIENT WITH AN ILEO-RECTAL ANASTOMOSIS

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**DOI** 10.1055/s-0040-1704445

A 70-years old woman undergone ileo-rectal anastomosis following colectomy and lower anterior resection for synchronous adenocarcinomas of right colon and proximal rectum underwent follow-up lower GI endoscopy showed a granular laterally spreading tumour (LST-G) of 3 cm, completely involving a recess of remnant rectum and the suture line. A full-thickness resection-device (FTRD), with the addition of an anchor-device, was performed. Histology showed tubular-villous adenoma with low grade dysplasia. After three months endoscopy revealed a recurrence of granular adenoma tissue upon the clip. Hot snaring was performed to complete resection. At six months later lower GI endoscopy showed complete eradication.

Thursday, April 23, 2020

11:30 – 12:00

Endoscopic sleeve gastropasty

ePoster Podium 1

### ePP49 FIRST EXPERIENCES WITH THE ENDOSCOPIC SLEEVE GASTROPLASTY (ESG) WITH THE ENDOMINA-SYSTEM<sup>®</sup> AS A BRIDGE TO SURGERY FOR SUPEROBES PATIENTS - A ONE-YEAR FOLLOW UP

**Authors** Prinz F<sup>1</sup>, Paschwitz R<sup>2</sup>, Kuegler T<sup>2</sup>, Wasserberg S<sup>2</sup>, Anthuber M<sup>2</sup>,

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**DOI** 10.1055/s-0040-1704446

**Aims** According to the German guidelines, behavioral therapy and surgery are the first line treatment options for obesity. For superobese patients (BMI > 50 kg/m<sup>2</sup>) with multiple comorbidities, an endoscopic bridge to surgery to reduce the perioperative risk may be a further treatment option.

In our bariatric center, we investigated the Endoscopic Sleeve Gastropasty (ESG) with the Endomina<sup>®</sup>-System (Endo Tools, Gosselies, Belgium). The aim being to investigate clinical performance and adverse events of an ESG prior to bariatric surgery.

**Methods** Follow-up of weight loss in kg, reduction of Body Mass Index (BMI) in kg/m<sup>2</sup>, total body weight loss (TBWL) and excess weight loss (EWL) in percent three, six and twelve months after ESG were recorded. All adverse events were documented and graded.

**Results** From August 2018 to October 2019, n=6 patients were treated with the Endomina<sup>®</sup>-System. Median body weight was 161 kg with a median BMI of 59.9 kg/m<sup>2</sup>. Median body weight was 138.5 kg, 133.5 kg and 110.6 kg three, six and

twelve months after treatment respectively. Median BMI three, six and twelve months after treatment was 51.5 kg/m<sup>2</sup>, 49.6 kg/m<sup>2</sup> and 38.7 kg/m<sup>2</sup> respectively. Median TBWL was 8.9 % after three months, 12.3 % after six months and 24.8 % twelve months after treatment. Median EWL three, six and twelve months after treatment was 16.5 %, 22.6 % and 48.2 % respectively.

One patient was lost to follow-up. One patient did not achieve a satisfactory weight loss six months after treatment and received a laparoscopic sleeve-gastrectomy. All other patients are currently reducing weight. No severe adverse events did occur.

**Conclusions** ESG with Endomina<sup>®</sup> is an effective, minimal-invasive procedure for the treatment of superobese patients after which bariatric surgery can be performed. ESG may substitute intragastric balloon implantation as a bridge to surgery in superobese patients.

## ePP50 ENDOSCOPIC SLEEVE GASTROPLASTY OUTCOMES IN PATIENTS WITH SUBTHRESHOLD BINGE EATING DISORDER AND DYSFUNCTIONAL EATING PATTERNS

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**DOI** 10.1055/s-0040-1704447

**Aims** Feeding and Eating Disorders, first and foremost the Binge Eating Disorder (BED), contribute to the onset of obesity as well as dysfunctional eating patterns characterized by binge, grazing or snacking.

Bariatric procedures are contraindicated in patients suffering from BED not properly treated, while there aren't exhaustive scientific evidences analyzing bariatric treatment outcomes in patients suffering from subthreshold psychiatric disorders with dysfunctional eating patterns.

The aim of the study is to analyze Endoscopic Sleeve Gastroplasty (ESG) outcomes in patients affected by subthreshold BED.

**Methods** The study focuses on 23 patients (61% women; mean BMI 42.37 kg/m<sup>2</sup>) enrolled from January 2017 to June 2019 who underwent ESG and whose mental features were recorded using standardized screening tests; the focal point of the study is the Binge Eating Scale (BES), which expresses a high risk of BED whether its overall clinical score is  $\geq 17$ .

All procedures were performed with the Apollo Overstitch suturing system and with a double channel gastroscope (Olympus 2TGIF-160) under general anesthesia and with CO<sub>2</sub> insufflation.

Patients were recalled 3 and 6 months after ESG; Percentage of Excess Weight Loss (%EWL) and Bariatric Analysis and Reporting Outcome System (BAROS) questionnaire were evaluated. Data collected were analyzed retrospectively. Statistical analysis was done with ANOVA test and p value < 0.05 was considered significant.

**Results** No peri-procedural complications were registered.

The ANOVA test showed a greater %EWL at 6 months in patients who scored BES $\geq 17$  compared to those who scored BES < 17 (52.09% vs 35.39%, p=0.019). The ANOVA test also showed a higher BAROS score at 6 months in patients who scored BES $\geq 17$  compared to those who scored BES < 17 (5.10 vs 4.32, p=0.048).

**Conclusions** If the ESG is not recommended for patients suffering from BED, it is associated with promising results in patients with subthreshold psychiatric disorders with dysfunctional eating patterns characterized by binge.

## ePP51 EFFICACY AND SAFETY OF ENDOSCOPIC SLEEVE GASTROPLASTY IN THE TREATMENT OF OVERWEIGHT AND OBESE PATIENTS: A SYSTEMATIC REVIEW AND META-ANALYSIS

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**DOI** 10.1055/s-0040-1704448

**Aims** Bariatric surgery is the most effective treatment for obesity and associated comorbidities; however, only 2% of eligible patients undergo surgery. Endoscopic Bariatric and Metabolic Therapies (EBMT) have recently gained popularity due to their minimally invasive nature and higher patient acceptability. Among the EBMTs, Endoscopic Sleeve Gastroplasty (ESG) is a promising procedure, and many recent studies have reported outcomes at short and medium-term follow-up. The aim of this study is to evaluate the efficacy and safety of ESG for the treatment of overweight and obese patients.

**Methods** This systematic review was conducted according to the PRISMA guidelines. Searches were performed on Medline (Pubmed), Cochrane Library, EMBASE, and LILACS databases without any language restrictions from their dates of inception to October 2019. Outcomes evaluated were: excess weight loss (%EWL), total weight loss (%TWL), absolute weight loss (AWL), and procedure-related adverse events.

**Results** Out of a total of 24,680 studies, 11 studies with a total of 2,170 patients met the inclusion criteria and were eligible for analysis. Eight included studies were prospective, and 3 were retrospective. The mean pre-procedure weight was 98.43 kg. The pooled mean %TWL at 6, 12 and 18 months was 15.32%, 16.15%, and 16.8%, respectively. Whereas the pooled mean %EWL at 6, 12 and 18 months was 55.80%, 60.07%, and 73.04%, respectively. The mean AWL at 6, 12 and 18 months was 14.88 kg, 17.32 kg, and 15.95 kg, respectively. The pooled incidence of severe adverse events (SAE) was 0.8% and there was no procedure-related mortality. Gastrointestinal bleeding and peri-gastric fluid collection were the most common reported SAE. Two patients required surgical intervention for the management of SAEs.

**Conclusions** ESG has demonstrated safety and efficacy in the short and medium-term, with a lower rate of adverse events and is a minimally invasive alternative promising in the treatment of obesity.

Thursday, April 23, 2020

Large biliary stones

11:30 – 12:00

ePoster Podium 2

## ePP52 THE MACRODILATATION OF THE SPHINCTER OF ODDI OR SPHINCTEROPLASTY IN THE TREATMENT OF LARGE STONES OF THE MAIN BILE DUCT ABOUT A MOROCCAN POPULATION

**Authors** Elkoti I, Loubaris K, Berraida R, Lmrabti S, Boutalaka H, Sair A, Bendehmane A, Jamal S, Adajou T, Mohamed O, Sentissi S, Seddik H, Benkirane A

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**DOI** 10.1055/s-0040-1704449

**Aims** Sphincteroplasty is a large dilatation of the papilla which completes an endoscopic sphincterotomy. The aim of this work is to evaluate the results and complications of sphincteroplasty and associated factors.

**Methods** Retrospective study: January 2008- March 2019. 58 patients with macrocalculations of the main bile duct. The success: absence of residual calculation at the end of the procedure. Statistical analysis was by the Spss20. The

associated factors studied: age, sex, and diameter of the main bile duct, number of stones, presence of cholangitis, bile duct size disparity, and the concept of anterior sphincterotomy.

**Results** Age:  $63.5 \pm 12$  years. sex ratio H/F: 0.7 .57.9% of the patients had multiple stones ( $\geq 2$ ), 29.6% had sphincteroplasty 13.6% of patients had an associated endoscopic sphincterotomy, and in 11.3% there was a difference in caliber between the calculation and the diameter of the bile duct downstream. The clinical presentation: cholangitis in 9 patients; dissociated biliary symptoms suggestive of lithiasis migration in 32 patients while 16 patients showed no symptoms. The average number of stones found was  $1.86 \pm 0.8$  per patient with extremes ranging from 1 to 10. The average diameter of the bile duct  $18 \pm 4$  mm, that of the stones was  $18 \pm$  mm, and that of Macrodilating balloon was  $16.9 \pm 1.5$  mm with extremes ranging from 14 to 20 mm. The success rate: 91.6% . Extraction was not possible in 6 patients with macrocalculations with an average diameter of  $19 \pm 2$  mm (plastic biliary prosthesis for 2 patients). The complication rate: 6.8% (minimal bleeding curbed by pneumatic compression).

**Conclusions** Sphincteroplasty is an effective method at the cost of a low morbidity for the endoscopic extraction of macrocalculations of the bile duct. success rate is 91.6% and immediate complications are rare. No factors studied seem to be associated with the failure or success of this technique

### ePP53 EFFICACY AND SAFETY OF ENDOSCOPIC TREATMENT OF DIFFICULT COMMON BILE DUCT STONES IN ELDERLY PATIENTS

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DOI 10.1055/s-0040-1704450

**Aims** According to WHO, there is currently an increase in the life expectancy of the population. At the same time, common bile duct stones (CBD) are a frequent pathology in the elderly which means that the frequency of ERCP is also increased. However, when performing ERCP in elderly patients, especially those with severe concomitant pathology the risk of some complications is higher. Therefore it is important to plan the stages of endoscopic treatment.

**Methods** Between 2010 and 2019, 239 patients (183 women, 56 men) over 75 years old (mean age 81.9 years) were treated for CBD stones at the clinic. Of the 239 patients, 148 (61.9%) had difficult CBD stones. The diagnostic algorithm in patients with CBD stones included clinical and laboratory examination, ultrasound, according to the indications of MRCP or EUS, the final method was ERCP.

**Results** All 239 patients underwent ERCP. Lithoextraction (with or without lithotripsy) or biliary stenting was performed depending on the characteristics of the CBD stones as well as the general condition of the patient. In 48 out of 148 (32.4%) patients with difficult CBD stones with a high risk of developing complications, the endoscopic treatment was performed step by step. The installation of a biliary plastic stent as a first step allows us to avoid emergency interventions and to perform delayed lithoextraction, after stabilization of the patient's condition. Of the 239 elderly patients who underwent ERCP for CBD stones, 12 (5%) developed complications, death was observed in 5 (2.2%) cases.

**Conclusions** Stage treatment in which stenting of the bile ducts is performed at the first step allows removing CBD stones after stabilization of the elderly patient's condition, minimizing the likelihood of complications. Thus, this approach is effective and safe for endoscopic treatment of difficult CBD stones in elderly patients.

### ePP54 ENDOSCOPIC PAPILLARY LARGE BALLOON DILATION AFTER SPHINCTEROTOMY REDUCES SURGICAL REFERRAL RATE

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DOI 10.1055/s-0040-1704451

**Aims** Endoscopic papillary large balloon dilation (EPLBD) is a safe and effective technique for removal of common bile duct stones (CBDS) with a lower rate of mechanical lithotripsy (ML) and similar CBD clearance rate compared to sphincterotomy (EST). It is unclear if EPLBD reduces the number of patients referred for surgical CBD exploration. We aimed to compare CBD clearance, ML use and referral for CBD exploration between patients treated with EST alone vs. EST followed by EPLBD (EST+EPLBD).

**Methods** We performed a single-centre retrospective observational cohort study. Data was extracted from the electronic endoscopic reporting system for ERCPs performed from September 2013 to January 2019. Patients who failed CBDS extraction with standard EST at index ERCP were included for analysis. Patients who had repeat ERCP for CBDS extraction without the use of EPLBD (EST group) were compared to those who had EPLBD at time of repeat ERCP (EST+EPLBD). Difficult stones were defined as stones  $\geq 15$ mm, presence of  $\geq 5$  stones or presence of a tapering distal CBD.

**Results** 117 patients were included for analysis, 48 who had EST and 69 who had EST+EPLBD. Both groups had similar age, number of stones, and stone size. 79% of the EST group had difficult stones vs. 54% in the EST+EPLBD group. We observed a significantly higher rate of CBD clearance in the EST+EPLBD group overall (88% vs. 38%,  $p < 0.001$ ) and in those with difficult stones (78% vs. 32%,  $p < 0.001$ ). There was no significant difference in ML use (20% vs. 31%,  $p = 0.18$ ). Surgical referral rates were significantly lower in the EST+EPLBD group (1% vs. 17%,  $p = 0.002$ ). There was no difference in complication rates.

**Conclusions** The use of EPLBD after previous EST is associated with significantly improved CBD clearance rates compared with EST alone, including for difficult stones, and a significantly reduced referral rate for CBD exploration.

Thursday, April 23, 2020

Biliary drainage

11:30 – 12:00

ePoster Podium 3

### ePP55 COMPARISON OF LONG-TERM SUCCESS RATES OF EUS GUIDED BILIARY DRAINAGE VIA EUS GUIDED TRANSMURAL AND TRANSPAPILLARY APPROACH - A SINGLE CENTER RETROSPECTIVE COMPARATIVE STUDY

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DOI 10.1055/s-0040-1704452

**Aims** EUS guided biliary drainage (EUS-BD) is an accepted treatment after failed ERCP in patients with malignant biliary obstruction (MBO). Transpapillary (TP) [antegrade, rendezvous] or Transmural (TM) [choledochoduodenostomy, hepatogastrostomy] approach may be used. This study compares long-term success rates of EUS-BD by TM or TP.

**Methods** Retrospective analysis of prospectively maintained database of patients undergoing EUS-BD for MBO and failed ERCP. Study duration - 8 years (2011 - 2019). Patients underwent EUS BD by TP or TM approach using self-expandable metal stents (SEMS). Patients followed up until stent occlusion or death, whichever was earlier. Stent patency and adverse events were compared.

**Results** Total N = 93; TM - 60 (64.8%), TP - 33 (35.2%). Median age = 64.7 years (IQR 39 - 96); 55 (59.2%) males. Both groups were comparable for demographic and clinical characteristics. Level of biliary obstruction was comparable in both groups - distal - TM - 44 (73.3%); TP - 24 (72.2%),  $p = 1.00$ ; proximal - TM -

16 (26.7 %); TP - 9 (27.8%), p=1.00. EUS-BD was technically successful in all except one in TM group. Follow up - median 69 days (IQR 16-324) for cohort; TM - 68 (26 - 324); TP - 85 (16-275); p=0.30. Stent occlusion was significantly more frequent in TP than TM group [11/33 (33%) vs 5/60 (8.3%); p=0.02]. Stent migration was more frequent in TM group. Overall stent related adverse events were comparable in both groups (TP - 10/33, 30.3%; TM - 9/60, 15%, p=0.19). Median stent patency after TM = 54 days (35 - 98) vs. TP = 65 days (32 - 105), p=1.07. Kaplan Meier survival graph revealed superior survival for TM group.

**Conclusions** For patients undergoing EUS-BD for MBO, stent patency after TM approach was significantly superior to TP approach. Stent migration occurred more in TM group. Further randomized studies are recommended to confirm these findings.

## ePP56 OUTCOMES OF ENDOSCOPIC ULTRASOUND GUIDED BILIARY DRAINAGE - A PROSPECTIVE OBSERVATIONAL STUDY

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**DOI** 10.1055/s-0040-1704453

**Aims** EUS-guided biliary drainage (EUS-BD) is useful for biliary access, but the success and complication rates vary with different techniques. Hence, we aim to study the outcomes of these techniques.

**Methods** Consecutive patients undergoing EUS-BD after a failed ERCP or with surgically altered anatomy were prospectively enrolled from September 2017 to August 2019. EUS-guided rendezvous (EUS-RV) or EUS guided antegrade drainage (EUS-AG) was attempted in patients with normal anatomy after failed ERCP. EUS-choledochoduodenostomy (EUS-CDS) and EUS-guided hepaticogastrostomy (EUS-HGS) were attempted in duodenal obstruction or surgically altered anatomy. Technical success was successful stent placement for biliary drainage and clinical success was improvements in biochemical parameters after stenting. Patient characteristics, procedural indications, stent type (plastic and metallic), procedure time, complications, and short to medium term follow-up were documented.

**Results** 116 patients [72(62.1%), male] successfully underwent EUS-BD with a median age of 41 (range 25-63 years). The commonest indication was failed ERCP in 53(45.7%) followed by duodenal narrowing 43(37.1%) and surgically altered anatomy in 20(17.2%). Technical success was achieved in 109(94%). EUS-HGS was done in 23(19.8%), EUS-CDS in 22(19%), EUS-RV in 42(36.2%) and EUS-Antegrade in 22(19%). 7(6%) had failure hence underwent successful Percutaneous transhepatic biliary drainage. The mean (SD) procedural time for EUS-BD was 32.3 (1.8) mins. The mean serum total bilirubin reduced significantly from baseline 11.03 (6.6) to 4.2 (2.4) at 7 days (p< 0.001). SEMs were used in 75(64.6%) while plastic stents were used in 34(29.3%). The median follow up was 263 (range 55-414 days). Complications included cholangitis in 5 (4.3%), bleeding 4 (3.4%), bile leak 4(3.4%) and stripping of wire in 2(1.7%) patients.

**Conclusions** EUS-BD is safe and effective for biliary access; the outcomes are promising at our center. EUS-RV serves as a rescue therapy in patients with failed ERCP with normal anatomy, although there was no significant difference in complication rates among the techniques.

## ePP57 EUS-GUIDED GALLBLADDER DRAINAGE AS A RESCUE TECHNIQUE AFTER FAILED ERCP

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**DOI** 10.1055/s-0040-1704454

**Aims** Papilla cannulation is not always achieved during ERCP procedure. When this happens EUS-guided Access is the choice. However, sometimes this is not possible and in these cases gallbladder drainage may be an alternative.

**To evaluate EUS-guided gallbladder drainage in patients with obstructive jaundice in which ERCP fails.**

**Methods** Retrospective case series. EUS-guided gallbladder drainage performed as a rescue technique for biliary drainage after failed ERCP were included. The correct placement of the stent in the gallbladder was considered technical success, and the reduction of >50% in bilirubin levels after 14 days clinical success. In all cases, 10x10mm Hot-Axios stents with FreeHand technique were used. In 8 cases, coaxial pigtail was placed.

**Results** Ten patients were included (7 male). Mean age was 71±12.7 years.

The indication was neoplastic jaundice (n=9) and benign obstruction secondary to choledocholithiasis (n=1).

Cholecystogastrostomy was performed in 6 patients and cholecystoduodenostomy in the remaining four. Technical success was achieved in 100% and clinical success in 80%. There were no intraprocedural or early adverse events, however 4 late complications (40%) were observed: 3 stent obstruction and one self-limited gallbladder haemorrhage. All complications appeared in patients with cholecystogastrostomy and were solved by therapeutical endoscopy. 20% of patients without clinical success required a second endoscopy. Clinical failures were due to recurrence of jaundice before 14 days, requiring hepaticogastrostomy and confirmation of cystic obstruction after gallbladder drainage, and a new successful rendezvous attempt was made. The mean duration of the procedure was 12.7±5.8 minutes. The median time to bilirubin normalization was 13 days (range 9-23). The median duration of follow-up: 41.5 (17-165) days.

**Conclusions** EUS-guided gallbladder drainage is an effective alternative after ERCP failure when other biliary drainage techniques are not possible and cystic duct is permeable. The duodenal route is preferable and coaxial pigtail placement is recommended.

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Thursday, April 23, 2020

11:30 – 12:00

Periendoscopic management: From appropriateness to sedation

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ePoster Podium 4

## ePP58 ASA SCORE AND OBESITY, BUT NOT AGE, INCREASE COMPLICATIONS OF ENDOSCOPIST-BASED PROPOFOL SEDATION FOR EUS

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**DOI** 10.1055/s-0040-1704455

**Aims** The aim of our study was to study risk factors, safety and complications of endoscopist-guided propofol sedation for upper EUS in patients with comorbidities, obese or age>65.

**Methods** Patients referred for EUS from January-2011 to May-2019 were included. We compared complications between patients under 65 years-old and older than 65, BMI< 35 and above 35, and patients classified as ASA 1-2, and the ones with ASA 3-4. Baseline characteristics such as pulse or oxygen saturation were compared. Complications such as hypoxemia, hypotension or cardiac rhythm abnormalities were also compared. Propofol dosages were studied.

**Results** 2975 patients (48,6% male) were included. 1338 (45%) were older than 65 years, 743 (25%) were ASA III-IV and 27 (1%) were obese. Older patients had a lower basal oxygen saturation (97,7%vs98,5%; p< 0,0001), so did ASA3-ASA4 patients (96,7%vs.98,1%; p=0,005). No differences were found in heart rate between those groups, nor in obese/lean patients. Propofol doses were lower in old patients (p< 0,0001), and ASA3-ASA4 (p< 0,0001). In obese individuals, induction doses were different with respect to lean patients, but not reinjection doses

( $p < 0.0001$ ). The bivariate analysis showed that older patients (3.6% vs. 2%;  $p < 0.008$ ), ASA3-ASA4 patients (4.6%vs.2.19%;  $p < 0.001$ ), and obese patients (26% vs.4.7%;  $p < 0.01$ ) suffered desaturation more frequently. ASA3-ASA4 patients had an increase rate of bradycardia (0.7% vs. 0.13%;  $p=0.014$ ). When considered all complications related to sedation (desaturation, bradycardia and hypotension) in a logistic regression analysis, obesity (OR: 8.57; CI95%: 3.62-20.28;  $P < 0.0001$ ) and comorbidities (ASA3-ASA-4) (OR: 2.04; CI95%: 1.44-3.01;  $p < 0.0001$ ) were independently related with them, but not age, when corrected by the two other risk factors.

**Conclusions** Comorbidities and obesity are risk factors for adverse events when sedating patients for EUS. Older patients need lower doses of sedatives, being the other two factors but not age itself risk factors for complications.

### ePP59 DOES DOUBLE HIGH LEVEL DISINFECTION FOR DUODENOSCOPES ADD ANY VALUE? A SYSTEMATIC REVIEW AND META ANALYSIS

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DOI 10.1055/s-0040-1704456

**Aims** Duodenoscopes emerging infection especially drug resistant bacteria considered a major concern nowadays. Different approaches were tried to overcome this problem, like double high level disinfection procedure. Our aim was to perform a systematic review and meta analysis to evaluate risk difference for positive cultures from duodenoscopes between double high level disinfection (dHLD) and single high level disinfection (sHLD).

**Methods** A thorough literature search (in October and November 2019) for studies comparing between dHLD and sHLD for duodenoscopes was performed by 3 researchers in web of science, Scopus, PubMed and Cochran databases. the search terms were “duodenoscope”, “ERCP endoscope”, “disinfection”, “sterilization” and “reprocessing” with only randomized clinical trials with English language were accepted.

**Results** 4 trials were identified studying dHLD and only 2 clinical trials comparing dHLD with standard sHLD were found reporting 6193 duodenoscopes’ cultures. Overall sHLD cultures were 2972 and dHLD cultures were 3221 overall positive cultures in sHLD were 140 and 161 in dHLD.

The results of meta analysis using the random effect model showed no significant risk difference (RD) between the 2 procedures for duodenoscopes positive cultures ( $p = 0.53$ , RD 0.003 CI 95 % “- 0.007 - 0.013”).

**Conclusions** Double HLD offered no difference over single HLD for duodenoscope disinfection. an alternative strategy to overcome duodenoscopes transmitted infection is a big issue to be resolved.

► **Tab. 1** Data from selected studies

studies	sHLD (Cultures) +ve/all	dHLD (cultures) +ve/all
Bartles 2018	108/2798	127/3052
Rex 2018		200/1524
Snyder 2017	32/174	34/169
Bang 2016		30/329

### ePP60 INCIDENCE OF SEDATION-RELATED COMPLICATIONS AND RISK FACTORS ASSOCIATED WITH NON-ANESTHESIOLOGIST ADMINISTRATION OF SEDATION IN ENDOSCOPIC ULTRASOUND (EUS)-PROSPECTIVE STUDY

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DOI 10.1055/s-0040-1704457

**Aims** To investigate the incidence of adverse events related to non-anesthesiologist sedation during EUS and associated risk factors.

**Methods** Our prospective study included EUS investigations performed between 11/2018-10/2019 in two Austrian centers (Klagenfurt, St. Pönten). An “experienced” endosonographer has performed at least 225 EUS examinations including 50 interventions. Propofol and Midazolam were used for sedation and administered by special trained nurse or physician. Adverse events were defined according to the ESGE recommendations: hypoxemia (oxygen saturation < 90%) and hypotonia (systolic blood pressure < 90mmHg).

**Results** 554 (311 Klagenfurt+243 St.Pönten) EUS in 514 patients were analyzed (mean age 63.6±15.7 years,52.3% male). Non-anesthesiologist sedation was performed with a combination of Propofol und Midazolam in 95.6% of cases. The median dose(range) of Propofol and Midazolam were: 160 (20-760)mg and 3 (1-6)mg, respectively.

► **Tab. 1** Factors for sedation-related complications during EUS

Parameter	EUS without complications (n=520)	EUS with complications (n=34)	p value
(A)Total Propofol dose (mg), (B)Propofol dose/kg body weight (mg/kg), (C) Midazolam dose(mg)	(A)160(20-760), (B)2.4 ±1.4, (C)3 (1-6)	(A)140(20-440), (B)2.1 ±1.3, (C)3 (1-5)	(A)0.10, (B) 0.17, (C)0.24
(A)Age>75 years(%), (B) ASAIII	(A)24.4,(B) 25.7	(A)41.1,(B)50	(A)0.04,(B) 0.003
(A)Age (years), (B) Male gender (%), (C)BMI (kg/m2),	(A)63.3±15.4, (B)54.6, (C) 26.3±5.4,	(A)65.6±17.4, (B)50, (C) 27.2±5.6	(A)0.40, (B) 0.73, (C)0.40,
(A)EUS duration(min), (B) Interventional EUS(%), (C) EUS performed by trainees(%)	(A)23(3-71), (B)31.8, (C) 45.9	(A)20(3-60), (B)21.6, (C) 55.8	(A)0.30, (B) 0.29, (C)0.34

Sedation-related complications were observed in 34/554 (6.1%) of EUS: hypotonia in 24/554 (4.3%), hypoxemia in 10/554 (1.8%) and respiratory or hemodynamic instability in 7/554 (1.6%) of cases. One patient (0.18%) needed intubation and died in the intensive care unit. The presence of comorbidities and older age were associated with occurrence of sedation related complications (table).

**Conclusions** Sedation-related adverse events were registered in 6.1% of EUS in our prospective study, but only 1.6% of cases showed clinically significant impairment. The presence of comorbidities and older age were associated with higher incidence of hypoxemia and/or hypotonia. These patients should be evaluated more carefully for the need of an anesthesiologist during the procedure.

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Thursday, April 23, 2020

11:30 – 12:00

ERCP: Challenging access

ePoster Podium 5

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### ePP61 ERCP IS MORE CHALLENGING IN CASES OF ACUTE BILIARY PANCREATITIS THAN IN ACUTE CHOLANGITIS - A COHORT ANALYSIS OF THE HUNGARIAN ERCP REGISTRY DATA

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DOI 10.1055/s-0040-1704458

**Aims** Endoscopic retrograde cholangiopancreatography (ERCP) is recommended in acute biliary pancreatitis (ABP) when cholangitis or common bile duct obstruction is present. The inflammation of the pancreas and the surrounding tissues might make the procedure more difficult, however this topic is not widely studied. We compared the outcomes and difficulty of ERCP in ABP and in acute cholangitis (AC) in prospectively collected data of 7 Hungarian tertiary centers.

**Methods** 240 ABP cases and 250 AC cases without ABP were included. Previous papillotomy, altered gastroduodenal anatomy, and cases with biliary stricture were excluded. The rate of biliary access, advanced cannulation method, adverse events, cannulation and fluoroscopy time, as well as subjective difficulty were evaluated.

**Results** No difference was found between biliary cannulation rates in the two groups (95.8% vs. 97.2%). Significantly more pancreatic guidewire manipulation (31.3% vs. 17.2%;  $p < 0.001$ ) and prophylactic pancreatic stent use (19.6% vs. 4.8%;  $p < 0.001$ ) were seen in the ABP than in AC group. Moreover, longer cannulation time in the ABP patients (248 vs. 185 s;  $p = 0.043$ ) and higher fluoroscopy times (91 vs. 107 s) in the AC group were measured. There was no difference between the rate of adverse events of the groups. No significant difference was found in subjective difficulty.

**Conclusions** ERCP in ABP cases is more challenging than in AC but does not affect the outcomes in our registry data. The higher frequency of difficult biliary cannulation in the ABP patients warrants the involvement of an experienced endoscopist.

### ePP62 OUTCOMES OF PRECUT NEEDLE KNIFE FISTULOTOMY BASED ON THE ENDOSCOPIC MORPHOLOGY OF THE AMPULLA OF VATER AND OF THE SIZE OF BILE DUCT

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DOI 10.1055/s-0040-1704459

**Aims** Previous studies have suggested that the success and complications of precut needle knife fistulotomy (NKF) for achieving biliary access is largely dependent of the endoscopic morphology of the ampulla of Vater and also of the bile duct size. However, no study has addressed this topic. This study evaluated the outcomes of NKF on the basis of the morphology of the major papilla and of the size of the bile duct.

**Methods** This was a prospective multicenter study of all consecutive patients who were submitted to early NKF attempt for biliary access between August 2017 and August 2019. We evaluated the success rate and complications of NKF based on the following parameters: transverse and longitudinal measures of the papilla obtained using a visual method; diameter of the terminal CBD (t-CBD) measured 1 cm from the papilla using fluoroscopic images. Papilla were classified using a previously validated international classification of the major papilla into 7 categories. Outcomes were evaluated by a binary response regression models.

**Results** We included 275 patients submitted to NKF, median age 75 years (17-97), 158 women (57.45%). NKF were performed in: 46 flat type papillas (16.67%), 102 prominent tubular non-pleated (37.21%), 74 prominent tubular pleated (26.74%), 27 prominent bulging (9.69%), 3 intradiverticular (1.09%), 10 diverticular border (3.64%), 13 unclassified (4.65%). The cannulation rate was 97.07%. The post-ERCP complications rate were 9.09% ( $n = 25$ ), with pancreatitis rate = 6.18% ( $n = 17$ ) and no deaths. Cannulation success and complications were not significantly different among the seven papilla categories. In the regression model, cannulation and complications were not explained by the papilla morphology and the CBD diameter (Overall F-Test = 0.46;  $p < 0.80$ ).

**Conclusions** The biliary cannulation and post-ERCP complications are not associated with papillary morphology or the distal size of CBD. The decision to use NKF for biliary access should not be conditioned by the papillary morphology.

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Thursday, April 23, 2020

11:30 – 12:00

Upper GI: Resection techniques 3

ePoster Podium 6

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### ePP64 MODIFIED TECHNIQUE THROUGH OVERTUBE FOR ENDOSCOPIC VACUUM-ASSISTED CLOSURE IN PATIENTS WITH ESOPHAGEAL ANASTOMOTIC LEAK

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DOI 10.1055/s-0040-1704460

**Aims** Endoscopic vacuum-assisted closure (E-VAC) therapy is safe and effective for esophageal anastomotic leaks. However, repetitive exchange of sponge tube is technically demanding. We designed modified through overtube technique to make safe and comfortable for both endoscopists and patients.

**Methods** Intraluminal E-VAC was applied for post-operative thoracic esophageal leak in five cases of esophageal cancer. After overtube insertion, sponge tube was inserted through overtube keeping biopsy forceps inside nasogastric tube (NGT) and was positioned at intraluminal leak site under endoscopy guidance. Repositioning NGT from mouth to nostril was done through carrier tube and applied controlled negative pressure. Sponge tube change was done twice a week till complete closure of leak. Technical and clinical success rates were analyzed to evaluate the safety and the efficacy of this technique.

**Results** E-VAC was applied in five cases for mean 13.8 (range, 7-28) days by 3.2 (2-6) changes of sponge tube for 1.0 (0.5-2) cm sized anastomotic leaks. Mean procedure time was 14.9 (12-30) min and no complications related E-VAC therapy occurred. All patients discharged after 44.4 (14-95) days of hospitalization and two cases were treated with additional esophageal metal stents after 6 and 2 changes of sponge tubes.

**Conclusions** Modified technique of sponge tube insertion through overtube is effective and safe method for E-VAC therapy for patients with thoracic esophageal anastomotic leak.

### ePP65 EFFICACY AND SAFETY OF PERORAL ENDOSCOPIC MYOTOMY IN ACHALASIA PATIENTS WITH FAILED PREVIOUS INTERVENTION: A SYSTEMATIC REVIEW AND META-ANALYSIS

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DOI 10.1055/s-0040-1704461

**Aims** Peroral endoscopic myotomy (POEM) has become an emerging rescue treatment for recurrent or persistent achalasia after previous management. Therefore, we aimed to investigate the efficacy and safety of POEM in achalasia patients with failed previous intervention.

**Methods** We searched Medline, Embase, Cochrane and PubMed databases using the queries "achalasia," "peroral endoscopic myotomy," "Heller myotomy" and related terms on March 2019. Data on technical and clinical success, adverse events, Eckardt score and lower esophageal sphincter (LES) pressure were collected. The pooled event rates, mean difference (MD) and risk ratios (RR) were calculated.

**Results** A total of fifteen studies with 2276 achalasia patients were included in this analysis. Overall, the pooled technical success, clinical success and adverse events rate of rescue POEM were 98.0% [95% confidence interval (CI): 96.6-98.8%], 90.8% (95% CI: 88.8-92.4%) and 10.3% (95% CI: 6.6-15.8%), respectively. There were seven studies comparing the efficacy and safety of POEM for previous failed treatment with treatment-naïve patients. The RR for technical success, clinical success, adverse events rate were 1.00 (95% CI: 0.98-1.01), 0.98 (95% CI: 0.92-1.04), and 1.17 (95% CI: 0.78-1.76), respectively. Overall, there was significant reduction in pre- and post-Eckardt score (MD: 5.77,  $P < 0.001$ ) and LES pressure (MD: 18.3 mmHg,  $P < 0.001$ ) for achalasia patients with failed previous intervention after POEM procedure.

**Conclusions** In conclusion, POEM appears to be a safe, effective and feasible treatment for those who have undergone previous failed endoscopic or surgical intervention. It has similar outcomes in previously treated and treatment-naïve achalasia patients.

### ePP66 EVALUATION OF SLING FIBERS AND TWO PENETRATING VESSELS (TPVS) FOR GUIDING EXTENT OF THE TUNNEL AND MYOTOMY DURING POSTERIOR POEM IN A WESTERN COHORT

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DOI 10.1055/s-0040-1704462

**Aims** It has been described by Tanaka et al, that the TPVs are a good landmark to end submucosal tunneling and guide myotomy to spare the sling fibers (inner oblique muscle fibers) during posterior POEM.

Our aim was to study and characterize the presence of the TPVs in a western cohort of patients undergoing posterior POEM

**Methods** Clinical, anatomical and technical endoscopic data were collected prospectively from all consecutive cases of posterior POEM performed by one endoscopist looking for the TPV between November 2018 and November 2019.

TPVs were defined as those branches from the left gastric artery found in posterior wall of gastric cardia, with first vessel immediately after passing GEJ and the second a few centimeters distally, as described by Tanaka et al.

Gastroesophageal junction landmarks used were: distance+narrowing area followed of expansion of submucosal space, presence of spindle veins or double scope translumination.

Intraprocedural X-ray was also used in cases of sigmoid esophagus.

**Results** 18 posterior POEM were performed, 47% males, mean age 57 (27-80). Technical and clinical success were 100% (minimum 30 days follow-up) without major complications.

Cases included 4 sigmoid esophagus, 3 with previous Heller, 5 with previous balloon dilation, 6 cases of type 3 achalasia. Mean procedural time 69 minutes (43-112).

TPVs were identified in 14 cases (77%).

The first vessel was immediately to 1 cm distal to the narrow GEJ, at 5 or 6 o'clock, and the second vessel usually 2cm distal, at 5 or 4 o'clock. Sling fibers, when identified, were seen as internal oblique fibers running longitudinal at the left side of the TPVs.

**Conclusions** TPVs seem to be easy to identify in a western population.

They seem to be good indicator of the optimal distal extent of posterior POEM, and to guide myotomy to preserve gastric oblique fibers, potentially reducing the incidence of postPOEM reflux.

Thursday, April 23, 2020

ESD 3

11:30 – 12:00

ePoster Podium 7

### ePP67 CHOICE OF RESECTION TECHNIQUE FOR COLORECTAL LESION: SHOULD WE USE ENDOSCOPIC CHARACTERIZATION OR BIOPSY OF THE LESION?

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DOI 10.1055/s-0040-1704463

**Aims** Colorectal neoplasias larger than 2 cm must be treated with a different technique according to their histology. The objective of this study is to compare the effectiveness of endoscopic characterization, non-directed and directed biopsy in predicting the histology.

**Methods** lesions > 2 cm resected En bloc by endoscopy or surgery were prospectively included, characterized, biopsied twice (undirected and directed on the more pejorative area) and blindly analyzed by pathologist. We compared characterization versus directed and non-directed biopsies.

**Results** In total, 61 lesions were resected endoscopically or surgically during the study. Among the 3 SSL, the endoscopic prediction CONECCCT IS and biopsies were accurate in all cases (100%). For the 34 adenomas, endoscopic prediction was CONECCCT IIA in 6 cases (17.7%) and CONECCCT IIC in 28 cases (82.3%), while the biopsy responded adenoma in 34 cases (100%). For the 10 histologically confirmed superficial adenocarcinomas, endoscopic prediction was CONECCCT IIA in 1 case (10%), CONECCCT IIC in 7 cases (70%) and CONECCCT III in 2 cases (20%, 1 adenocarcinoma sm 450 microns and 1 adenocarcinoma m3) while the biopsy diagnosed cancer in 2 cases (20%) whether or not it was directed. Finally, among the 14 deep adenocarcinomas, endoscopic prediction was CONECCCT III in 13 cases (92.8%) and CONECCCT IIC in 1 case (7.2%, submucosal invasion over 1065 microns) while directed and undirected biopsy diagnosed cancer in 12 cases (85.7%) and 6 cases (42.9%) without predicting the depth. The sensitivity of the CONECCCT IIC classification for superficial and deep cancers was respectively 70.0% and 92.9% and its specificity 43.1% and 95.7%. The sensitivity of the biopsy for superficial cancers was respectively 20.0% and the specificity is 76.5%. Biopsy never provided any information on the deep or superficial adenocarcinoma.

**Conclusions** Endoscopic prediction is superior to biopsies in predicting the presence of superficial or deep adenocarcinoma.

### ePP68 USEFULNESS OF A CLUTCH CUTTER FOR SURGEONS WITH EXPERIENCE OF PERFORMING COLORECTAL ENDOSCOPIC SUBMUCOSAL DISSECTION IN LESS THAN 100 PATIENTS AT AN INSTITUTION WITHOUT TUTORS

**Authors** Abiko S, Oda S, Meno A, Shidou A, Yoshida S, Yoshikawa A, Harada K, Kawagishi N, Sano I, Oda H, Miyagishima T

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DOI 10.1055/s-0040-1704464

**Aims** The usefulness of a clutch cutter (CC), a scissor-type knife, for colorectal endoscopic submucosal dissection (CESD) has recently been reported. However, there has been no study on the usefulness of a CC for surgeons with experience of performing CESD in less than 100 patients at an institution without tutors. Therefore, the usefulness of a CC for such surgeons was examined in the present study.

**Methods** Between April 2018 and August 2019, 76 patients underwent CESD in Kushiro Rosai Hospital. Of those patients, 69 were included in this study.

Surgeon: CESD was previously performed in 24 patients under the guidance of tutors at other institutions. When using CC, paper cutting technique (Abiko S et al. Endoscopy, 2019 October) is occasionally used.

**Results** A comparison of 39 patients who underwent the procedure using needle-type knives and 30 patients who underwent the procedure using the CC showed that the resection time was significantly shorter in the latter group (median: 145 vs. 81 min). The median resection speeds for each of the nine patients in blocks 1 to 7 were 2.5, 3.4, 3.2, 3.2, 3.2, 5.5 and 5.5 cm<sup>2</sup>/h. In blocks 5-6 (45-54 patients), there was an increased resection speed of 2.3 cm<sup>2</sup>/h for one block, just overlapping with the time of complete transition for use of the CC. Even in the moving average graph of the nine patients in blocks 5-6, the mean resection speed was  $\leq 4$  cm<sup>2</sup>/h until the 45th patient; however, after the 54th patient, the mean resection speed was  $\geq 5.5$  cm<sup>2</sup>/h. There were differences between the two groups in frequencies of microperforation (7.6% vs. 0%) and muscular injury (12.8% vs. 3.3%).

**Conclusions** Even at an institution without tutors, the use of the CC by surgeons with experience of performing CESD in less than 100 patients increases the learning curve.

### ePP69V SUBMUCOSAL TUNNELLING ENDOSCOPIC RESECTION (STER) OF A RECTAL LEIOMYOMA

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DOI 10.1055/s-0040-1704465

A 45-year-old male patient performed colonoscopy for abdominal pain. A rectal subepithelial lesion of 10 mm was identified and further characterized with endoscopic ultrasound as an hypoechoogenic homogeneous well-defined lesion of the second layer, measuring 9.1x10.8 mm. Considering the diagnostic possibility of gastrointestinal stromal tumour, the lesion was resected using a submucosal tunnelling endoscopic resection technique. A 20 mm incision was made under the lesion, after submucosal injection. A submucosal tunnel was created dissecting the submucosal fibers and exposing the lesion. *En bloc* resection of the lesion was then performed. Finally, the incision was closed using hemostatic clips.

Thursday, April 23, 2020

Colon screening and surveillance 1

11:30 – 12:00

ePoster Podium 8

### ePP70 LOW DIAGNOSTIC YIELD OF STANDARD DEFINITION SURVEILLANCE COLONOSCOPY FOR PATIENTS WITH LYNCH SYNDROME

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DOI 10.1055/s-0040-1704466

**Aims** Lynch syndrome (LS) is the most common form of inherited colorectal cancer. Surveillance colonoscopy using high definition (HD) systems is recommended by ESGE guidelines. Our aim was to evaluate historical endoscopic surveillance for LS using standard definition (SD) colonoscopy.

**Methods** This was a retrospective cohort study of patients with genetically confirmed LS. Using our prospectively maintained family cancer database, we identified patients who had undergone surveillance colonoscopy over a five-year period. Significant lesions were defined as adenoma or sessile serrated lesions (SSL) of any size and were reviewed by a specialist GI pathologist.

**Results** Eighty-three patients underwent surveillance colonoscopy at our hospital within the study period. Median age was 44 (range 28-69) and 42% were male. Caecal intubation and rectal retroflexion rates were 100%. Bowel preparation was excellent or adequate in 90%. Mean withdrawal time was 11.6 minutes. Anti-spasmodics were used in 7%. Twenty-seven polyps were identified in 15 patients. All polyps were diminutive (n=7) or small (n=20). Twenty-six polyps were removed by cold forceps (n=17, 65%), cold snare (n=8, 31%) and snare diathermy (n=1, 4%). Five polyps were low-grade adenomas (19%), 4 (16%) were SSLs with (n=2) and without dysplasia, 13 were hyperplastic (50%). Median age of patients with adenoma or SSLs detected was 51.9 years. Adenoma or SSLs were detected more frequently in MLH1 and MSH2 than other genotypes but this was not statistically significant (12% vs. 6%, p=0.67). No patients developed colorectal cancer during the period of follow-up. Narrow-band imaging was used in 11% while no procedures used dye-based chromoendoscopy.

**Conclusions** Historical diagnostic yields for surveillance using SD colonoscopy in LS are low. Adoption of advanced endoscopic imaging techniques may improve lesion characterisation and dysplasia yields. Larger multicentre

prospective studies are required to determine whether this has an impact upon cancer diagnoses and mortality.

### ePP71 HIGH RISK PATIENTS SUSPICIOUS OF LYNCH SYNDROME; ARE THEY BEING CLASSIFIED CORRECTLY AND RECEIVING APPROPRIATE SURVEILLANCE?

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**DOI** 10.1055/s-0040-1704467

**Aims** Lynch Syndrome (LS) is diagnosed by genetic testing of mismatch repair genes. However, before genetic testing, patients are categorised by clinical criteria (Amsterdam/Bethesda). The Mater Hospital (MMUH) cohort of patients without genetic testing but meeting the clinical criteria are categorised as 'LS Unconfirmed' in the high-risk database and surveillance is arranged accordingly.

1. To evaluate patients categorised as 'LS unconfirmed' in the MMUH familial CRC clinic.
2. Critically examine the accuracy of this categorisation and whether all patients are under the same surveillance.
3. To assess the benefits of switching to more recent guidelines for surveillance.

**Methods** Retrospective review of the pedigrees of all patients documented as 'LS Unconfirmed' in the MMUH high risk database to confirm risk level. Reclassification of patient's risk levels from the original protocol to the newer Royal Marsden guidelines.

**Results** N= 184. In the case of 30 patients the pedigree was absent. 9 patients were dead. 2 patients were Gene+, 2 patients Gene-. 2 patients had polyposis syndrome. Only 60% had a patient with a first degree relative (FDR) with CRC. 9.8% had an FDR with diagnosed LS. 64.7% compliant with surveillance. 49% having yearly/2 yearly colonoscopies and 25% having yearly/2 yearly OGDs. Recategorisation saw most patients move to a 5 yearly surveillance plan starting at different ages, while 28 required one off colonoscopies and 11 were of average risk.

**Conclusions** New guidelines redefine patient's level of risk and significantly change interval for surveillance. This study highlights the need to adopt international guidelines and updates to guarantee appropriate surveillance.

### ePP72 PREVALENCE AND RISK FACTORS FOR PRENEOPLASTIC AND NEOPLASTIC LESIONS OF THE COLON AND RECTUM IN PATIENTS UNDER 50 REFERRED FOR COLONOSCOPY

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**Institute** 1 Fondazione IRCCS Policlinico San Matteo, Pavia, Italy; 2 Fondazione IRCCS Policlinico San Matteo, Digestive Endoscopy, Pavia, Italy; 3 Fondazione IRCCS Policlinico San Matteo, Biostatistics and Clinical Epidemiology, Pavia, Italy  
**DOI** 10.1055/s-0040-1704468

**Aims** The American Cancer Society reduced the age of CRC screening from 50 to 45 years in 2018 in response to a recent increase in early onset-CRC<sup>1</sup>. Our primary aim was to analyse the prevalence of colorectal preneoplastic and neoplastic lesions in patients under 50 referred for colonoscopy in our center. The secondary aim was to identify possible risk factors for the development of these lesions.

**Methods** We retrospectively collected data from 1882 patients under 50 referred for colonoscopy (Jan-2015 and Dec-2018). Of these, 104 (5.5%) were excluded due to the presence of a known diagnosis of CRC hereditary syndrome, for lack of important data, or for poor bowel preparation.

**Results** The cumulative incidence rate for adenoma was 27.5 per 1000 person-years and 3.8 per 1000 person-years for adenocarcinoma. Notably 13/27 patients (48%) with adenocarcinoma had a metastatic disease at the time of diagnosis. Adenomas have been identified mainly in the colon, while adenocarcinomas arose in most cases in the rectum (13/27,48,15%;p=0,009). Age≥40 was the main risk factor (OR 2.66;CI 1,69-4,18;p=0,000) for both adenoma (160/196 patients, 81.62%; mean age 43,5(± 5,7)) and adenocarcinoma (20/27 patients, 74.07%;mean age 42,5(±6,1)). Smoking seemed to have no role (p=0.772). IBD seemed to be protective for eoCRC. The presence of alarm symptoms was statistically significant at bivariable analysis for adenocarcinoma only (OR 3.60; CI 1,49-9,22; p=0,005). Having multiple gastrointestinal symptoms had a wide 95% confidential interval (OR 19.85; CI 2,64-149,42; p=0,004).

**Conclusions** We found a high cumulative incidence of both adenomas and eoCRC, this latter occurring more common in patients aged 40-49 without apparent risk factors, and being more aggressive. The presence of alarm symptoms or multiple symptoms generally lead to a late diagnosis. Hence, in the absence of stronger and more convincing evidence, it is reasonable to assume to benefit from an earlier screening strategy.

Friday, April 24, 2020

09:00 – 09:30

Upper GI: Management of complications 2 ePoster Podium 1

### ePP73 ENDOSCOPIC SUCTION CHAMBER TO TREAT COMPLEX DUODENAL LEAKS AFTER UPPER GASTRO-INTESTINAL SURGERY: A SINGLE CENTER EXPERIENCE

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**DOI** 10.1055/s-0040-1704469

**Aims** Leaks from duodenal stump after upper-gastrointestinal surgery are difficult to manage and usually require re-do surgery.

Vacuum-assisted drainage has been used in endoscopic management of colorectal, esophageal anastomotic leaks and duodenal perforations. However, it has never been reported to treat leaks from duodenal stump.

We report our single-center experience on endotherapy of duodenal stump leaks after upper-gastrointestinal surgery using an innovative approach.

**Methods** Between January 2016 and December 2018, 5 consecutive patients (M:F 3:2, mean age 43) were referred to our unit for complex dehiscence of the duodenal stump. Previous upper-gastrointestinal surgery included 3 subtotal gastrectomy with Roux-en-Y reconstruction and one with Braun reconstruction; one gastric bypass.

All underwent a re-do surgery that failed.

We created a *Suction Chamber*: a fully-covered SEMS was inserted with the distal crown into peritoneum through the duodenal leak. Subsequently, common bile duct and main pancreatic duct were endoscopically drained inserting a biliary and a pancreatic stent through the meshes of the enteral stent. An aspirative naso-duodenal tube, with the tip 1-2 cm outside the enteral stent's distal crown was placed. The surgical drainage was pulled 3 cm away from the leak to favor the peritoneal-enteral pressure gradient.

**Results** Technical and clinical success were achieved in all the patients (5/5 100%).

Mean duration of aspiration was 36 (23-103) days. An abdominal CT scan was generally performed 2 days after the procedure (to verify the reduction of intraperitoneal fluid collections) and 30 days after to decide to stop the aspiration. Stent removal was scheduled at 6 months. No mortality neither long-term adverse events related to the procedures were reported.

**Conclusions** Endotherapy for duodenal stump leaks is feasible and effective in tertiary referral endoscopy centers with expertise in management of post-surgical complications. Our *Suction Chamber* offers the possibility to treat complex leaks especially if re-do surgery failed.

### ePP74 ENDOSCOPIC TREATMENT OF EARLY LEAKS AND STRICTURES AFTER LAPAROSCOPIC ONE ANASTOMOSIS GASTRIC BYPASS

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**DOI** 10.1055/s-0040-1704470

**Aims** To summarize our experience with endoscopic treatment of laparoscopic one anastomosis gastric bypass complications.

**Methods** This is a retrospective study of consecutive patients referred to our hospital from 2015 to 2017 with post laparoscopic one anastomosis gastric bypass complications. Therapy was tailored to each case, including fully covered self-expandable metal stents, fibrin glue, septotomy, internal drainage with pigtail stents, through-the-scope and pneumatic dilation. Success was defined as resuming oral nutrition without enteral or parenteral support or further surgical intervention.

**Results** Nine patients presented with acute or early leaks: 5 (56%) had staple-line leaks, 3 (33%) had anastomotic leaks and 1 (11%) had both. All were treated with stents. Adjunctive endoscopic drainage was applied in 4 patients (44%). Overall 5 patients (56%) with acute/early leaks recovered completely, including all 3 patients with anastomotic leak and the patient with both leaks but only 1/5 with staple line leak (20%). Complication rate in the leak group reached 22%. Eight patients presented with strictures, 7 at the anastomosis and one due to remnant stomach misalignment. All anastomotic strictures were dilated successfully. However, the patient with the pouch stricture required conversion to Roux-en-Y gastric bypass after 3 failed attempts of dilatation.

**Conclusions** Endoscopic treatments of laparoscopic one anastomosis gastric bypass complications are relatively effective and safe. Anastomosis-related complications are more amenable to endoscopic treatment compared to staple line leaks.

### ePP75V MASSIVE GASTRIC BLEEDING IN A BYPASSED ANATOMY: A CHALLENGING DIAGNOSTIC AND THERAPEUTIC SCENARIO

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**DOI** 10.1055/s-0040-1704471

We present the case of a 29 year male who had a mini-gastric bypass (one anastomosis gastric bypass) 3 years ago.

He presented to the emergency room after a syncope episode, he had had melena for 2 days. On arrival he was found with pallor, tachycardia and a crystalloid responsive hypotension, as well as a moderate anemia (Hb 9 g/dL, after being transfused 3 RBC units in a local hospital).

Upper endoscopy, ileo-colonoscopy, computed tomography angiography and VCE (delivered in the efferent loop) did not show bleeding site. So we performed a double-balloon enteroscopy to explore the bypassed section.

Thursday, April 23, 2020  
ERCP: Leaks and blood

14:30 – 15:00  
ePoster Podium 2

### ePP76 IMAGING FINDING OF SMALL STONES IS ASSOCIATED TO A HIGHER RISK OF UNNECESSARY ERCP: RESULTS OF A RETROSPECTIVE, MULTICENTER STUDY

**Authors** Andreozzi P<sup>1</sup>, Nucci GD<sup>2</sup>, Devani M<sup>2</sup>, Redaelli D<sup>2</sup>, Schettino M<sup>2</sup>, Iuliano D<sup>3</sup>, Gagliardi M<sup>4</sup>, Maurano A<sup>4</sup>, Bottiglieri ME<sup>1</sup>, Paspatis G<sup>5</sup>, Dinelli M<sup>6</sup>, Manes G<sup>2</sup>

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**DOI** 10.1055/s-0040-1704472

**Aims** Common bile duct stones (CBDS) can migrate spontaneously through the duodenal papilla. ERCP for small CBDS may be thus unnecessary and is likely to carry a significant rate of complications. We aim at retrospectively evaluating the rate of spontaneous stone passage in patients with an imaging diagnosis of CBDS.

**Methods** We conducted a retrospective multi-center analysis of patients undergoing ERCP for CBDS in a 12-month period. ERCPs with failed biliary cannulation were excluded. Data regarding patients' characteristics, imaging findings and ERCP procedure were analysed.

**Results** 532 patients (69.5±17.5 years, female 55.6%) were included in the analysis. Imaging revealed presence of sludge in 34 patients (6.4%), single stone in 245 patients (46.1%), 2 or more stones in 253 patients (47.5%). At ERCP, CBDS were not found in 91 patients (17.1%). Pancreatitis as indication (OR:3.661 C.I.95%:1.441-9.301), imaging finding of sludge (OR:3.582 C.I.95%:1.439-8.916), < 5 mm stones (OR:2.943 C.I.95%:1.671-5.185) and interval >7 days between imaging and ERCP (OR:1.982 C.I.95%:1.020-3.849) were associated to the absence of CBDS at ERCP. Absence of CBDS was observed in 26% of patients with sludge or ≤5 mm stones and 10.6% of those with >5mm stones at imaging (p< 0.001). In patients with imaging finding of ≤ 5 mm stones, the rate of negative ERCP increased according to the time occurring from the imaging diagnosis and ERCP (< 7 days:22.8%, 7-30 days:41.4%, >30 days:45.5%; p=0.036). No significant differences in terms of complications was observed between the two groups

**Conclusions** Small CBDS may migrate spontaneously in up to 45% of patients. Diagnosis of sludge, < 5 mm stones and a delay in ERCP >7 days were predictive factors for spontaneous migration. We suggest that CBDS < 5 mm should not undergo immediate removal. Prospective studies are needed to confirm these results and demonstrate the safety of a conservative management in this setting.

### ePP77 ENDOSCOPIC MANAGEMENT OF BILE LEAKS: A SYSTEMATIC REVIEW AND META-ANALYSIS

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**DOI** 10.1055/s-0040-1704473

**Aims** The endoscopic treatment of biliary leaks is based on a variety of techniques, including sphincterotomy, stenting, a combination of both techniques,

or placement of a nasobiliary drainage. We performed a systematic review and meta-analysis to define the best strategy.

**Methods** We searched MEDLINE/PubMed, EMBASE, until January 2019 for randomized clinical trials and observational studies. Data were extracted on procedure, success and complication rate. Risk of bias was assessed. A network meta-analysis was performed to compare sphincterotomy alone vs. stenting alone vs. combination treatment. Stenting was further stratified into leak-bridging and short stenting

**Results** Overall of 11 studies (4 RCTs and 7 prospective studies) for a total of 650 patients were included. Compared with sphincterotomy alone, the combination of sphincterotomy with leak-bridging stenting had the highest success rate (risk ratio [RR] 1.15, 95% [CI] 0.97-1.50), followed by leak-bridging stenting alone (RR 1.10, 95%CI 0.84-1.44). For non-bridgeable leaks, stenting alone had a higher success rate than sphincterotomy alone (RR 1.07, 95 %CI 0.72 - 1.40). The combination of short stents with sphincterotomy had no added benefit (RR 0.94, 95 %CI 0.49 - 1.29). Overall quality of the included studies was considered to be moderate

**Conclusions** We suggested, according to our results, sphincterotomy with stenting if the biliary leak can be bridged, while stenting alone (short stent) may be preferred in case of failure to bridge the leak, in order to avoid sphincterotomy-related complications. Larger randomized studies are needed to confirm these findings.

### ePP78 CONVENTIONAL ENDOSCOPIC SPHINCTEROTOMY VS. TINY ENDOSCOPIC SPHINCTEROTOMY FOLLOWED BY BALLOON DILATION AND THE RISK OF POST-CPRE HEMORRHAGE IN PATIENTS WITH PERIAMPULAR DIVERTICULUM

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DOI 10.1055/s-0040-1704474

**Aims**

- Determine the rate of post-ERCP hemorrhage in patients with periampular diverticulum (papilla located inside or on the margin of a duodenal diverticulum).
- Determine the efficiency and safety analysis.

**Methods** Descriptive and retrospective study. 1,333 ERCP procedures, performed consecutively, between January 2014 and April 201. It is a single-center study in a tertiary care center. All cases with periampular diverticulum and naïve papilla were included. Conventional endoscopic sphincterotomy is defined to which the size of the papilla cut is conditioned according to the size of the lithiasis facilitating its extraction. As for another group, a millimeter cut was performed in order to mark the direction in which the fibers will break when the papillary balloon dilation is performed [up to 15 mm].

**Results** In 235 cases (17.6%) the presence of periampular diverticulum was identified. Predominantly males (60.7%). Age: Mean 78.2 years (Range: 29-96). The main indication was choledocholithiasis (78.7%). One group performed conventional sphincterotomy (148 cases) and other group performed a tiny sphincterotomy followed by balloon dilation (52 cases). A higher rate of post-ERCP hemorrhage was identified in the conventional sphincterotomy group compared to tiny sphincterotomy followed by balloon dilation (5.4% vs. 1.9%, p=0.010). We did not find significant differences in terms of technique success (87.5% vs. 100%, p = NS) nor of post-ERCP pancreatitis (6.8% vs. 7.7%, p=0.017).

**Conclusions** Tiny sphincterotomy followed by balloon dilation seems to be a safer procedure with similar effectiveness in patients with periampular diverticulum.

Thursday, April 23, 2020

Biliary diagnosis

14:30 – 15:00

ePoster Podium 3

### ePP79 THE YIELD OF FOCUSED ENDOSCOPIC ULTRASOUND IN PATIENTS WITH UNEXPLAINED DILATATION OF COMMON BILE DUCT AND OR PANCREATIC DUCT AND CORRELATION WITH LIVER FUNCTION TESTS

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DOI 10.1055/s-0040-1704475

**Aims** To investigate factors that are associated with positive findings at EUS in patients with dilated ducts and correlation with LFTs.

**Methods** Patients with EUS for unexplained dilated CBD and/or PD from 2012 to 2016 with available LFTs were included. CBD dilatation was defined as CBD diameter greater than 7mm with PD diameter more than 4 mm in the head and 3 mm in the body and tail was considered dilated. LFTs checked were bilirubin, ALT (alanine aminotransferase), ALKP(alkaline phosphatase) and GGT (gamma-glutamyl transferase). Elevated LFTs were defined as elevation of anyone of the above .

**Results** Among 2179 EUS procedures, 404 patients met the study criteria. 58.4% were female with mean age of 61.72±15.11 and 293/404 had elevated LFTs. 74% of patients had more than one imaging modality before EUS. EUS found a cause of dilated duct in 57% of total cases. Males (65%, p=0.008), patients with dilated CBD and PD (67% p=0.009), elevated bilirubin (72.6% p=0.000) and elevated AKLP (62.3% p=0.049) were associated with positive findings on EUS.

In patients with CBD dilatation alone, elevated bilirubin as compared to normal bilirubin was associated with a positive finding on EUS (p< 0.027) (66% of cases). In those with CBD and PD dilatation, age over 60 years (p=0.000), raised bilirubin (p< 0.022) and Alkaline Phosphatase (p< 0.018) were associated with positive findings (78.2%, 81.6% and 76.6%respectively.) The predictors of positive findings on EUS in Multivariate analysis were: bilirubin (OR 2.07(CI 1.19-3.59) and male gender (OR 1.7(CI 1.14-2.25)).

**Conclusions** EUS detects pathology missed on prior radio logical imaging in 57% of patients with dilated CBD and or PD especially in males and with raised bilirubin. We recommend early access to a diagnostic EUS in the diagnostic pathway of patients with dilated CBD and or PD.

### ePP80 ASSESSMENT OF DIAGNOSTIC ACCURACY OF ENDOSCOPIC ULTRASOUND IN GALLBLADDER LESIONS

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DOI 10.1055/s-0040-1704476

**Aims** Endoscopic ultrasound (EUS) has been widely used in the diagnosis of gallbladder lesions. The purpose of this study was to determine whether there was a difference in diagnosis rate according to gallbladder lesions.

**Methods** 82 patients who underwent laparoscopic cholecystectomy after EUS at our institution were included. The pathologic diagnosis and EUS were compared. Pathological diagnosis was classified by score (score 1, benign polyp; score 2, chronic cholecystitis; score 3, adenomyomatosis; score 4, adenoma; score 5, carcinoma). EUS was classified as pathological diagnosis.

**Results** Among 82 patients, the pathologic score 1 was 13 (15.9%), 2 was 36 (43.9%), 3 was 22 (26.8%), 4 was 3 (3.7%), and 5 was 8 (9.8%). EUS was 19 (23.2%), 5 (6.1%), 44 (53.7%), 7 (8.5%), 7 (8.5%) in order. The absolute difference between the two diagnostic scores is 0 to 4, with 0 being 38 (46.3%),

1 being 34 (41.5%), 2 or more being 10 (12.2%). Among the 0 of the absolute difference between the two diagnostic scores, diagnostic accuracy of benign polyp was 76.9% (10/13), chronic cholecystitis 11.1% (4/36), adenomyomatosis 86.4% (19/22), adenoma 33.3% (1/3), and carcinoma 57.1% (4/8). Among 2 or more of the absolute difference, 3 patients had cholesterol polyps (3/13, 23.0%), 4 patients had chronic cholecystitis (4/36, 11.1%), and 2 patients had adenomyomatosis (2/22, 9.0%) and 1 carcinoma (1/8, 12.5%).

**Conclusions** The diagnostic accuracy of EUS for each gallbladder disease varied. The diagnostic accuracy for benign polyps, adenomyomatosis and carcinoma was high, while the accuracy for chronic cholecystitis and adenoma was low.

## ePP81 ENDOSCOPIC ULTRASONOGRAPHY GUIDED FINE-NEEDLE ASPIRATION FOR DISTAL COMMON BILE DUCT TUMORS AND STRICTURES: MORE EFFECTIVE THAN ERCP AND BRUSH CYTOLOGY

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DOI 10.1055/s-0040-1704477

**Aims** We aimed to determine the diagnostic yield of EUS and EUS guided fine-needle aspiration for distal CBD lesions causing obstructive jaundice as diagnostic yields with ERCP and brush cytology is not optimal.

**Methods** All patients with dilated CBD and altered liver function tests, dilated CBD with a suspected stricture, mass in distal CBD on CECT/MRI abdomen were studied. Imaging did not confirm the characteristic of the lesions assessed. EUS with FNA was done with a 25 G needle for histopathological examination. The success rate of identifying the lesion, positive pick up on FNA and diagnostic accuracy were analysed.

**Results** 93 patients (mean age: 62.8 ± 12.7 years; male: 33) were examined between 2015 and 2019, and included in the study. Of the 93 included patients, 48 patients (53.3%) had malignant lesion, 28 patients (30.1%) had non malignant lesion (benign, dysplastic, inflammatory), 15 patients (16.1%) had atypical or suspicious findings suggestive of malignancy, 2 (2.2%) patient had unsatisfactory material which could not be concluded.

Thus, endoscopic ultrasonography guided fine-needle aspiration in distal CBD obstructing lesions was conclusive for either malignancy or inflammatory combined in 76 of 93 patients (81.7%). Compared to the brush cytology literature which has a pick up rate of 50 percent in distal masses, EU FNA scores high in clinching the diagnosis.

Mild pancreatitis was noted in three patients (3.8%) which was managed conservatively. No other major adverse events were noted.

**Conclusions** Endoscopic ultrasonography guided fine-needle aspiration found to be efficacious for evaluating suspected distal CBD lesions with high sensitivity and PPV. No major complications were noted except mild pancreatitis in 3 cases.

Thursday, April 23, 2020

Safety of colonoscopy

14:30 – 15:00

ePoster Podium 4

## ePP82 CONSENTING FOR ENDOSCOPIC PROCEDURES - HOW CAN WE OPTIMISE THE PROCESS?

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DOI 10.1055/s-0040-1704478

**Aims** The British Society of Gastroenterology (BSG) consent guidelines advise that good consenting practice is an important part of the Global Rating Scale (GRS) assessment of UK endoscopic units. The high volume of outpatients undergoing elective endoscopic procedures can lead to insufficient consent

► **Tab. 1** Consent process - consultant vs. nurse endoscopist

	Consultant (n=49)	Nurse endoscopist (n=21)	*p value
Legibility (n, %)	33 (67.3)	21 (100)	p = 0.01
Missed pathology (n, %)	5 (10.2)	21 (100)	p < 0.05

documentation. We aimed to review our consent process and identify factors where it could be optimised.

**Methods** We performed a one-week prospective study at a London-based district general hospital during May 2019. Data was collected for 70 consecutive patients that underwent elective endoscopy: Gastroscopy (n=20), Colonoscopy (n=20), Gastroscopy + Colonoscopy (n=20) and Flexible sigmoidoscopy (n=10). In our Trust, consent forms for gastroscopy and colonoscopy are pre-printed whilst those for a combined gastroscopy + colonoscopy procedure and flexible sigmoidoscopy are manually completed. We compared the completion of consent forms for each procedure and the source of information provided to the patients prior to it (outpatient discussion, telephone call or written information).

**Results** Of the 70 patients undergoing endoscopy, 66 (94.3%) felt they received adequate information prior to the procedure either from a written source or telephone call. Sedation risk was documented in 85% receiving conscious sedation.

**Conclusions** Despite inadequate consenting for missed pathology and risks of sedation in 1 in 5 patients, almost all patients felt they received adequate information for their procedures. Manually filled consent forms were not completed to the standards of pre-filled consent forms. Nurse endoscopists were significantly more likely to write legibly and consent for missed pathology than consultant gastroenterologists. We advise that pre-filled consent forms be introduced for all commonly performed endoscopic procedures and that written consent for 'missed pathology' is included in all cases.

## ePP83 IS COLONOSCOPY GETTING SAFER? RESULTS OF POST POLYPECTOMY BLEEDING (PPB) RATES IN A REGIONAL NHS BOWEL CANCER SCREENING PROGRAMME (BCSP)

**Authors** Garvey T<sup>1</sup>, Hadjinicolaou A<sup>1</sup>, Swain D<sup>2</sup>, Redmond P<sup>3</sup>, Hall N<sup>2,4</sup>, McDermott E<sup>1</sup>

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DOI 10.1055/s-0040-1704479

**Aims** To establish rates of PPB in our region of the BCSP and whether there has been a reduction in PPB over a 10-year period.

**Methods** Data was analysed retrospectively from the BCSP database and hospital systems (January 2008 - December 2018). Patients were categorised as having minor, intermediate or major severity PPB (as per BCSP standardised definitions). Regression analysis was performed in STATA on PPB rates (number of cases of PPB per procedure per year). Overall and subtype rates were compared, with statistical significance being p < 0.05.

**Results** 9,587 BCSP colonoscopies were performed from 2008-2018. Overall there were 58 episodes of PPB; 31 minor and 27 intermediate severity, but no major episodes.

There was a trend towards an overall reduction in PPB (coeff -0.045,  $p=0.14$ ). Comparing period 1 (2008-2012) to period 2 (2013-2018) there was a reduction in bleeding rates from a mean of 0.8%/annum to 0.5%/annum,  $p=0.06$ . Regression analysis using intermediate bleeding rate as the outcome and individual years as covariates, resulted in a significant regression coefficient ( $p=0.025$ ) with an average decrease in intermediate bleeding of ~5% per year.

Our BCSP endoscopists have remained quite constant over this period, with 2 endoscopists performing the majority of the procedures. A single screening nurse practitioner monitors and reports all adverse events, ensuring a consistency in reporting over time.

**Conclusions** While there was no statistically significant reduction in overall PPB, there was a statistically significant reduction in intermediate severity PPB. Given that intermediate severity bleeding results in intervention such as transfusion and endoscopy, this reduction is a significant patient safety improvement. This may be due to factors such as a change in diathermy practice and/or equipment over time. Further prospective research into PPB rates within BCSP nationally, and ideally outside of BCSP, is required and the factors that lead to its reduction over time.

#### ePP84 ASSESSMENT OF THE APPROPRIATENESS OF COLONOSCOPY IN AN OPEN ACCESS ENDOSCOPY UNIT: REFUSE OF INADEQUATE ONES AND PRIORITIZATION OF THOSE ACCEPTED

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DOI 10.1055/s-0040-1704480

**Aims** Overuse of colonoscopy (CS) is an increasingly recognized problem. However there are few publications describing tools to reduce the realization of CSs non-adherents with the clinical guidelines.

##### Objectives

- Detect CSs referral from Primary Care (CS-PC) received in our Unit that do not meet criteria of European and Spanish Guidelines.
- Definitely deny non-adherents request forms or temporarily those with insufficient data.
- Detect CSs requests in individuals with alarm symptoms
- Deny those for symptoms already studied in < 50 years old patients and CS < 3 years earlier (SS).

Estimate the repercussion of this intervention on waiting times

**Methods** We met with PC doctors and inserted guidelines into the intranet. Systematic evaluation of CS-PC requests received (March 2011-December 2018). We complete data with the Electronic Clinical Record (ECR). We collected affiliation, priority, indication, FH-CRC, previous CSs.

The denied CSs were collected in the ECR and were mailed to the doctor, explaining the reason for the refusal. A contact email was provided for contact us.

Accepted requests were classified into: Preferent (P), Conventional(C) and Surveillance (S).

Patient's written reclaims were collected.

**Results** 9,158 requests: 7,327 (80%) accepted (9.9% P, 38.1% C, 52% S) and 1,831 (20%) denied (1,291 definitely -14.1% of all request- and 540 temporarily).

Cause of deny: 50.1% FH-CRC, 45.4% PPS and 4.5% SS.

Rate of rejected decreased from 18.5% (2011) to 8.6% (2018).

Written claims decreased from 25% (2011) to 16% (2018).

Prior to the intervention, average months delay for all CSs: 6 and after: 3 for C, 10 for S and 0.5 for P.

**Conclusions** 1- Review of CS-PC avoid a 14.1% unnecessary CSs, mainly by FH-CRC and PPS

2- Makes sense on the waiting list, prioritizing the CSs with alarm data although surveillance ones wait more

3- Physicians and patients' acceptance is good as long as a fluid communication is maintained.

Friday, April 24, 2020

Enteroscopy 1

09:00 – 09:30

ePoster Podium 5

#### ePP85 CLINICOPATHOLOGICAL FEATURES OF SMALL BOWEL MALIGNANCIES DIAGNOSED BY VIDEO CAPSULE ENDOSCOPY AND BALLOON-ASSISTED ENTEROSCOPY: A SINGLE CENTER EXPERIENCE

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DOI 10.1055/s-0040-1704481

**Aims** Small bowel malignancies often present a diagnostic challenge due to their relative rarity and nonspecific findings. However, technical developments in endoscopic instruments, including video capsule endoscopy (VCE) and enteroscopy, allow visualization of the entire small bowel. This study aimed to investigate the clinicopathological features of small bowel malignant cancers diagnosed by VCE and double-balloon enteroscopy (DBE) in a single tertiary center.

**Methods** We retrospectively analyzed VCE and DBE findings from Korea University Guro Hospital from January 2010 through September 2019.

**Results** A total of 510 VCE and 126 DBE exams was performed in 478 patients. Small bowel malignancies were diagnosed in 29 patients (15 males; mean age, 60.1 years; range, 38 to 81 years): 8 patients had lymphoma, 8 had primary adenocarcinoma, 7 had gastrointestinal stromal tumor (GIST), 5 had metastatic cancer, and 1 had neuroendocrine tumor (NET). Abdominal pain and obstructive symptoms were the most common findings in malignant lymphoma (8/8, 100%) and metastatic cancer (4/5, 80%). On the other hand, obscure gastrointestinal bleeding was the most common symptom of GIST (6/7, 85.7%) and adenocarcinoma (3/8, 37.5%). Among the 8 cases of lymphoma, 5 were diffuse large B cell lymphoma, 2 were mucosa-associated lymphoid tissue lymphoma, and 1 was peripheral T-cell lymphoma. The most common location of lymphoma was the ileum (8/8, 100%). In contrast, most common location of GIST was the proximal small bowel, including the duodenum (5/7, 71.4%).

**Conclusions** Approximately 6% of the patients who received both VCE and DBE were diagnosed with small bowel malignancy. Malignant lymphoma, adenocarcinoma, and GIST were the most common malignant small bowel tumors. These findings demonstrate the different clinical characteristics among small bowel malignancies and merit further study.

#### ePP87 MOTORIZED SPIRAL ENTEROSCOPY: A SINGLE-CENTER EXPERIENCE

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DOI 10.1055/s-0040-1704482

**Aims** Motorized spiral enteroscopy (PowerSpiral Olympus) is a novel technique for small bowel exploration. The aim of this study is to describe this new technique and demonstrate its advantages in terms of facility and depth in insertion, short procedure time and stability at withdrawal in patients with obscure gastrointestinal bleeding and suspected small bowel lesions on capsule endoscopy. It's a new tool modified from the manual spiral technique.

**Methods** Patients with suspected small bowel lesion diagnosed by capsule endoscopy were prospectively included between June 2019 and October 2019 in our endoscopy unit.

**Results** After capsule endoscopy, 24 motorized spiral enteroscopies were performed. In two of the performed cases there was a difficulty in passing the spires through the esophagus and one of them was successfully accomplished after esophageal dilation. Overall, 22 exams were performed with excellent tolerance under general anesthesia. All indications except one (21/22) were obscure gastrointestinal bleeding. Lesions detected by capsule endoscopy were mainly angioectasia (77%). Motorized spiral enteroscopy resulted in finding one or more lesions in 72% of cases. The mean procedure time was 27 min (16-37) and in 72% (16/22) of cases deep part of ileum was reached. Treatment during the procedure was possible (APC or clips) in all the cases where lesions were identified. Minor complications such as mucosal superficial lacerations mainly in the esophagus and the pylorus were present in 45% (10/22) of cases and there was no major procedure-related complication.

**Conclusions** Motorized spiral enteroscopy is an alternative technique for diagnostic and therapeutic small bowel enteroscopy. It appears to have some advantages, but further large controlled trials are needed in order to verify the efficiency of this device.

Friday, April 24, 2020

09:00 – 09:30

Upper GI: Endoscopic diagnosis 1

ePoster Podium 6

## ePP88 PREDICTIVE VALUE OF ENDOSCOPIC ESOPHAGEAL ABNORMALITIES FOR RESIDUAL ESOPHAGEAL CANCER AFTER NEOADJUVANT CHEMORADIOTHERAPY

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DOI 10.1055/s-0040-1704483

**Aims** Endoscopic evaluation of the esophageal mucosa may play a role in an active surveillance strategy after neoadjuvant chemoradiotherapy (nCRT) for esophageal cancer. This study aimed to investigate the yield of endoscopic abnormalities of the esophageal mucosa for detection of residual disease (RD).

**Methods** A retrospective chart review of 156 patients was performed. All patients underwent nCRT followed by surgery for esophageal cancer. Upper endoscopy was performed six and twelve weeks after nCRT. Endoscopic records were reviewed for presence of non-passable strictures, relative strictures, residual tumor, scar tissue, or ulceration. Presence and type of endoscopic esophageal abnormalities at 6 and 12 weeks were compared between patients with RD and patients with a complete response (CR) based on the resection specimen.

**Results** 118 of 156 (76%) patients had RD. A non-passable stricture was present in eleven patients at six weeks (RD vs CR, 5% vs 13%, P=0.09), preventing full examination of the esophagus. In the remaining 145 patients, ulceration was the most prevalent endoscopic feature (RD vs CR at 6 weeks: 55% vs 61%, P=0.59; 12 weeks: 40% vs 43%, P=0.77). Comparable outcomes were found for presence of a relative stricture (18% vs 24%, P=0.41; 18% vs 14%, P=0.67) and

scar tissue (10% vs 15%, P=0.39; 19% vs 29%, P=0.31). Endoscopic suspicion of residual tumor was significantly associated with RD; at 6 weeks 40/44 patients had RD (36% vs 12%, P=0.01), while at 12 weeks all sixteen patients had RD (22% vs 0%, P<0.01).

**Conclusions** Endoscopic esophageal abnormalities after nCRT were found to be of limited value for detection of residual esophageal cancer. Endoscopic suspicion of residual tumor was the only finding that was associated with RD. Data from prospective studies are needed to confirm its predictive value before this parameter can be implemented in clinical practice.

## ePP89 IMAGE ENHANCED ENDOSCOPY FOR PRENEOPLASTIC CONDITIONS AND NEOPLASTIC GASTRIC LESIONS

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DOI 10.1055/s-0040-1704484

**Aims** Image Enhanced Endoscopy (IEE) improves the accuracy of endoscopic diagnosis. The majority of studies evaluated NBI technology with favourable results. However, there is a lack of evidence concerning the diagnostic accuracy of other technologies, and standardisation of mucosal patterns for some pre-neoplastic conditions. We aimed to evaluate the diagnostic accuracy of available IEE technologies for gastric preneoplastic conditions and neoplastic lesions.

**Methods** PubMed and Embase were searched until December 2018. Studies allowing calculation of diagnostic measures were included. Meta-regression and subgroup analysis were performed to explore sources of heterogeneity. When possible, pooled measures were estimated using fixed or random-effect models. For each technology and outcome, analysis was performed based on per-patient and per-biopsy analysis.

**Results** Among 1338 studies, 44 met the inclusion criteria (29 studies with NBI, 8 with AFI, 1 with FICE, 3 with BLI, 2 with LCI and 1 with i-SCAN). Pooled analysis was only possible for NBI technology and for GIM and dysplasia outcomes. For GIM diagnosis, the presence of tubulo-villous mucosal pattern improved substantially pooled sensitivity and specificity, and decreased significantly heterogeneity. For this outcome, on per-patient analysis, NBI demonstrated a pooled sensitivity of 0,86 (95%CI:0,76-0,92), specificity 0,96 (95%CI:0,93-0,97) and DOR 125,7(95%CI:55,94-282,5); on per-biopsy analysis it showed a pooled sensitivity of 0,87(95%CI:0,84-0,89), specificity of 0,97 (95%CI:0,96-0,97), and DOR 198,4 (95%CI:137,6-286,1). For dysplasia, pooled sensitivity and specificity with NBI was 0,85 (95%CI:0,83-0,88) and 0,97 (95%CI:0,97-0,97) respectively. Subgroup analysis assessing the use of WLE before NBI and the use of magnification using irregular microvascular/microsurface with a demarcation line, did not significantly influence pooled measures.

**Conclusions** This systematic review confirms the high accuracy of NBI for GIM and dysplasia. It is necessary to standardize endoscopic criteria for some of the other technologies, namely those that emerged in recent years and suggest results similar to NBI.

## ePP90 INTESTINAL METAPLASIA IN PATIENTS WITH GASTRO-ESOPHAGEAL JUNCTION TUMORS: SHOULD PATIENTS BE MANAGED DIFFERENTLY?

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DOI 10.1055/s-0040-1704485

**Aims** Both the incidence for Barrett's esophagus (BE) and gastro-esophageal junction (GEJ) tumors seems to be increasing. Interestingly, patients with intestinal metaplasia (IM) affecting the distal esophagus (eg BE) or at the GEJ are managed in opposite directions, with follow-up being mandatory for the former and the absence of further care recommended for the later. Also, the management of superficial lesions in GEJ depends on the presence or absence of BE, with EMR or ESD suggested, respectively. We aimed to determine the clinical features and prevalence of pre-malignant conditions in the surrounding mucosa among patients with GEJ cancer.

**Methods** All consecutive patients surgically treated for GEJ adenocarcinomas in our center, between 2011 and 2018 and with their specimen retrievable (n=111) were retrospectively assessed. Clinical files were evaluated and pathology specimens reviewed to determine the mucosal changes in the surrounding mucosa in the distal esophagus, proximal corpus and cardia if not involved/distorted by the tumour (in 68 patients).

**Results** Sixty nine percent of patients were male and in 17% gastroesophageal reflux noticeable. Also 39% had excess body weight and 53% current or past smoking history. IM was diagnosed in surrounding mucosa in 53 patients (48%) with: 5 (4.5%) affecting solely the distal esophagus (BE); 13 patients (12% out of 111 or 19% out of 68) with IM or multilayered epithelium (early stage of IM) in the cardia ("ultra-short BE"); and 33(30%) exclusively the proximal corpus. In 28 patients(25%) moderate to severe atrophic changes were also reported in proximal corpus.

**Conclusions** Our study highlights that in most GEJ tumors a BE is not clearly identified and that a significant proportion of these patients present with atrophic changes (including IM) in proximal stomach. Future studies should be conducted namely including patients with early GEJ lesions to better determine the proper management for these increasingly diagnosed patients.

Friday, April 24, 2020

Capsule 1

09:00 – 09:30

ePoster Podium 7

### ePP91 NOMENCLATURE AND SEMANTIC DESCRIPTIONS OF ULCERATIVE AND INFLAMMATORY LESIONS SEEN IN CROHN'S DISEASE IN SMALL BOWEL CAPSULE ENDOSCOPY: AN INTERNATIONAL DELPHI CONSENSUS STATEMENT

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DOI 10.1055/s-0040-1704486

**Aims** Nomenclature and description of small bowel (SB) ulcerative and inflammatory (U-I) lesions in capsule endoscopy (CE) are scarce in the medical literature. Interobserver variability in interpreting the findings remains a major limitation for the assessment of severity of mucosal lesions with a potential negative impact on clinical care, training and research regarding SBCE. Our aim is to establish a consensus on the nomenclature and the description of U-I lesions seen in SB CE in Crohn's Disease (CD).

**Methods** An international panel of experienced SB CE readers was formed during the 2016 UEGW meeting. A core group of 5 CE and inflammatory bowel disease (IBD) experts established an internet-based three-round Delphi consensus, but did not participate in voting process. The core group built illustrated questionnaires including various still frames of SB U-I CE lesions obtained from CD patients. A group of 27 other experts was asked to rate and comment different proposals on the nomenclature and the description of the most frequent SB U-I lesions. A 6-point rating scale (varying from 'strongly disagree' to 'strongly agree') was used in successive rounds. The consensus was reached when at least 80% voting members scored the statement within the 'agree' or 'strongly agree'.

**Results** A 100% participation rate was obtained in all rounds. Consensual nomenclature and descriptions were reached for the following seven U-I lesions: *aphthoid erosion*, *deep ulceration*, *superficial ulceration*, *stenosis*, *edema*, *hyperemia*, and *denudation*.

**Conclusions** A consensual nomenclature and description of the most frequent SB U-I lesions seen in CE in CD has been reached by an international group of experts. Such names and descriptions are useful for daily practice, medical education and medical research purposes.

### ePP92 ESGE GUIDELINES FOR SMALL-BOWEL CAPSULE ENDOSCOPY: FROM RECOMMENDATIONS TO PRACTICE

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DOI 10.1055/s-0040-1704487

**Aims** ESGE published performance measures as benchmark for quality assessment in small-bowel capsule endoscopy (SBCE). The aim of this survey was to investigate the influence of ESGE guidelines in current SBCE practice.

**Methods** ESGE published performance measures as benchmark for quality assessment in small-bowel capsule endoscopy (SBCE). The aim of this survey was to investigate the influence of ESGE guidelines in current SBCE practice.

**Results** Excluding duplicates; 217 responses (73.7% from ESGE and 26.3% from non-ESGE countries) were analyzed. The majority (75.6%) of participants follow ESGE guidelines in their practice; 91% of the performed studies adhere to the ESGE recommended indications. Most (76.3%) respondents provide patients with verbal & written information mainly about indications (84%), contra-indications (70.8%), risk of retention (93.6%) and the need for bowel preparation (78%), before SBCE. In line with ESGE guidelines, participants recommend clear liquids diet (62.3%), administration of purgative agents (85.4%) and use of simethicone (73.2%), while 56% of them never give

prokinetics before SBCE. Studies are read either on single (47.5%) or on dual view (44.2%), while 25% of the responders never inspect the mucosa in real time. More than 80% of respondents don't measure the quality of bowel preparation, two thirds of them read and interpret the studies themselves and half of them use a patency capsule in selected cases. Use of emergency SBCE in cases with overt GI bleeding is recommended by 65.5% of the responders. SBCE is considered second-line exam for Crohn's disease evaluation, limited to evaluation of disease extent in newly diagnosed patients (62.2%) and to mucosal healing assessment in established Crohn's disease (54.3%).

**Conclusions** To a certain degree, endoscopists from ESGE and non-ESGE countries follow the Society's guidelines on the use of SBCE in clinical practice. However, concordance gaps have been identified by the survey.

### ePP93 PREDICTION OF CAPSULE ENDOSCOPY RETENTION USING PATENCY CAPSULE COMPARED TO MAGNETIC RESONANCE ENTEROGRAPHY IN KNOWN CROHN'S DISEASE PATIENTS

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DOI 10.1055/s-0040-1704488

**Aims** Capsule endoscopy (CE) retention is as high as 13% in patients with Crohn's disease (CD). Magnetic resonance enterography (MRE) and patency capsule (PC) are two useful tools for identifying strictures in small bowel (SB). The aim of this study is to compare the efficacy and safety of PC and RME for preventing CE retention in patients with CD.

**Methods** This is a prospective, comparative and observational study that included patients with known CD. All the patients underwent MRE and PC. If the PC was not retained CE was administered, but when it was retained, a double balloon enteroscopy was realized searching for the stricture. Predictive criteria for possible CE retention with MRE were long stricture ( $\geq 10$  cm) or prestenotic dilatation  $\geq 3$  cm; and with PC were radiological evidence of PC in SB after 30 hours of the ingestion, excretion of a disintegrated PC or obstructive symptoms during PC passage. Retention was defined as a CE lodged in SB for  $>14$  days or when DBE found a stricture with a diameter  $< 10$  mm. Sensibility, specificity, positive predictive value (PPV), negative predictive value (NPV) and Kappa coefficient of PC and MRE were calculated.

**Results** 30 patients were included (19 female,  $55 \pm 13.81$  years old). Retention criteria with CE/DBE were found in 6 patients, agreeing in 5 cases with PC and in 4 with MRE. Sensibility, specificity, VPP and VPN of PC for CE retention were 83%, 100%, 100% and 96%, and of RME were 67%, 92%, 67% and 92%, respectively. Kappa coefficient for retention between PC and CE/DBE was 0.889 and between MRE and CE/DBE was 0.583. One patient had obstructive symptoms with the PC that resolved spontaneously within 24 hours.

**Conclusions** PC is a safe and effective procedure for the prevention of CE retention in patients with known CD.

Thursday, April 23, 2020

14:30 – 15:00

Colon screening and surveillance 2

ePoster Podium 8

### ePP94 EFFECT OF DIMINUTIVE POLYPS WITH HGD ON SURVEILLANCE COLONOSCOPY

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DOI 10.1055/s-0040-1704489

**Aims** The colonoscopy surveillance guideline AGA 2012 and ESGE 2013, set the surveillance schedule based on the characteristics of polyp. Polyp with high grade dysplasia (HGD) requires three years of follow-up regardless of size. It is unclear whether diminutive polyps (less than 5 mm) with HGD have more risk than the low risk group. Therefore, in this study, the effect of diminutive with HGD on the occurrence of Advanced adenoma was analyzed.

**Methods** From Jan 2015 to Dec 2017, all patients who underwent index and surveillance colonoscopy were retrospectively screened, and after the exception of 298 cases, 1210 patients were included. Through logistic analysis, Patients were grouped into diminutive HGD group, low risk group (patients with no polyp, 1-2 low grade dysplasia (LGD) patients), and high risk group (HGD  $>5$ mm, 3 or more adenoma) according to the index colonoscopy results. Advanced adenoma was defined as follow; adenoma with  $\geq 1$  cm in size, tubule-villous or villous adenoma, high grade dysplasia.

**Results** The mean follow-up period was 22.47 (95% CI, 21.65-23.33 month). 610 patients had LGD (50.45%) and 152 patients (12.5%) had HGD. Among them, 61 patients (5.0%) had diminutive polyp with HGD. The risk of developing advanced adenoma in the surveillance colonoscopy was analyzed. Compared with the low risk group, diminutive HGD group didn't showed significant risk (OR = 1.634 (95% CI, 0.843-3.168),  $p = 0.142$ ), but the high risk group showed a significant risk (OR = 1.428 (1.027-1.984),  $p = 0.034$ ).

**Conclusions** Diminutive HGD does not increase the risk of developing advanced adenoma compared to the low risk group.

### ePP95 DIFFERENCES IN THE DISTRIBUTION OF HISTOLOGY OF COLORECTAL ADENOMAS BETWEEN INDIVIDUALS UNDER AND OVER THE AGE OF 50

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DOI 10.1055/s-0040-1704490

**Aims** While the incidence of Colorectal cancer(CRC) is decreasing among individuals over 50 years it is increasing within younger adults. A study by Reinier et al showed that CRC among young adults is now diagnosed at a later stage compared to 1990, indicating that the increasing incidences are not an effect of a shift in age at diagnosis. However, it is still unknown if there are differences among precursor adenomas between adults  $< 50$  years compared to those above.

**Methods** 336582 screening colonoscopies between 2007 and 2019 were assessed within the Austrian quality-assurance program. Main reason for undergoing colonoscopy of asymptomatic individuals under the age of 50 was fear of cancer. The proportion of different types of adenomas between patients aged  $< 50$  and  $\geq 50$  was compared within this study.

**Results** 336.582 screening colonoscopies were analyzed. 12.256(3,6%) of patients were under the age of 50 and 324.326(96,4%) above. Adenomas were detected in 12,5% (n=1.531) within individuals  $< 50$ years and in 23,7% (n=76.742) within above. 9,5% (n=146) of adenomas among adults under 50 years were sessile-serrated-polyps(SSP) compared to 6,5% (n=4951) among those older than 50 ( $p < 0,001$ ). 2,9% (n=45) were traditional-serrated-polyps(TSA) in the age group  $< 50$  compared to 1,2% (896) in age group  $\geq 50$  ( $p < 0,001$ ). Proportion of tubular adenomas was 71,1% (n=1089) within individuals  $< 50$  years and 76,2% (n=58.480) within patients older than 50 years ( $p < 0,001$ ). 15,5% (n=238) vs. 15,3% (11.766) of adenomas were tubulovilloes ( $p=0,81$ ) and 0,8% (n=13) vs. 0,8% (n=639) were villoes adenomas ( $p=0,89$ ) comparing  $< 50$  and  $\geq 50$  year-old individuals ( $p=0,81$ ).

**Conclusions** Individuals younger than 50 years had significant higher proportions of SSAs, as well as TSAs, compared to individuals older than 50. In contrast the proportion of tubular adenomas was significant lower among 20-49 year old patients. There was no difference in proportion of tubulovilloes and villoes adenomas.

## ePP96 POST-COLONOSCOPY COLORECTAL CANCERS - SHOULD WE BE ASPIRING TO BETTER TARGETS?

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DOI 10.1055/s-0040-1704491

**Aims** The British Society of Gastroenterology (BSG) have developed quality assurance measures for the delivery of colonoscopy within the UK. One of these includes aspiring to a target of < 5% post-colonoscopy colorectal cancers (PCCRC) at 3 years. We aimed to describe risk factors for missed colorectal cancers.

**Methods** Retrospective study across two sites at a tertiary London-based hospital Trust. Endoscopy software was used to identify all new colorectal cancers diagnosed during colonoscopy (May 2017 to September 2018). PCCRC rate was defined as the proportion of PCCRC diagnoses amongst all CRC cases within a 3 year period.

**Results** 282 cases of colorectal cancer diagnosed during colonoscopy. There were a total of 8 cases of PCCRC within 3 years giving our Trust a PCCRC rate of 2.8%. Mean age of patients with a PCCRC diagnosis was 75.8 (64 - 88). Mean interval from initial to diagnostic colonoscopy in PCCRC cases was 2.08 years (0.92 - 3). 7 of the 8 cases (87.5%) were colonoscopies performed by surgeons or external agency endoscopists. 4 of the 8 cases (50%) had less than good bowel preparation. Retroflexion in the rectum was not performed in 6 of the 8 cases (75%). When PCCRC diagnoses were extended to within 5 years the rate was 4.3%.

**Conclusions** Our Trust is within the quality standards set by the relevant governing bodies. Root cause analyses identified caecal, sigmoid and anastomotic lesions as high risk sites for missed cancers as well as omission of retroflexion in the rectum. Accepting less than good bowel preparation is also a factor in half of PCCRC cases. In view of the advances made in the quality of colonoscopy training and enhanced endoscopic technology, we suggest raising the bar with regards to acceptable PCCRC by either lowering the target or increasing the time frame to 5 years.

Friday, April 24, 2020

09:30 – 10:00

Upper GI: Interesting clinical cases

ePoster Podium 1

## ePP97V RECURRENT SEPSIS DUE TO CIANOCHRILATE INJECTION INTO SUBCARDIAL VARICES. ENDOSCOPIC CURATIVE TREATMENT

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DOI 10.1055/s-0040-1704492

A 60 years old man with HCV cirrhosis suffered variceal subcardial bleeding and was treated with cianochrilate injection. During the following year he presented multiple bacteremias and sepsis without a clear origin even with a full body CT, MRI and SPECT. We performed an upper endoscopy and USE which showed an hypoechoic structure into the previous injection point compatible with accumulated cianochrilate. Then by using a needle-knife sphincterotome we cut this area and using a forceps we extracted all the accumulated cianochrilate. After this, the outcome was favorable without any more bacteremias, allowing to submit the patient to liver transplantation.

## ePP98V UPPER GASTROINTESTINAL BLEEDING SECONDARY TO BURKITT LYMPHOMA, AN UNCOMMON BUT VERY AGGRESSIVE CAUSE OF GASTRIC CANCER

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DOI 10.1055/s-0040-1704493

Lymphoma is the second most common type of gastric cancer, especially MALT and diffuse large B cells lymphomas. A very rare but highly aggressive lymphoma is Burkitt lymphoma. Man, 72 years with epigastralgia, melena and anemia. In urgent gastroscopy, a large excavated ulcer is observed on the underside of the antrum (1-3). Biopsies show CD20+/bcl-6+/CD10+ lymphoid cells on the lamina propria, over-expression of c-myc and Ki67>90%, compatible with Burkitt lymphoma. PET/CT (4) shows large gastric hypermetabolic mass, with multiple intra-abdominal nodules. Chemotherapy (R-DA-EPOCH scheme) achieves complete metabolic remission in PET/CT at the end of treatment (5).

## ePP99V ACQUIRED AND LOST DOUBLE PYLORUS: CLINICAL AND ENDOSCOPIC CHARACTERISTICS THROUGH FOURTEEN-MONTH FOLLOW-UP

**Authors** Milivojevic V<sup>1</sup>, Sagdati S<sup>2</sup>, Catovic S<sup>2</sup>, Krstic M<sup>3</sup>, Milosavljevic T<sup>3</sup>

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DOI 10.1055/s-0040-1704494

A double pylorus (DP) is a derived or acquired rare endoscopic finding characterized by the presence of two openings from the stomach antrum to the duodenal bulb.

We describe the case of an acquired DP which was caused by the penetration of the antral ulcer into the duodenal bulb.

The auxiliary channel connects the prepyloric antrum of the front wall with the bulb of the duodenum.

The bridge between the double pylorus disappeared after 14 months of follow-up, making a large joint pylorus.

Non-steroidal anti-inflammatory drugs, acetylsalicylic acid, anticoagulant drugs, and *Helicobacter pylori* infection become risk factors for acquired DP.

Friday, April 24, 2020

09:30 – 10:00

Cholangioscopy: Strictures

ePoster Podium 2

## ePP100 DIAGNOSIS OF BILIARY STRICTURES USING SPYGLASS DIRECTED BIOPSIES - INTENTION TO TREAT ANALYSIS AT A TERTIARY CARE CENTER

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DOI 10.1055/s-0040-1704495

**Aims** Diagnosis of biliary strictures remains clinically arduous. We evaluated the utility of single-operator cholangioscopy (SOC) SpyGlass with and without cytology versus cold biopsies performed during endoscopic retrograde cholangiopancreatography (ERCP) for biliary strictures.

**Methods** We conducted a retrospective analysis of all biliary strictures. A total of 42 patients (51% males) are included over a period of 3 years. Follow up was complete in 37 patients. The patients were divided into 4 groups - bile duct biopsies only using the SpyGlass system (n=19), bile duct biopsies using the

SpyGlass system with cytology brushings (n=8), bile duct biopsies using cold biopsy forceps alone (n=6) and only cytology brushings (n=4).

**Results** Biliary stricture was located in the common bile duct in 55% patients and the common hepatic duct in 32% patients. The median length was 14.5±8 mm with mean bilirubin of 10+8 mg/dl. Spyglass was successful in all patients except 1. Twenty-five (68%) patients were found to have malignant and 12 (32%) patients had benign lesions. SpyGlass with cytology accurately detected malignancies in 67% of patients with total diagnostic accuracy for all lesions being 75%. SpyGlass biopsies alone accurately diagnosed 64% malignancies, and 79% all lesions. When both these groups were combined, diagnostic accuracy for malignant lesions was 65% and for all lesions was 78%. Diagnostic accuracy for cold biopsy forceps was 75% for malignant lesions and 83% for all lesions. Cytology accurately diagnosed 50% of malignant lesions and 50% of all lesions. One patient diagnosed initially with benign stricture on SpyGlass was later diagnosed as having malignancy when biopsied again using SpyGlass.

**Conclusions** Performing SpyGlass biopsies has a high rate of technical success. SpyGlass directed biopsies accurately predict diagnosis in 79% of patients. The addition of cytology does not add incremental yield. Forceps biopsy is not always technically feasible, but when possible offers excellent diagnostic yield.

### ePP101V THE ROLE OF CHOLANGIOSCOPY BY USING THE SPYGLASS SPYSCOPE SYSTEM IN A PATIENT WITH PRIMARY SCLEROSING CHOLANGITIS (PSC) FOR DIAGNOSING INDETERMINATE BILLIARY STRICTURE

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DOI 10.1055/s-0040-1704496

We performed cholangioscopy with the SpyGlass system (Boston Scientific Inc., Massachusetts, USA) and obtained targeted tissue specimens in order to investigate a stricture of 1.7cm at the bifurcation of the common hepatic duct in a 61 years old patient with PSC. We visualized the stricture, obtained tissue specimens with the special biopsy forcep (Spybite) in order to establish diagnosis. Cholangioscopy revealed localized lesions with villous appearance and irregularly dilated vessels, macroscopic signs that suggest neovascularization and possible neoplasia. Despite the suspicion for cholangiocarcinoma, histopathological analysis revealed a localized inflammatory reaction and a fibrotic stricture without any evidence of malignancy.

### ePP102V AN UNUSUAL BILE DUCT LESION

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DOI 10.1055/s-0040-1704497

**Clinical case** 54 year old lady referred with a common bile duct (CBD) polyp on MRCP.

**Background history** Primary sclerosing cholangitis (PSC) diagnosed 2017  
Ulcerative colitis (UC) diagnosed in 2017  
Ex Smoker (30 pack year history)

ERCP/Direct Oral Cholangioscopy revealed a scarred and ulcerated distal CBD consistent with PSC. Multiple strictures with intrahepatic beading and stenosis in the second order ducts. A papilliform mass just below the hilum, with small islands of papilliform tissue seeded into the right and left first order ducts was seen. Biopsies and brushing taken.

Histology confirmed an intraductal papillary mucinous neoplasm (IPMN).

Friday, April 24, 2020  
Neuroendocrine tumors

09:30 – 10:00  
ePoster Podium 3

### ePP103 USEFULNESS OF EUS-GUIDED FINE NEEDLE BIOPSY FOR SMALL PANCREATIC NEUROENDOCRINE NEOPLASM: KOREAN MULTICENTER NATIONWIDE STUDY

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Gastroenteropancreatic Neuroendocrine Tumor Registry Research Project of the Korean Society of Gastrointestinal Cancer

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DOI 10.1055/s-0040-1704498

**Aims** Pancreatic neuroendocrine neoplasm (PNET) represents heterogeneous biological behavior, and most of small PNETs 2 cm or less in size are known to show indolent feature. Thus, observation can be considered in selected cases according to the NCCN guideline, however, there is a lack of clinical evidence, and the criteria are vague. We evaluated the usefulness of EUS-guided fine needle biopsy in determination of treatment plan for small PNET.

**Methods** A total of 158 patients from 14 institutions with pathologically confirmed PNETs 2 cm or less in initial imaging were enrolled. The primary outcome was any event of metastasis or recurrence during follow up.

**Results** The median age was 57.5 years (range, 22-84 years), and 86 patients (54%) were female. Eighteen patients (11%) had a tumor-related symptoms at initial diagnosis, and the median size of the tumor was 1.3 cm (range, 0.7-2.0 cm). The results of WHO classification were available in 147 patients: 126 patients (86%) with grade 1 and 21 patients (14%) with grade 2. Pathological diagnosis with EUS-guided aspiration biopsy was confirmed in 22 patients, and among them, identification of WHO classification was also available in 17 patients. Among six patients who underwent EUS-guided aspiration biopsy and surgery together, the concordance rate of WHO classification between two methods was 83% (5/6). A total of 142 patients (90%) underwent radical resection, and seven metastasis or recurrence (5%) were detected during follow up. WHO classification grade 2 was the only risk factor predicting metastasis or recurrence in univariate and multivariate analysis (HR 8.81, 95% CI 1.76-44.11, p = 0.008).

**Conclusions** EUS-guided fine needle biopsy for small PNET may be recommended to predict the malignant potential of the tumor by providing WHO classification.

### ePP104 KI-67-INDEXING OF EUS-GUIDED FINE NEEDLE BIOPSY SPECIMENS FOR THE PREOPERATIVE GRADING OF PANCREATIC NEUROENDOCRINE TUMORS

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DOI 10.1055/s-0040-1704499

**Aims** A reliable preoperative grading of pancreatic neuroendocrine tumors (PanNET) is important to assess the prognosis and to determine the clinical management - surgical resection vs active follow-up. EUS-guided fine-needle biopsy sampling (EUS-FNB) is a promising tool for this task.

**Methods** In a single-center, prospective setting 2012-2019, all patients with suspected PanNETs referred for EUS-FNB (22 gauge Procore-needle) were

► **Tab. 1** Preoperative and post-surgery grading of resected PanNETs.

	Ki67-SURG G1	Ki67-SURG G2
Ki67-FNB G1	5	6
Ki67-FNB G2	0	3
Non-diagnostic FNB/ Ki67-FNB failure	1	5

eligible for inclusion. The diagnostic sensitivity of EUS-FNB was calculated. Then, the EUS-FNB specimens were analyzed, using a computer software aimed for digital cell counting, with respect to the biopsy quality (cell count) and the Ki67-index (Ki67-FNB). Based on the calculated Ki67-FNB, tumors were graded preoperatively (G1-G3) and compared with the corresponding surgical specimen Ki67-index (Ki67-SURG).

**Results** In total, 49 unique PanNET-patients (f/m: 24/25; median tumor size: 30 mm) were subjected to EUS-FNB. EUS-FNB was diagnostic in 40/49 (82%) cases. In diagnostic FNB-specimens, the biopsy quality was high (>2000 cells), moderate (1000-2000 cells), low (500-1000 cells), and very low (0-500 cells), in 19/40 (48%), 10/40 (25%), 9/40 (23%), and 2/40 (5%) cases respectively. Tumor size or sampling route did not significantly influence biopsy quality. The median calculated Ki67-FNB was 1.5% (IQR: 0.6%-4.2%). Grading of resected patients (n=20) was according to ► **Table 1**.

Undergrading was non-significantly more common in cell counts < 2000 cells versus >2000 cells (63% vs 29%, p=ns).

**Conclusions** EUS-FNB performed with a 22 gauge needle is sensitive for the diagnosis of PanNET but relatively inaccurate for preoperative grading of PanNETs based on Ki67-indexing. There is a clear need for improvement in FNB-needle design to optimize core volume. Future studies on this topic is warranted.

### ePP105V EUS-GUIDED RADIOFREQUENCY ABLATION OF RECURRENT PANCREATIC NON-FUNCTIONAL NEUROENDOCRINE TUMORS AFTER DISTAL PANCREATCTOMY IN A PATIENT WITH MEN1

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DOI 10.1055/s-0040-1704500

A 48-year-old man with a history of MEN1 syndrome that underwent distal pancreatectomy for multiple pancreatic non-functional neuroendocrine tumors, was referred for EUS after a new lesion in segment 3 of the liver was detected on a 68-Ga-DOTATOC PET/CT scan, 18 months after surgery, while receiving Lanreotide. On EUS another 5 mm lesion was detected in head of pancreas.

Both lesions were successfully treated with EUS-guided radiofrequency ablation (RFA). At one-year following ablation treatment, both Ga-DOTA-TOC PET/CT scan and standard EUS including contrast-enhanced EUS were negative for any recurrent lesions.

Friday, April 24, 2020

09:30 – 10:00

Advanced endoscopic resection for colorectal neoplasia

ePoster Podium 4

### ePP106 A FEASIBILITY STUDY OF A NOVEL ENDOSCOPIC TECHNIQUE FOR DUODENAL TUMORS; PARTIAL SUBMUCOSAL INJECTION UNDERWATER EMR

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DOI 10.1055/s-0040-1704501

**Aims** Under water endoscopic resection (UEMR) has been reported as effective endoscopic treatment for duodenal tumor. However, a notable problem of UEMR for duodenal tumor is that the rate of pathological margin negative is relatively low. Therefore, we proposed a novel technique; partial injection UEMR (PI-UEMR) that we perform partial submucosal injection into a part of the lesion before performing UEMR to visualize clearly the distal side of endoscopic snare and to capture the lesion with sufficient margin. The aim of this study is to evaluate feasibility and safety of PI-UEMR for duodenal tumor.

**Methods** This is a prospective observational study from tertiary care hospital. We performed PI-UEMR in consecutive patients with duodenal tumor less than 20mm from August to November in 2019. In all cases, we closed the wound with endoclips. And all specimen was stretched and pinned on rubber board for the pathological evaluation. Primary outcome was R0 resection rate that was defined as the en bloc resection rate with free vertical and horizontal margin. Secondary outcomes were mean total procedure time, technical success rate that is defined as the resection rate without remnant lesion, and intra- and postprocedural complication rate.

**Results** Twelve patients were included in this study. Mean age was 60.1±11.5 years old. Three fourths lesions were located at descending part of duodenum. Median lesion size was 11mm [IQR 8-14mm]. Ten cases were taken endoscopic biopsy in prior hospital and observed biopsy scar. R0 resection rate was 75% (9/12 cases). Mean total procedure time was 19.2±12.3minutes. Technical success rate was 91.7% (11/12 cases). And there was no complication in this study.

**Conclusions** PI-UEMR might be very useful and safe technique of endoscopic resection for duodenal tumor including relatively large lesions.

### ePP107 NON-EXPOSURE SIMPLE SUTURING ENDOSCOPIC FULL-THICKNESS RESECTION (NESS-EFTR) WITH SENTINEL BASIN DISSECTION IN PATIENTS WITH EARLY GASTRIC CANCER, SENORITA 3 PILOT STUDY

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DOI 10.1055/s-0040-1704502

**Aims** Recently, non-exposure simple suturing endoscopic full-thickness resection (NESS-EFTR) was developed, and this procedure was designed to prevent tumor exposure to the peritoneal cavity. The aim of this study was to evaluate the feasibility of NESS-EFTR with sentinel basin dissection for early gastric cancer.

**Methods** This study is a prospective pilot study (SENORITA 3 pilot). From July 2017 to January 2018, twenty patients with early gastric cancer less than 3 cm in size without absolute indication for endoscopic submucosal dissection were enrolled. Sentinel basin was detected using Tc<sup>99m</sup>-phytate and indocyanine green, and the NESS-EFTR procedure was performed when all sentinel basin nodes were tumor-free by frozen pathologic examination. The primary outcome was the rate of complete resection, and secondary outcomes were the rate of intraoperative perforation and the incidence of postoperative complication.

**Results** Among 20 enrolled patients, one patient dropped out due to large tumor size, and one underwent conventional laparoscopic gastrectomy due to metastatic sentinel lymph nodes. NESS-EFTR was successful in 17 of the 18 remaining patients (94.4%), and the complete resection rate was 83.3% (15/18). The rate of intraoperative perforation during EFTR was 27.8% (5/18), and endoscopic clipping or laparoscopic suturing or stapling was performed at the perforation site. There was one case of postoperative complication which was treated with endoscopic clipping and others were discharged without any event.

**Conclusions** NESS-EFTR with sentinel basin dissection is a feasible treatment option for early gastric cancer. Further phase II study is needed.

### ePP108 A SINGLE CENTRE EXPERIENCE OF ESD AND EFTR OF 133 CASES IN INDIA WITHOUT USING RETRACTION DEVICES

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DOI 10.1055/s-0040-1704503

**Aims** Feasibility and outcome of endoscopic submucosal dissection for early submucosal and subepithelial lesion of gastrointestinal tract in western India- a single center experience without using any traction method.

**Methods** Total 171 patients with early mucosal neoplasms [EMNs] and suitable subepithelial tumours [SETs] underwent ESD/EFTR from 2014 till April 2019. Lesion location/size/type, ESD duration, histology, adverse events (AEs) and hospital stay recorded prospectively.

One important aspect of our technique - only gravity and change of position of was used for dissection. No retraction devices used.

**Results** Total - 133 ESD/EFTR

Location - 27 esophagus, 41 stomach, 16 duodenum, 05 colon and 52 rectum

Median age: 60 (11-92).

Sex distribution- 91 males, 69 females.

Histology:

Esophagus: SCC 10, Leiomyoma (STER) 17

Stomach: Early Gastric Cancers- 5, GISTs - 10, NET's - 11, Lipomas - 4, Pancreatic Rests- 6, Large Inflammatory Polyps- 5

Duodenum: NET's - 14, Other SET - 2

Right Colon: Adenomas - 4, Lipomas - 1

Left Colon and Rectum: LST- 24, Adenomas - 20,

Mean size: 2.7 cm

En bloc resection: 132/133 (99.2%).

R0 resection: 127/133 (95.4%).

EFTR: 15 - Gastric (9 GIST's & 6 NET's). Closure 4 - TTS hemoclips, 2 OTSC and 7 - loop and clip closure. Two large GIST's in the fundus closed laparoscopically

No sepsis or leak any case. Secure closure possible in all.

All duodenal defects post ESD closed. 12 hemoclips and 4 OTSC.

Delayed bleed: 2 cases

Median time - 50 min (25 - 270 min)

Average Stay - 2 days.

**Conclusions** Our series shows that ESD/EFTR is feasible with R0 resection in 95.4% cases and safe without use any retraction devices. It is one of the largest series in India.

Friday, April 24, 2020

09:30 – 10:00

Squeaky clean

ePoster Podium 5

### ePP109 SAFETY OF NER1006 IN ELDERLY: A POST-HOC ANALYSIS OF A PROSPECTIVE, MULTICENTER COHORT

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DOI 10.1055/s-0040-1704504

**Aims** This study aimed to assess the difference of NER1006 (Plenvu Norgine, Harefield, UK) safety profile in elderly compared to younger patients in a real-life setting.

**Methods** We performed a post-hoc analysis of data from a cohort of 1289 patients undergoing a colonoscopy after an afternoon-only or an afternoon-morning preparation with a 1, 2 or 4L PEG-based solution consecutively enrolled from September 2018 to February 2019 in 5 Italian centres. The elderly population was defined by an age  $\geq 65$  years. Safety was monitored through adverse events (AEs) reporting.

**Results** Among 1289 patients, 233 subjects undergoing a bowel preparation with NER1006 were included in the analysis. The mean age was 59.5  $\pm$  15.9 years, 52.4% of patients were male, and 43.5% were older than 65 years old. Prevalence of obesity, hypertension, diabetes and renal failure was 12.2 vs 13.9% ( $p=0.7$ ), 13.7 vs 32.7% ( $p=0.03$ ), 3.1 vs 9.9% ( $p=0.001$ ) and 1.7 vs 2.5% ( $p=0.3$ ) in the two groups, respectively. Overall incidence of AEs was 19.8% and 10.9% ( $p=0.06$ ) in the group of patients aged  $< 65$  and  $\geq 65$  years. Incidence of nausea, vomit, abdominal pain, dehydration and headache was 3.1 vs 3.0% ( $p=0.9$ ), 9.9 vs 5.9% ( $p=0.2$ ), 0.8 vs 0.0% ( $p=0.3$ ) 2.3 vs 0.0% ( $p=0.1$ ) and 2.3 vs 0.0% ( $p=0.1$ ), in the group of patients aged  $< 65$  and  $\geq 65$  years, respectively. No serious AE or deaths occurred in any of the two groups.

**Conclusions** In this post-hoc analysis, we did not find any substantial difference in the safety profile of NER1006 in the elderly compared to younger patients. Given the observational nature of our study, an assessment of blood electrolyte or creatinine was not feasible. Nevertheless, no clinical event attributable to electrolyte imbalance or dehydration was observed in any patient. These results confirm the safety of this product even in the elderly and in a real-life setting.

### ePP110 1-LITER POLYETHYLENE GLYCOL (1L-PEG) BOWEL PREPARATION VS. 4L- PEG FOR COLON CLEANSING AMONG INPATIENTS: A PROPENSITY SCORE MATCHING ANALYSIS FROM A LARGE MULTICENTER PROSPECTIVE COHORT

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DOI 10.1055/s-0040-1704505

**Aims** The inpatient status is one of the strongest independent predictors for inadequate colon cleansing. The best strategy for bowel preparation among inpatients is yet unknown. Based on experts' opinion, high-volume, 4L polyethylene glycol (PEG) solution should be the standard-of-care in this setting. We aimed to determine whether the novel 1L-PEG plus ascorbate prep is associated with increased colon cleansing among inpatients.

**Methods** Patients enrolled in a large Italian multicenter prospective observational study on bowel prep for inpatients (QIPS study) were considered for inclusion. We performed a propensity score matching analysis in order to adjust for age, gender, Charlson comorbidity index, and all of the significant risk factors for inadequate colon cleansing reported in the QIPS study (i.e. days of hospitalization before colonoscopy, patient's autonomy, constipation, diabetes, anti-psychotic drugs intake, day-before vs. split-dose/same-day regimen, and compliance to bowel prep) between PEG-1L and PEG-4L group. The primary outcome was the rate of adequate colon cleansing, as defined by Boston Bowel Preparation Scale  $\geq 2$  in any colon segment.

**Results** Among 1,524 patients who underwent colonoscopy, 717 took PEG-4L and 183 PEG-1L. Overall, adequate colon cleansing was found in 442 (61.7%) and 159 (86.9%) in PEG-4L and PEG-1L group, respectively ( $p=0.01$ ). After propensity matching, we selected 183 pairs of patients with similar distribution of possible confounders. Adequate colon cleansing was significantly higher in the PEG-1L group than in the PEG-4L group (86.9% vs. 74.9%,  $p=0.01$ ), with a number needed to prep (NNP) of 9, meaning that one adequate colon cleansing is gained every 9 hospitalized patients prepared with 1L-PEG, as compared with 4L-PEG.

**Conclusions** After correcting for possible confounders, we found a higher rate of adequate colon cleansing for colonoscopy with the 1L-PEG bowel prep vs. 4L-PEG among inpatients. A randomized controlled trial is urgently needed to confirm our findings.

### ePP111 A COMPARATIVE EVALUATION OF RENAL FUNCTION IN INPATIENTS TAKING 4L- AND 1L- PEG-BASED BOWEL PREPARATION: A POST-HOC ANALYSIS OF A MULTICENTRE PROSPECTIVE STUDY

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DOI 10.1055/s-0040-1704506

**Aims** Recently, a new 1-Liter polyethylene glycol (PEG) plus ascorbate bowel purge has been approved for bowel preparation (Plenvu). Concerns about the safety profile of this very-low preparation have been risen due to electrolyte shifts (in particular high serum sodium level) reported in registration trials. However, real-life data on safety profile of Plenvu are lacking. Aim of the study was to compare renal function and serum electrolytes levels in inpatients scheduled for colonoscopy prepared either with 4L- or 1L-PEG based purge.

**Methods** Multicentre prospective, comparative study. Consecutive colonoscopies among hospitalized patients were included. Laboratory tests were performed before the beginning and after the end of preparation.

**Results** Data on 133 patients (72 4L-PEG and 61 1L-PEG) were collected in four hospitals. The two populations (4L- vs 1L- PEG) did not differ according to mean age (78 vs 73 years), gender, median Charlson comorbidity index and  $\geq 75\%$  of bowel-prep intake (97% vs 93%). The medium time among lab assessment and the beginning/end of preparation was comparable between groups.

► **Tab. 1** Laboratory tests, before and after bowel preparation intake. IQR, interquartile range. GFR, glomerular filtration rate.

Difference in post- vs. pre- bowel prep serum lab tests, <median (IQR)	PEG-4L	PEG-1L	P
Sodium, mmol/L	1 (-1.5, 2)	1 (-2, 3)	0.346
Potassium, mmol/L	-0.1 (-0.4, 0.2)	0.0 (-0.3, 0.3)	0.128
GFR (CKD-EPI), mL/min/1.73 m <sup>2</sup>	0.0 (-3.1, 4)	-0.5 (-6.0, 2.5)	0.171
Hematocrit, %	0.5 (-0.7, 2.1)	0.7 (-1.4, 2.7)	0.935

Patients receiving 1L-PEG group had greater amount of IV fluid intake (>1000ml/die) during the bowel prep.

No significant electrolytes shift was observed after bowel preparation in the two groups, as well as glomerular filtration rate (GFR) and the hydration state assessed by the hematocrit.

**Conclusions** In this first real-life study performed in inpatients, no significant changes in renal function and serum electrolytes levels after bowel preparation for colonoscopy with 1L-PEG solution were observed.

Friday, April 24, 2020

Esophageal stenosis and cancer

09:30 – 10:00

ePoster Podium 6

### ePP112 ENDOSCOPIC TREATMENT OF CAUSTIC STENOSIS: ABOUT 42 CASES

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DOI 10.1055/s-0040-1704507

**Aims** Ingestion of a corrosive substance causes esophageal lesions of varying severity. The endoscopic assessment allows to make the inventory of digestive lesions that condition the prognosis and guide the therapeutic strategy. Treatment of esophageal stenosis, once organized, involves endoscopic treatment (dilatation) and/or surgery. Our work aimed to report, through a retrospective analysis, the experience of our department concerning the endoscopic treatment of caustic stenosis.

**Methods** It was a 24-year study conducted between 1995 and 2019 at the level of our Department of Digestive Diseases. During this period 42 patients with esophageal stenosis caused by caustic ingestion were registered. The treatment consisted in providing a dilatation using the bougies of Savary-Gilliard.

**Results** Forty-two cases were enrolled during the study period, or 7.2% of 577 patients followed for esophageal stenosis of different etiology. The median age of patients was 36 years with a male predominance and a sex ratio (H/F) of 1.8. Hydrochloric acid was implicated in 67% of cases, followed by bleach by 14% and potash by 7%. In our practice, the endoscopic treatment of caustic stenoses consisted in the use of Savary-Gilliard candles. The median number of dilatation sessions was 2.6. The most commonly used bougie diameters were the diameters 12 and 14. The evolution after one dilatation was favorable in 47% and required more than one dilatation session in 53%. The average time of relapse after an endoscopic treatment was one month. No complications were recorded.

**Conclusions** Caustic stenosis remains a benign condition in the majority of cases, however, it may have consequences with an esophageal stenosis which remains a long and difficult condition to treat. Repeated endoscopic dilatation remains a treatment with little morbidity that can delay surgery.

### ePP113 THE EFFICACY AND SAFETY OF THE SECOND ENDOSCOPIC RADIAL INCISION AND CUTTING METHOD FOR REFRACTORY BENIGN ESOPHAGEAL STRICTURE

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DOI 10.1055/s-0040-1704508

**Aims** Benign esophageal strictures after any treatment of esophageal cancer are often refractory to conventional dilation. Radial incision and cutting (RIC) method is indicated for refractory cases and showed the favorable outcome in the short term. However, some cases develop re-stricture in the long term and RIC is tried to perform repeatedly for such cases. As its efficacy and safety have not been reported yet, we aimed to clarify the efficacy and safety of second RIC.

**Methods** Patients who were treated with first RIC for benign esophageal stricture between April 2012 and September 2019 were enrolled. We used an insulated-tip knife to cut the stricture site and removed the fibrotic tissue of stricture in RIC. According to the number of RIC procedure, all patients were classified into group A (once) and group B (twice or more). We evaluated the one- and 6-month patency rates after RIC procedure, and the adverse events among all first RIC, first RIC and second RIC of patients in group B, retrospectively.

**Results** We evaluated 39 patients (35 men, 4 women; median age 72 years, range 49-85) who were eligible. The causes of stricture were surgical resection in 30 patients, endoscopic resection in 5 patients, and chemoradiotherapy in 4 patients. RIC were performed once in 23 patients (group A), and twice or more in 16 patients (group B). The one- and 6-month patency rates after first RIC of all patients were 56% and 39%, respectively. In group B, those after first RIC was 50% and 8%, whereas those after second RIC was 63% and 15%. There were no adverse events in all procedures.

**Conclusions** RIC can be an effective and safe treatment even for patients with refractory benign esophageal stricture after first RIC.

### ePP114 ASSOCIATION OF PLUMMER VINSON'S SYNDROME AND CANCER

**Authors** Lamarti F<sup>1</sup>, Barhdadi IBE<sup>1</sup>, Mountassir ME<sup>1</sup>, Zertiti S<sup>1</sup>, Berhili C<sup>1</sup>, Lagdali N<sup>1</sup>, Borahma M<sup>1</sup>, Ajana FZ<sup>1</sup>

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DOI 10.1055/s-0040-1704509

**Aims** To describe the epidemiological profile of patients with cancer-associated plummer Vinson's syndrome (PVS) and to show the interest of endoscopic surveillance in them.

**Methods** It is a retrospective analytical descriptive study over a 25-year period including all patients treated for PVS and diagnosed with cancer. The collection of data and statistical analysis were performed by SPSS software version 20.0.

**Results** Of the 147 patients treated for PVS, 11% had associated cancer. The average age was 50.6 +/- 13.2 years of which 92.9% were women. The interval between diagnosis and the appearance of cancer was 8 years +/- 7.4. All our patients with associated cancer had dysphagia with weight loss, odynophagia in 92.9%, clinical anemic syndrome in 59%, upper gastro

intestinal bleeding in 10%. The median value of ferritin was 6.2 µg/l [1; 10]. The location of the PVS ring was at the level of Killian triangle in 42.9% and upper third of esophagus in 57.1%. The location of the cancer was at upper third in 21.4%, malignant transformation of the ring located at the Killian triangle in 42.9%, middle third in 14.3%, lower third in 21.4%. It was squamous cell carcinoma in all cases. Surgical treatment was initiated in 8.3%, radiochemotherapy in 83.3% and refusal of treatment in 8.3%. 02 patients have progressed well with the disappearance of dysphagia, 10 patients died between 5 months and 5 years of cancer progression; The rest of patients could not be followed. In multivariate analysis, the statistically significant predictors of PVS degeneration are: age > 50.6 years (OR = 2.37, p = 0.003 CI = 1.875-4.236), ferritinemia < 6.2 µg/l (OR = 3.02, p = 0.001 CI = 0.977-12.516) and the location of the PV ring at the Killian mouth (OR = 1.140, p = 0.001 CI = 1.057-1.229). Sex and dysphagia do not appear to be associated with degeneration with (p = 0.26) and (p = 0.35) respectively.

**Conclusions** At the end of our study, the combination of PVS and esophageal cancer is far from rare. More than one third of our patients had a malignant transformation of the ring located at the Killian triangle. Endoscopic evaluation and screening should be done. Older age, low ferritin, and Killian mouth localization appear to be predictors of degeneration.

Friday, April 24, 2020

09:30 – 10:00

Capsule 2

ePoster Podium 7

### ePP115 IS SMALL BOWEL TRANSIT TIME A DETERMINANT FACTOR FOR THE DIAGNOSIS OF POTENTIALLY BLEEDING LESIONS AT CAPSULE ENDOSCOPY?

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DOI 10.1055/s-0040-1704510

**Aims** Small bowel capsule endoscopy (SBCE) is the gold standard in the study of small bowel bleeding (SBB). Recent studies suggested that longer small bowel transit times (SBTT) may be associated with higher diagnostic yield of SBCE. The aim of the study is to investigate if longer SBTT is a predictive factor of positive findings on SBCE in a population that performed SBCE due to suspected SBB.

**Methods** Retrospective study. Included consecutive SBCE between May 2007 and May 2019 due to suspected SBB. Positive SBCE was considered in the presence of lesions with high potential bleeding-P2, according to the Saurin classification.

**Results** Four hundred and seven patients performed SBCE between this period. Included 372 patients, 65.9% female with median age 67 (IQR: 19-97) years. From this population, P2 lesions were present in 133 (35.8%) patients.

We observed that patients with P2 lesions in SBCE presented longer SBTT (median: 297[55-670] versus 256[56-619] min; p=0.006), were older (p<0.001), more frequently males (p=0.016), suffered more frequently from hypertension (p=0.007), diabetes (p=0.035), chronic kidney disease (p=0.002) and heart failure (p<0.001). No differences were observed between patients with anticoagulants and antiplatelet agents. We found a significant correlation between SBTT and age (rs 0.136; p=0.008). SBCE with SBTT ≥ 4h presented higher rate of P2 lesions (40.0% vs 28.5%; p=0.025), mainly angioectasias (33.6% vs 24.1%; p=0.049). In logistic regression, the significant predictive factors of the presence of P2 lesions were age (OR 1.03; IC 95% 1.008-1.044; p=0.004), SBTT (OR 1.003; IC 95% 1.001-1.005; p=0.021) and male gender (OR 1.61; IC 95% 1.01-2.57; p=0.045).

**Conclusions** Patients with longer SBTT presented higher rates of lesions with high potential bleeding (P2). SBTT along with previous well defined factors-age and male gender were the only independent predictor factors of the presence of P2 lesions. This finding may suggest that slower passage of the capsule in the small bowel may allow a better diagnostic yield for significant lesions.

### ePP116 ORAL INGESTION VS ENDOSCOPIC PLACEMENT OF ENDOSCOPIC CAPSULE IN PATIENTS WITH PREVIOUS GASTROINTESTINAL SURGERY (ORENCES): A SPANISH MULTICENTER OBSERVATIONAL STUDY

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DOI 10.1055/s-0040-1704511

**Aims** Capsule endoscopy (CE) represents the first-choice technique to investigate the majority of small bowel diseases. Its most common complications are related to incomplete examinations and capsule retention. There is no agreement on how patients with previous gastrointestinal (GI) surgery should receive the capsule.

The primary endpoint was to compare technical success between oral ingestion of the capsule by the patient (OI) and endoscopic placement (EP) of the capsule. Secondary endpoint was to compare diagnostic efficacy and adverse events between the two groups.

**Methods** A retrospective observational study was conducted in 9 hospitals in Spain. Demographic data, previous surgery, indication for capsule endoscopy, intestinal transit time, diagnosis, technical success (percentage of capsules reaching the caecum), diagnostic yield (percentage of results compatible with indication for the exam) and adverse events were collected.

**Results** From January 2009 to May 2019 fifty-seven patients were included (39 men, mean age 66 ±15 years). The most common indications for the exam were "overt" (50.9%) and "occult" (35.1%) small bowel bleeding. Previous Billroth II gastrectomy and gastric bypass with Roux-an-Y were present in 52.6% and 17.5% of patients, respectively. The capsule was ingested orally in 34 patients and placed endoscopically in 23 patients. No significant differences were achieved between the OI and EP groups in terms of technical success (82.4% vs 78.3%; p=0.742), diagnostic yield (41.2% vs 52.2%; p=0.432), mean intestinal transit time (301 vs 377 min, p= 0.118) and incomplete procedures (5 vs 6; p=0.742). No capsule retention occurred. Only one severe AE (anastomotic perforation) was observed in the EP group.

**Conclusions** In our case series, there were no significant differences between the OI and EP in terms of safety, technical success and diagnostic yield. Being less invasive, the OI of the capsule should be the first-choice method in patients with previous GI surgery.

### ePP117 CLINICAL OUTCOME OF PATIENTS EXAMINED BY SMALL BOWEL CAPSULE ENDOSCOPY WITH NON-SPECIFIC ENTERITIS

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DOI 10.1055/s-0040-1704512

**Aims** As with isolated ileitis on colonoscopy the finding of nonspecific enteritis (NSE) on capsule endoscopy (CE) not meeting established diagnostic criteria poses a clinical challenge. There is lack of available evidence to help clinicians to predict significant disease and long-term prognosis. We aimed to define the natural history of NSE in an Irish cohort.

**Methods** A retrospective longitudinal cohort study. Patients with NSE on CE were identified. Clinical records were reviewed, and subsequent investigations, treatments and diagnoses were recorded. Exclusion criteria: known Crohn's disease, enteritis meeting a diagnostic threshold, < 3 months follow up or patients from external institutions. Patients were grouped based on ultimate diagnosis: Crohn's disease (CD), Irritable bowel syndrome (IBS), NSAID enteritis (NSAIDE), no significant disease (NAD), persistent NSE and other non-inflammatory conditions. Clinical and demographic parameters were compared between groups.

**Results** 157 (48%) cases were identified, 69 excluded. Of the NSE group (n= 88), 46 (52%) were male, mean age 52, mean follow up 23 months, baseline mean CRP, faecal calprotectin and Lewis Scores were 8.7, 63.8 and 597, respectively. Ultimate diagnoses: NAD 35 (40%), CD 17 (19%), NSAIDs 12 (14%), IBS 14 (16%), persistent NSE 2 (2%), other 8 (9%). Female gender was associated with IBS (OR 4.7, p < 0.02) and older age with NSAIDs enteritis (mean 64 vs 49 years, p < 0.006). Both NSAIDs and CD were associated with a higher baseline Lewis Score (831.7 vs 308.5, p=0.02). Anaemia was associated with NSAID enteritis (p=0.001). Faecal calprotectin and CRP were similar among groups. Significantly more CD patients were referred with suspected CD 82% vs 17%, p < 0.009. While anaemia was a more frequent indication in NSAIDE (75% vs 19%, p=0.05).

**Conclusions** Our study shows that 33% of patients have clinically significant disease (CSD) on follow up. Clinical suspicion and capsule severity are predictive of CSD.

Friday, April 24, 2020

09:30 – 10:00

Outcomes and Adverse events in bilipancreatic endoscopy

ePoster Podium 8

### ePP118 OUTCOMES OF ENDOSCOPIC ULTRASOUND (EUS)-GUIDED MICROFORCEPS BIOPSY OF PANCREATIC CYST LESIONS-A SINGLE CENTER EXPERIENCE

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DOI 10.1055/s-0040-1704513

**Aims: Background** EUS-guided microforceps biopsy (MFB) targeting wall of pancreatic cyst or a mural nodule can increase diagnostic yield of pancreatic cystic lesions (PCLs) and provides an adjunctive tool to FNA in an attempt to increase diagnostic accuracy.

**Aim** To assess the feasibility, diagnostic yield and complications of EUS-guided MFB performed on PCLs in a single tertiary care centre.

**Methods** We collected retrospective data from January 2018 to October 2019 for all patients undergone EUS FNA and MFB for PCLs identified on cross-

sectional imaging. We compared FNA and MFB results with CEA levels and surgical specimens of patients who had surgical resection.

**Results** Total of 36 EUS-FNA and MFB of PCLs were performed in 33 patients. 31 PCLs were found in body and tail of pancreas and 5 PCLs were in head and neck. MFB was technically successful in all cases. Twenty two samples were deemed adequate for histological diagnosis (yield 61%).

Out of 31 patients, 12 had CEA level higher than 192 microgram/Litre (mean=5405.5).

PCL type diagnosed on the tissue taken with MFB was mucinous cyst lesions in 13 (36%) patients, serous cyst adenomas in 3 (8.3%), pseudocysts in 3 (8.3%), lymphoproliferative cysts in 3 (8.3%) and was non-diagnostic due to inadequate sample in 14 (38.8%).

MFB ascertained diagnosis in 7 (19.4%) of those patients whose FNAs were non-diagnostic. On the other hand, FNA was diagnostic in 3 (8.3%) patients whose MFB was inconclusive due to inadequate samples.

Six of our patients underwent pancreatic surgery and resection histology matched MFB results in 5 of them.

There were no procedure-related major complications.

**Conclusions** EUS with microforceps biopsy sampling is technically feasible and safe procedure and could be a useful adjunct to EUS FNA. Further studies will be required to establish diagnostic accuracy and sensitivity of the method.

### ePP119 NON-STEROIDAL ANTI-INFLAMMATORY DRUGS (NSAIDS) REDUCE THE RISK OF PANCREATIC CYST GROWTH: RESULTS OF A 10-YEAR FOLLOW-UP STUDY

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**DOI** 10.1055/s-0040-1704514

**Aims** The chemopreventive action of NSAIDs was reported in previous studies. However, the effect of NSAIDs on pancreatic cysts (PC) remains unknown. We aim to evaluate the effects of NSAIDs on PC over a 10-year period.

**Methods** A cohort study of a prospectively maintained database of patients with abdominal imaging (MRI/CT) findings of PC from 2008-2018 was conducted. Patients without a history of pancreatic cancer, with a 10-year follow up and data on initial diagnosis were included. After excluding aspirin and statin, patients on NSAIDs were identified and compared to non-NSAIDs. Outcomes were measured at 1,3,5, and 10 years. These included increased growth, surgical intervention and high-risk transformation. Kaplan-Meier estimates and Cox proportional hazards models were used for time to high-risk transformation and surgery. Mixed effect logistic regression models were used to evaluate rate of growth overtime.

**Results** Of the 1,000 patients evaluated, 686 met the inclusion criteria. There were 80% IPMNs and 2.2% MCNs. There were 305 patients on NSAIDs (44.46%) and concomitant aspirin and/or statin use and 80 (11.66%) patients with only NSAID use. In multivariable analysis, NSAID use was associated with increased rate of high-risk transformation [HR: 1.11; 95% CI: 0.57-2.18; p=0.75] and surgery [HR: 1.24; 95% CI: 0.71-2.18; p=0.44], although this was not statistically significant. There was a decreased risk of growth among NSAID users when compared to those without NSAID, aspirin or statin use. This was significant over a 10-year period [OR: 0.48; 95% CI: 0.26-0.89; p=0.019].

**Conclusions** There is a protective effect of NSAIDs on the rate of growth of PC in this large 10 year follow up cohort study. This did not translate into reducing the rate of high-risk transformation or risk of surgery. This finding is not clinically applicable at this stage and further studies are needed.

### ePP120 MEASURING THE VALUE OF ENDOSCOPIC ULTRASOUND (EUS)- GUIDED DRAINAGE OF PANCREATIC FLUID COLLECTIONS: A SINGLE CENTER COMPARATIVE STUDY OF PLASTIC AND LUMEN APPOSING METAL STENTS

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**DOI** 10.1055/s-0040-1704515

**Aims** This study aimed to characterize the value of Endoscopic Ultrasound (EUS)-guided drainage of Pancreatic Fluid collections (PFCs) with either plastic or Lumen Apposing Metal Stents (LAMS).

**Methods** Single centre, retrospective-prospective comparative study of 39 patients who underwent EUS guided PFC drainage between 2009 and 2018. Procedure value was calculated using the formula Q/(T/C), where Q is the quality of procedure adjusted for complications, T procedure duration and C is the complexity adjustment. Quality and complexity were estimated on a 1-4 Likert scale based on American Society for Gastrointestinal Endoscopy criteria.(see table) Time (in minutes) was recorded from the patient entering and leaving the procedure room. Endoscopy time calculated from procedure time was considered a surrogate marker of cost as individual components of procedure cost were not itemized.

**Results** Of 39 identified patients who underwent EUS-guided PFC drainage, 11 received double pigtail plastic stents (DPSSs) and 28 received LAMSs. The two groups were comparable in age, gender and aetiology. 50% of the LAMS interventions were considered high value but only 10% of the Plastic stent interventions achieved the same. The difference predominantly was due to a higher rate of complications and longer procedure time with DPSS. The patients in the LAMS group were more complicated (mean complexity 1.6±0.69 versus 1.4±0.69; p=0.29) yet took less time (mean time in minutes 31.5 against 67.5; p<0.01) so giving better value (0.16±0.10 versus 0.04±0.032; p<0.0001).

**Conclusions** This study adds further weight to the evidence supporting LAMS guided EUS guided endoscopic drainage of pancreatic PFCs as compared to plastic stents.

► **Tab. 1** EUS Quality(A) and Complexity(B), four point Likert scale

Unsuccessful procedure OR Post-procedure complication	No sedation issues, no anticoagulation, low risk patient & straightforward drainage
Partially successful but requiring repeat procedure	a. Difficult sedation, ICU admission; patient >80 years or <16 years, significant co-morbidity OR b. WON OR c. Complex indication (eg DPD, varices, PFC drainage through duodenum)
Successful procedure	Two of a, b, c
Additional treatment, eg (necrosectomy; ERCP; Nasocystic catheters; percutaneous drainage; Multigated drainage) .	a, b & c

Friday, April 24, 2020

11:00 – 11:30

Per Oral Endoscopic Myotomy (POEM)

ePoster Podium 1

### ePP121V FLUOROSCOPY GUIDED POEM IN A SIGMOID ESOPHAGUS

**Authors** Uchima H<sup>1</sup>, Marin I<sup>2</sup>, Colan J<sup>2</sup>, Caballero EN<sup>2</sup>, Aguilar A<sup>2</sup>, Iborra I<sup>2</sup>, Calafat M<sup>2</sup>, Mañosa M<sup>2</sup>, Domenech E<sup>2</sup>, de Vega VM<sup>2</sup>

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DOI 10.1055/s-0040-1704516

**Background** Tunneling could be complicated in cases of esophageal tortuosity. A 32 years female with long history type I Achalasia with previous Heller. Clinical relapse and radiologic Sigmoid Esophagus.

**Endoscopic findings** POEM performed in supine. Mucosotomy with muscularis mucosa thickening. During tunneling, detour is notice and the path corrected following the circular muscularis propria fibers and checking esophageal tunnel lifting. Following, penetrating vessels are seen interpreted as the tunnel end. Due to tortuosity, fluoroscopy is used to confirm endoscope strengthened position. Myotomy and mucosal closure is performed.

**Conclusions** Fluoroscopy and circular muscularis propria fibers could be guides in sigmoid Esophagus during POEM.

### ePP122V PER-ORAL ENDOSCOPIC MYOTOMY IN THE MANAGEMENT OF ALLGROVE SYNDROME

**Authors** Iborra I<sup>1</sup>, Aguilar A<sup>1</sup>, Luna D<sup>1</sup>, Serra J<sup>1</sup>, Marin I<sup>1</sup>, Caballero N<sup>1</sup>, Colan J<sup>1</sup>, de Vega VM<sup>1</sup>, Domenech E<sup>1</sup>, Uchima H<sup>1</sup>

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DOI 10.1055/s-0040-1704517

**Background** Few reports of POEM as treatment for achalasia in Allgrove syndrome has been reported. A 27 year old woman with Allgrove syndrome. Surgical and medical approaches failed thus endoscopic approach was decided. High-resolution esophageal manometry-impedance (HREM-I) showed type I achalasia and severe bolus retention. Endoscopic findings: POEM performed using a T type hybrid knife with no complications. HREM-I one month after the procedure showed complete relaxation of the inferior sphincter and improvement on the bolus retention. No dysphagia or reflux on the follow-up.

**Conclusions** POEM could be an effective treatment in Allgrove syndrome related Achalasia.

### ePP123V MODIFIED PER ORAL ENDOSCOPIC MYOTOMY FOR ZENKER'S DIVERTICULUM (Z-POEM) WITH MUCOSAL INCISION OVER THE SEPTUM

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DOI 10.1055/s-0040-1704518

**Aims** Video presentation of a modified Z-POEM technique.

**Methods** A mucosal incision is created along the edge of the septum using a therapeutic gastroscope. Then a tunnel is performed on both sides of the septum and complete myotomy is performed. Finally, large clips are applied at the mucosal entry.

**Results** The technique of direct tunneling over the septum was technically feasible. In particular, it allowed the use of a large caliber endoscope and the deployment of large clips.

**Conclusions** Z-POEM with direct mucosotomy over the septum, consists in an alternative approach for the treatment of Zenker's diverticulum.

Friday, April 24, 2020

11:00 – 11:30

Cholangioscopy: Clinical practice

ePoster Podium 2

### ePP124 CLINICAL PRACTICE PATTERNS OF INDIRECT PERORAL CHOLANGIOPANCREATOSCOPY: AN INTERNATIONAL SURVEY

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DOI 10.1055/s-0040-1704519

**Aims** Indirect peroral cholangiopancreatography (IPOC) is a new diagnostic and therapeutic tool for biliopancreatic diseases. Little is known about its use in daily clinical practice. We conducted an international survey to evaluate differences in use of IPOC between endoscopists from various countries.

**Methods** An online survey was developed comprising 66 questions regarding the experience, technique and biliopancreatic indications of IPOC. The survey was sent to members of the European and German Cholangioscopy Group, and authors who published on IPOC in the past 5 years.

**Results** Eighty-three respondents completed the survey, from 23 countries across Europe and the Middle-East. Twenty respondents (24.1%) performed >100 cholangioscopies lifetime and 4 (4.8%) >100 pancreatoscopies lifetime. Main indications for cholangioscopy were determination of indeterminate biliary strictures (n=81 (97.6%)) and removal of bile duct stones (n=75 (90.4%)), accounting for an estimated use of 40% (IQR 32.5) and 40% (IQR 40), respectively. Eleven respondents (13.9%) have an institutional standardized protocol for targeted cholangioscopy-guided biopsy sampling. Twenty-seven respondents (36%) use IPOC with lithotripsy as first-line treatment in selected patients with bile duct stones. Electrohydraulic (EHL), laser lithotripsy (LL) or both tools are used by 46 (61.3%), 17 (22.7%) and 12 (16%) respondents, respectively.

Pancreatoscopy is used for removal of pancreatic duct stones, determination of pancreatic duct strictures and delineation of intraductal papillary mucinous neoplasm, by 63 (75.9%), 38 (45.8%) and 30 (36.1%) respondents, respectively. Removal of pancreatic duct stones accounts for an estimated use of 78% (IQR 45) use. EHL, LL or both tools are used by 43 (68.3%), 12 (19.1%) and 8 (12.7%) respondents, respectively.

**Conclusions** This is the first international survey on the clinical practice of IPOC, showing a wide variation in use of IPOC. These results emphasizes the need of studies and development of an international consensus guideline to standardize the practice and quality of IPOC.

## ePP125V REMOVAL OF FRAGMENTED MIGRATED PANCREATIC STENT FROM PANCREATIC DUCT USING SPYGLASS CHOLANGIOSCOPY

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DOI 10.1055/s-0040-1704520

Stent migration, fracture, and dislocation are relatively rare complications associated with pancreatic stenting.

We report a case of 26 year old female with chronic pancreatitis and a proximal stricture referred for removal of fragmented piece of previously placed pancreatic stent. Stricture was dilated by balloon. Spyglass DS was then introduced into the PD over the guide wire and passed through the stricture and stent visualized. Spyglass snare used to grab the stent piece and removed along with the spyscope under fluoroscopy.

No adverse event recorded and patient was discharge and remained asymptomatic at follow-up.

## ePP126 DIGITAL CHOLANGIOSCOPY FOR DETECTION OF MISSED STONES IN THE BILE DUCTS AFTER ENDOSCOPIC THERAPY- A SINGLE CENTER STUDY

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DOI 10.1055/s-0040-1704521

**Aims** To evaluate the efficacy and safety of digital cholangioscopy for detection of missed or retained bile ducts stones after conventional endoscopic therapy.

**Methods** Data was collected retrospectively from a prospective data base from January to December 2018. A total of 149 patients with choledocholithiasis were treated by ERCP and stone removal. Among them 38 patients underwent digital cholangioscopy after stone extraction and negative occlusion cholangiogram to exclude residual stones. The indications for cholangioscopy were at least one of the following: when mechanical lithotripsy was performed, when multiple stones (over 3) were extracted or when the common bile duct was dilated (over 15 mm), leading to difficulties to obtain good quality cholangiography. We also explored factors like common bile duct diameter, presence of distal bile duct stricture, duodenal diverticula or surgically altered anatomy and their possible relation with the probability of missed stones.

**Results** Residual stones were found in 26,3% (10) of cases. In 18,4% (7) the stones were in the common bile duct, in 5,3% (2)- in the intrahepatic bile ducts and in 2,6% (1)- in the cystic ducts stump. No correlation between the common bile duct size and the presence of residual stones was found. The distal common bile duct stricture, duodenal diverticulum or surgically altered anatomy were not found to be risk factors for retained lithiasis after conventional endoscopic therapy. No adverse events were observed in the studied group of patients.

**Conclusions** Factors like common bile duct size, presence of ductal stricture, duodenal diverticulum or surgically altered anatomy cannot predict the risk of residual stones, missed by occlusion cholangiogram. Digital cholangioscopy is safe and highly effective in the detection of fluoroscopically missed bile duct lithiasis and should be considered to confirm ductal clearance in some clinical scenarios. Further studies are needed to evaluate the cost effectiveness.

Friday, April 24, 2020  
Subepithelial tumors

11:00 – 11:30  
ePoster Podium 3

## ePP127 EUS DIAGNOSIS AND NATURAL COURSE OF SUBEPITHELIAL TUMORS IN THE UPPER GI TRACT - DATA FROM A TERTIARY REFERRAL CENTER

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DOI 10.1055/s-0040-1704522

**Aims** Subepithelial tumors (SET) are found in 1-2% of upper endoscopies. Usually, endoscopic ultrasound (EUS) is performed as the next diagnostic step in order to determine the layer from which the SET arises and to describe the EUS features. Data from large tertiary centers on the diagnostic value of EUS and the natural course of SET are scarce.

**Methods** We retrospectively analyzed data from 198 patients (female: male 48,5%: 51,5%; mean age 61.7 years, range 27 - 89) referred to our center for EUS evaluation of SET of the upper GI tract between 01/01/2013 and 15/06/2019. Endoscopy databank was searched for different key words in order to extract all EUS reports with SET.

**Results** The mean size of SET was 17.7mm (range 3.0 - 80.0mm) and they were localized in the esophagus (n=23; 11.6%), stomach (n=137; 69. 2%) and duodenum (n=38; 19.2%). Histological diagnosis was obtained in 59 patients. GIST were the most frequent SET (50.8%) followed by leiomyoma (13.6%) and neuroendocrine tumors (NET; 11.9%), heterotopic pancreas (8.5%), lipoma (3.4%), brunneroma (3.4%), lymphoma (1.7%) and bronchogenic cyst (1.7%). GIST of the stomach had more likely an inhomogeneous echotexture (OR 5.5), contact to the proper muscle layer (OR 22.5) and a location in the gastric corpus (OR 4.2). The mean tumor growth in the population was 0.73mm a year. Malignant SET were diagnosed in 36 patients (18.2%) and sensitivity, specificity, NPV and PPV of EUS diagnosing malignant SET were 100%, 47.6%, 100% and 76.6%, respectively.

**Conclusions** EUS is an important diagnostic measure to differentiate benign from malignant SET. All malignant SET could be identified by EUS in our series and sent for definite treatment. Location in the gastric corpus, inhomogeneous echotexture and contact to the proper muscle layer were significantly associated with GIST diagnosis.

## ePP128 MALIGNANT POTENTIAL OF GASTRIC SUBEPITHELIAL HYPOECHOIC SOLID MASS IMAGED BY ENDOSCOPIC ULTRASONOGRAPHY: A LARGE PROSPECTIVE SINGLE CENTER OBSERVATIONAL STUDY

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DOI 10.1055/s-0040-1704523

**Aims** The malignant potential of gastric subepithelial hypoechoic solid masses (GSHSM) imaged by endoscopic ultrasonography (EUS) is unclear. The aim of this study was to calculate the proportion of malignant tumors in GSHSM using endoscopic ultrasound guided fine needle aspiration (EUS-FNA) results from a large number of patients who have a GSHSM diagnosed by EUS.

**Methods** From October 2002 to December 2018, 315 consecutive patients with a diagnosis of GSHSM larger than 1cm by standard EUS who underwent EUS-FNA with immunohistochemical analysis were enrolled in this observational study. The technical results and histologic findings of EUS-FNA for GSHSMs were prospectively assessed.

**Results** The diagnostic rate of EUS-FNA for GSHSM was 86% (270/315). There was no major complication. Histological diagnosis of EUS-FNA, excluding 45 patients with inconclusive diagnosis due to inadequate specimens, showed

72% (195/270) malignant lesions (GIST:69%, SET like cancer: 1%, malignant lymphoma: 1%, metastatic cancer: 1%), and 28% (75/270) benign lesions (leiomyoma: 16%, neurinoma: 5%, ectopic pancreas: 4%, Glomus tumor: 2%, and others: 1%).

**Conclusions** The malignant potential of GSHSM diagnosed by EUS is high. If we find GSHSM during EUS, performing EUS-FNA is desirable to obtain conclusive immune-histological diagnosis for early appropriate treatment.

### ePP129 COMPARISON OF ENDOSCOPIC ULTRASOUND FINE NEEDLE ASPIRATION (FNA) VERSUS FINE NEEDLE BIOPSY (FNB) AND IMPACT OF RAPID ON-SITE EVALUATION IN THE DIAGNOSIS OF SUBEPITHELIAL LESIONS

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DOI 10.1055/s-0040-1704524

**Aims** While conventional endoscopic ultrasound-guided fine needle aspiration (EUS-FNA) remains first-line for sampling subepithelial lesions (SELs), variable accuracy has resulted in increased utilization of fine needle biopsy (FNB) to improve diagnostic yield. The primary aim of this study was to compare FNA versus FNB for diagnosis of SEL.

**Methods** This was a multi-center, retrospective study to evaluate the outcomes of EUS-FNA and EUS-FNB of SELs over a 3-year period. Demographics, lesion characteristics, sensitivity, specificity, accuracy, number of needle passes, diagnostic adequacy of rapid on-site evaluation (ROSE), cell-block accuracy, as well as adverse events were analyzed. Subgroup analyses were performed comparing FNA versus FNB by location as well as diagnostic yield with or without ROSE. Multivariable logistic regression was also performed.

**Results** A total of 229 patients with SELs (n=115 FNA and n=114 FNB) underwent EUS-guided sampling. Mean age was 60.86±12.84 years. Most lesions were gastric in location (75.55%) and from the fourth layer (71.18%). Cell-block for FNB required fewer passes to achieve conclusive diagnosis (2.94±1.09 versus 3.55±1.55;  $P=0.003$ ). Number of passes were not different for ROSE adequacy ( $P=0.167$ ). Immunohistochemistry (IHC) was more common among FNB samples (69.30% versus 40.00%;  $P<0.001$ ). Overall, sensitivity and accuracy were superior for FNB versus FNA [(79.41% versus 51.92%;  $P=0.001$ ) and (88.03% versus 77.19%;  $P=0.030$ )]. On the subgroup analysis, sensitivity and accuracy of FNB alone was superior to FNA+ROSE [(79.03% versus 46.67%;  $P=0.001$ ) and (87.25% versus 68.00%;  $P=0.024$ )]. There were no significant difference in diagnostic yield of FNB alone versus FNB+ROSE ( $P>0.05$ ). Multivariate analysis showed no predictors associated with accuracy. One minor adverse event was reported in the FNA group.

**Conclusions** EUS-FNB is superior to EUS-FNA in the diagnosis of SELs. EUS-FNB was superior to EUS-FNA alone and EUS-FNA+ROSE. These results suggest EUS-FNB should be considered a first-line modality and suggest a reduced role for ROSE in the diagnosis of SELs.

Friday, April 24, 2020

11:00 – 11:30

Artificial Intelligence for characterization and quality assessment

ePoster Podium 4

### ePP131 ENDOANGEL, AN ARTIFICIAL INTELLIGENCE, IMPROVES ENDOSCOPY QUALITY AND DETECTS EARLY GASTRIC CANCER IN A MULTI-CENTER RANDOMIZED CONTROLLED TRIAL

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DOI 10.1055/s-0040-1704525

**Aims** Qualified esophagogastroduodenoscopy (EGD) is considered as a prerequisite for detecting early gastric cancer (EGC). Whether ENDOANGEL, an artificial intelligence (AI), can be used as an effective quality monitoring tool needs to be verified. Thus, a multi-center randomized controlled trial was implemented to verify the quality monitoring function of ENDOANGEL and to test the performance of ENDOANGEL on detecting EGC in clinical scenes.

**Methods** ENDOANGEL was developed using deep convolutional neural networks and deep reinforcement learning. Patients undergoing EGD examination in 5 hospitals were randomly assigned to ENDOANGEL-assisted (EA) group or normal control (NC) group. The primary outcome was the number of blind spots. The secondary outcomes were inspection time, the accuracy, sensitivity and specificity of ENDOANGEL on detecting EGC.

**Results** 1,050 patients were recruited and randomized. 498 and 504 patients in EA and NC groups were respectively analyzed and compared for all outcomes. Compared with NC, the number of blind spots was less (5.382±4.315 vs. 9.821±4.978,  $p<0.001$ ) and the inspection time was prolonged (5.400±3.821 min vs. 4.379±3.907 min,  $p<0.001$ ) in EA group. 3 and 2 EGC cases were found in EA and NC groups respectively. ENDOANGEL achieved per-patient accuracy of 70.9%, 74.7% and 72.2% in white light imaging (WLI), narrow band imaging (NBI) and magnifying NBI (M-NBI), respectively. We refined the EGC detection model in ENDOANGEL and retested it on the same EGD data of enrolled patients, and it showed increased accuracy of 75.4%, 79.3% and 81.5% in WLI, NBI and M-NBI, respectively.

**Conclusions** The results of the multi-center study confirmed that ENDOANGEL is an effective system to improve the quality of EGD and has the potential to detect EGC in real time.

### ePP132 AUTOMATED POLYP SIZE ESTIMATION WITH DEEP LEARNING REDUCES OVERESTIMATION BIAS

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DOI 10.1055/s-0040-1704526

**Aims** Polyp size is directly correlated with risk of future CRC and growth invasiveness. Despite its big impact, endoscopists typically provide a visual size estimation, but several studies have reported low accuracies. We aim to enable more accurate in-vivo polyp size measurements and ultimately reduce clinical mis-sizing by endoscopists. Therefore, we developed an AI system that can objectively infer polyp size based on a reference tool in the endoscopic image.

**Methods** We use a biopsy forceps as reference tool and apply two separate deep learning algorithms: (1) delineation of the polyp and (2) detection of two landmarks on the forceps. Since the exact dimensions of the forceps are known, we can compute the actual size of the polyp. For polyp delineation (1), we collected colonoscopy videos from 206 patients with 825 polyps for training the system. For the forceps detection (2), we collected videos from 41 patients with 69 polyps and extracted 289 frames containing a polyp and open forceps.

We report the trimmed average of the difference in size between the endoscopist or algorithm and the ground truth. The latter is defined by manually delineating the polyp and the two landmarks and is validated in a colon phantom.

**Results** The size estimation can detect the polyp and forceps in 71% of the test images. The trimmed average difference is + 0,52 mm (SD 1,78 mm) and + 1,40 mm (SD 1,82 mm) between the ground truth and predicted size by the algorithm or endoscopist respectively. Our algorithm thus leads to a decrease in overestimation bias by 63% (p-value < 0.1).

**Conclusions** We show that automated delineation of the polyp and forceps detection helps in estimating polyp size and significantly reduces the endoscopists' estimation error. This can lead to better surveillance interval decisions, but we will evaluate this in a larger patient cohort.

Friday, April 24, 2020

11:00 – 11:30

Advanced imaging in colon

ePoster Podium 5

### ePP133 ENDOSCOPIC ANALYSIS OF MICROSTRUCTURES OF THE COLON MUCOSA ON THE EDGE OF THE POST-RESECTION DEFECT AS A MEASURE OF PREVENTING RECURRENCE OF POLYPS AFTER POLYPECTOMY

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DOI 10.1055/s-0040-1704527

**Aims** To assess the usefulness of cold polypectomy of small colon polyps on the basis of endoscopic microstructural analysis of the edges of the post-resection defect.

**Methods** In 74 patients 103 colon polyps were detected. These were up to 10 mm in size, without signs of severe dysplasia or cancer. Most of the polyps (81/103;78.7%) were of flat-elevated and were of polypoid 21/103;20.3%. The polyps were resected with a cold snare. A complete endoscopic analysis of the microstructures and the capillary vessels of the mucosa was performed on the edge of the post-resection defect.

**Results** The criteria followed post cold polypectomy in order to check its success were: endoscopic visualization on the edge of the post-resection defect of 1)parallel crypts and 2)the pit pattern of type I (S.Kudo). This was observed in 93(90.3%) cases. In 10(9.7%) cases, single extended modified crypts were found, with violation of their parallelism, which was a sign of residual tissue. A combined removal technique was used – a cold snare, supplemented with biopsy forceps for the purpose of radical intervention. We noted differences in the location of the crypts of the rectum. In this area, the loss of parallelism of the crypt is determined; the irregularity of the structure giving the impression of “falling crypts”. An endoscopic assessment of the capillary network of the colon mucosa was performed. Flat-elevated polyps have capillary vessels that are small in diameter, which significantly reduces the risk of bleeding. Follow-up colonoscopies were performed on 11(10.7%) patients: no recurrence of polyps were detected.

**Conclusions** An assessment of the edges of the post-resection defect of the mucosa after cold polypectomy provides a reliable diagnosis of the complete success of the endoscopic intervention and the possibility of removing residual tumor tissue (if present) immediately after its completion, and therefore reduces the number of recurrence of tumors.

### ePP134 USING OF ACETIC ACID CHROMOENDOSCOPY FOR THE DIAGNOSIS OF SERRATED COLON POLYPS

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DOI 10.1055/s-0040-1704528

**Aims** To increase the efficiency of endoscopic diagnosis of serrated colon polyps during colonoscopy

**Methods** 71 polyps were detected in 57 patients in all parts of the colon: 27 (38%) – < 5 mm; 36(50,7%)- 6-10 mm; 8(11,3%) – > 10 mm. The macroscopic type was 0-Ila –50(70,2%), 0-Is –21 (29,5). During colonoscopy, 1.5%-acetic acid, 5 ml, was sprayed onto the identified polyps. Mucosa was observed endoscopically for 2 minutes. Then lesions were removed and sent for pathology examination.

**Results** Use of acetic acid leads to fast acetowhitening reaction of lesions and surrounding mucosa. 2 groups were distinguished: 1) Loss of acetowhitening (LAW) of lesions occurs earlier than LAW of surrounding mucosa. 2) LAW of lesions occurs later than LAW of surrounding mucosa. Group 1 includes 29 (40,8%) polyps, 89,6% of which were non-serrated: 21(72,4%) – tubular adenoma; 5(17,2%)- tubular-villous adenoma, one of which had high-grade dysplasia. Only 3(10,3%) polyps were serrated – hyperplastic polyps. Group 2 includes 42 (59,2%) polyps, 97,6% of which were serrated: 27(64,3%) – hyperplastic polyp; 13(30,9%) – sessile serrated adenoma, including one with low-grade dysplasia, 1(2,4%) – traditional serrated adenoma. Only 1(2,4%) polyp was non-serrated – tubular adenoma. This suggests that the LAW of serrated polyps is delayed compared to the LAW of the surrounding mucosa. On the contrary, LAW of non-serrated polyps occurs faster than LAW of surrounding mucosa. LAW of 4(5,6%) polyps was atypical; the reason for this reaction requires further investigation.

**Conclusions** Use of acetic acid can be used as a diagnostic method to determine the serrated polyps during colonoscopy in real time.

### ePP135 “BASIC” CLASSIFICATION FOR COLORECTAL POLYPS: EVALUATION OF THE EFFICACY A QUICK TRAINING

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DOI 10.1055/s-0040-1704529

**Aims** Advanced endoscopic imaging has revolutionized the characterization of polyps during colonoscopy. Many classifications (Kudo, NICE, Sano, WASP, CON-NECT) were used based on the appearance of the pit pattern or vessels, the color or the macroscopic appearance of the polyps, the existence or not of a depression. A new BASIC classification covering all of these criterias was proposed and validated for the BLI(FUJIFILM). The main objective of this study is to evaluate the performance of senior non expert endoscopists after rapid training (< 24 hours) in the characterization of colorectal polyps.

**Methods** The study took place during endoscopy training days in June 2019. All participants had a theoretical training in different existing classifications. The next day, they had a presentation on the BASIC classification. An immediate evaluation included 20 quiz combining videos and photos for each case. All colic lesions had a diameter < 10 mm. Of the 20 quizzes, 6 corresponded to

hyperplastic polyps (PH), 10 to adenomas and 4 to sessile serrated adenomas. For each video, the participant had to indicate the final diagnosis and identify the 3 components used in the BASIC classification (aspect of the surface, existence or not of a pit pattern, the appearance of the vessels).

**Results** 76 senior gastroenterologists participated in this study. Average age was 34 years. 76% practiced in France and 24% in foreign countries. The average number of colonoscopies performed per year was 100. The percentage of correct answers on the total number of quizzes was 55%. It was 50% for adenomas, hyperplastic and SSA/P respectively. There was no difference between doctors practicing in France and abroad. Less than 4% of gastroenterologists had a diagnostic score > 90%.

**Conclusions** Condensed training seems to be insufficient to acquire an acceptable level of reliability in the characterization of colorectal polyps. Will artificial intelligence replace the human intelligence in the upcoming years?

Friday, April 24, 2020

Variceal bleeding

11:00 – 11:30

ePoster Podium 6

### ePP136 DANIS STENT: A CASE SERIES OF PATIENTS WITH REFRACTORY OESOPHAGEAL VARICEAL BLEEDING

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DOI 10.1055/s-0040-1704530

**Aims** To assess the safety and efficacy of DANIS self-expandable metal stent (SEMS) in treatment of refractory variceal oesophageal bleeding.

**Methods** A retrospective observational study in a district general hospital from December 2015 to Oct 18.

**Results** We identified 12 admissions.

The median Child-Pugh (CP) score was 7.5 (IQR 2.5, Range = 6–11) and a median Model for End-Stage Liver Disease (MELD) score of 12.5 (IQR 6.5, Range 9–35).

All patients had evidence of OVB on endoscopy and failed band ligation therapy.

SEMS was successfully deployed in 75% (N = 9) of the cases and achieved immediate haemostasis.

The median dwell time of SEMS stent was 13 days (IQR = 18, Range 1–202).

8 patients had no further bleeding during their admission (Median stent dwell time = 14 days [IQR = 18.5]). From these 2 patients were transferred to a tertiary centre and received trans-jugular intrahepatic portosystemic shunt (TIPS) before removal of SEMS.

3 (25%) patients rebled. Further endoscopic treatment was successful in 1 patient and the other 2 died from uncontrollable bleeding.

Post treatment complications occurred in 6 (50%) patients. 4 patients (33%) had stent migration, 1 patient developed right sided chest pain (resolved after stent removal) and 1 patient developed stent-related ulceration and stricture formation.

The overall 30-day mortality was 25% (3/12) with a 1-year mortality of 42% (5/12). 2 patients died from uncontrolled bleeding within the first 5 days of admission. Another patient died from complications of alcoholic liver disease 30 days after SEMS insertion. One died 4 months post SEMS insertion from hepatocellular carcinoma (HCC) and one died 6 months post SEMS insertion from recurrence of gastrointestinal bleeding.

**Conclusions** DANIS stent (SEMS) is effective in controlling refractory oesophageal variceal bleeding. It may also serve as a bridging therapy to allow transfer for further intervention.

We recommend timely removal of DANIS stents to minimise complications.

### ePP137 SELF-EXTENDABLE METAL STENT AS SALVAGE TREATMENT MODALITY IN ACUTE SEVERE VARICEAL BLEEDING

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DOI 10.1055/s-0040-1704531

**Aims** The use of the self-extendable metal stent (SEMS) in severe esophageal variceal bleeding (EVB) is gaining recognition. The aim of the study was to assess factors associated with early rebleeding.

**Methods** Fifty-nine patients with EVB treated with placement of SEMS from January 2011 to November 2019 in the Department of General, Transplant and Liver Surgery (Medical University of Warsaw) were retrospectively analyzed. The primary outcome measure was 5-day control bleeding. The secondary outcome measure was early rebleeding within 6 weeks. The Chi-square distribution, logistic regression and ROC curve were used for analysis.

**Results** The main aetiology of liver cirrhosis was alcoholic liver disease (26 patients; 44.8%). Median Model for End-stage Liver Disease (MELD) score was 24, median of blood units transfused was 9. Five-day failure to control bleeding was observed in 17 patients (29.3%). Rebleeding within 6 weeks was observed in 10 patients (17.2%). The successful 5-day bleeding control was higher when fibrinogen concentration was above 126 mg/dL (52.3% vs 18.2%; p = 0.029; AUC = 0.68; 95% CI: 0.503–0.846). No other liver dysfunction variables, such as platelet count (p > 0.05) or MELD (p > 0.05), were found affecting five days bleeding risk.

**Conclusions** Fibrinogen concentration affect early rebleeding from severe esophageal variceal in patients with salvage treatment with SEMS placement.

### ePP138 PREDICTORS OF POST BANDING-ULCER BLEEDING AFTER ENDOSCOPIC VARICEAL LIGATION

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DOI 10.1055/s-0040-1704532

**Aims** Bleeding related to post banding-ulcer is a rare life-threatening complication of endoscopic variceal ligation (EVL) in cirrhotic patients with esophageal varices (EV). The aim of this study was to determine the incidence and predictive factors of EVL induced ulcer bleeding.

**Methods** We performed a retrospective single study center including cirrhotic patients undergoing EVL in prophylaxis or acute hemorrhage of esophageal varices between 2014 and 2018. The diagnosis of EVL-induced ulcer bleeding was made endoscopically showing bleeding from an ulcer due to the slippage of the rubber band.

**Results** A total of 89 consecutive patients were included with a sex ratio of M/F of 1.02. The mean age was 61 years ± 11 [20–64]. The Child-Pugh classification of enrolled patients was A in 34 (38.2%) patients, B in 44 (49.4%) patients, and C in 11 (12.3%) patients. The form of EV was classified as F1 in one (1.1%) patient, F2 in 23 (25.8%) patients and F3 in 65 (73%) patients. EVL was indicated for primary prophylaxis in 11.2% of cases and for secondary prophylaxis in 88.8% of cases. Ulcer bleeding following EVL was observed in 4 patients (4.49%). The mean interval between EVL and bleeding was 6.8 ± 5.07 days. Independent predictors of ulcer related bleeding were MELD score > 15 at admission (p = 0.04), concomitant gastric varices (p = 0.047) and low platelet to spleen diameter ratio (p = 0.02). In our study high APRI score, peptic oesophagitis and low prothrombin time index were not significantly associated to EVL-induced ulcer bleeding.

**Conclusions** Post-banding ulcer bleeding is a severe and not common complication of EVL. Patients with high MELD score, low platelet to spleen diameter ratio or concomitant gastric varices should be observed for signs of induced ulcer bleeding after EVL.

Friday, April 24, 2020  
Lower GI bleeding 1

11:00 – 11:30  
ePoster Podium 7

### ePP139 RISK FACTORS FOR ENDOSCOPICALLY SEVERE ISCHEMIC COLITIS (IC)

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**DOI** 10.1055/s-0040-1704533

**Aims** IC is a relatively common disease caused by a transient colonic hypoperfusion. Aims of this study were to identify risk factors for endoscopic severity, and show epidemiology, clinical presentation, endoscopic findings and outcomes of IC.

**Methods** This is a single-center retrospective analysis of consecutive patients diagnosed from January 2013 to December 2018. All patients underwent colonoscopy. According to endoscopy, IC was scored as grade 1 (hyperemia, < 1 cm erosions and non-confluent ulcers), grade 2 (> 1 cm superficial, partially-confluent ulcers) and grade 3 (deep/diffuse ulcers or necrosis). To compare homogeneous groups and analyze clinical or prognostic differences, IC were grouped into "minor ulcers" (Group A; grade 1) and "major ulcers" (Group B; grade 2 and 3).

**Results** 227 patients (M:F = 60:167) were included. Average age was 72.7 years old (SD ± 16.2). Risk factors associated with IC were hypertension (63.4%), ischemic vascular disease (35.8%), dyslipidemia (28.6%) and diabetes (13.2%). 11% of patients had a previous history of IC. Clinical presentation was rectal bleeding (85.5%), abdominal pain (83.3%), diarrhea (53.3%) and constipation (3%). 40% experienced "triad symptoms" (sudden cramping abdominal pain, urgent desire to defecate, bloody diarrhea). IC were scored as grade 1 in 60.4%, grade 2 in 27.3% and grade 3 in the remaining 12.3%. IC involved sigmoid colon and rectum in 30.4% and descending and proximal colon in 55.5% and 14.1% patients, respectively. Median length of stay was 5.2 days (range 3–11). No surgery recorded. Death occurred in 1.3%. At univariate analysis, patient's factors associated with endoscopic high-grade IC (Group B) were age ( $p = 0.09$ ), diabetes ( $p = 0.09$ ) and leukocytosis or creatinine  $\geq 1.5$  mg/dL at hospital admission ( $p = 0.032$ ). At multivariable, leukocytosis and creatinine remained significantly associated with high-grade IC (ORs, 1.92; 95% CI:1.07–3.52;  $p = 0.030$ ).

**Conclusions** Elevation of creatinine and leucocyte at hospital admission seem related with severe IC and might be used to stratify patients.

### ePP140 DEVELOPMENT AND VALIDATION OF A RISK SCORING MODEL FOR EARLY PREDICTION OF SEVERE ISCHEMIC COLITIS

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**DOI** 10.1055/s-0040-1704534

**Aims** Ischemic colitis(IC) is considered to be an intestinal injury as a result of insufficient blood flow and clinical severities of IC can range from mild to life-threatening emergency.

**Methods** In a retrospective study, we analyzed medical records of patients with IC admitted to Chungnam National University Hospital from January 2010 to December 2018. We defined patients with severe IC if they need for surgery either immediately or after initial conservative management, if death occurred after hospitalization, if symptoms persist after 2 weeks. By using the possible confounders from the estimated logistic regression analysis, we obtained a new risk scoring model for early prediction of severe IC. Also using area under the receiver operating characteristics curve (AUROC), we assessed accuracy of our new risk scoring model.

**Results** A total of 274 patients with endoscopic evaluated IC were included. Of the patients, 181 (66.1%) were classified as severe IC. In a multivariate analysis, following factors were independently and significantly associated with severe IC: tachycardia (adjusted odds ratio(OR), 8.591; 95% confidence interval(CI), 2.199–33.569;  $p = 0.002$ ), elevated C-reactive protein (OR, 3.812; 95% CI, 2.083–6.976;  $p > 0.001$ ), Favier endoscopic classification  $\geq$  Stage 2 (OR, 3.736; 95% CI, 2.070–6.743;  $p > 0.001$ ), and history of hypertension (OR, 1.946, 95% CI, 1.097–3.454;  $p = 0.02$ ). The AUROC of our new risk scoring model to predict severe outcome of IC was 0.749 (95% CI, 0.694–0.800;  $p > 0.001$ ).

**Conclusions** A risk scoring model based on presence of tachycardia, elevated C-reactive protein, unfavorable endoscopic finding by Favier's classification and history of hypertension could be used to predict the severe outcome of IC in early stage.

### ePP141 UTILITY OF SHOCK INDEX FOR RISK STRATIFICATION IN ACUTE LOWER GASTROINTESTINAL BLEEDING

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► **Tab. 1** Auroc and Ic 95 % for Shock Index and Risk Scores

Score	Transfusion	Treatment	Clinical intervention	Rebleeding
Shock index	0.58 (0.51–0.64)	0.49(0.4–0.57)	0.55 (0.49–0.61)	0.58 (0.45–0.69)
Gbs/pre endoscopic rockall	0.89 (0.85–0.92) 0.70 (0.65–0.70)	0.65 (0.56–0.73) 0.56 (0.49–0.64)	0.72 (0.63–0.81) 0.68 (0.62–0.73)	0.72 (0.63–0.81) 0.68 (0.60–0.76)
Oakland/strate/velayos/newman/	0.89 (0.85–0.93) 0.67 (0.62–0.73) 0.78 (0.74–0.82) 0.78 (0.73–0.82)	0.63 (0.55–0.72) 0.60 (0.52–0.67) 0.65 (0.57–0.73) 0.64 (0.56–0.71)	0.82 (0.77–0.86) 0.65 (0.60–0.71) 0.74 (0.70–0.79) 0.75 (0.70–0.79)	0.74 (0.65–0.83) 0.67 (0.59–0.76) 0.68 (0.60–0.76) 0.68 (0.60–0.75)

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DOI 10.1055/s-0040-1704535

**Aims** The aim of this study was compare the utility of Shock Index (SI) for predicting outcomes on acute lower gastrointestinal bleeding (LGB).

**Methods** SI (heart rate divided by systolic blood pressure) is a simple tool. The outcomes considered: a) Transfusion, b) Treatment (endoscopic, vascular embolization or surgery), c) Clinical intervention (transfusion and treatment), d) Rebleeding, and e) Readmission in patients with LGB between scores used for risk prediction in upper gastrointestinal bleeding (Glasgow-Blachford Score (GBS) and Pre-endoscopic Rockall) and in LGB (Oakland, Strate, Velayos and Newman scores).

Retrospective study from January 2013 to December 2017. Area under the receiver operating characteristic (AUROC) curve were calculated for SI and the different risk scores for each outcome.

**Results** A total of 406 patients were identified. Median age was 76.6 years, 53.8% were men. The most common source bleeding was diverticular (28.3%). SI was not useful to predict any outcome. The SI was similar to the acute LGB scores for prediction rebleeding or readmission. The GBS and Oakland score was the best for predicting transfusion and clinical intervention. All the risk scores were more accurate for determining need transfusion than need treatment or clinical intervention.

The AUROC curve and outcomes are shown in ► **table 1**.

**Conclusions** SI was not useful to predict any outcome. Both Oakland Score and GBS were superior for predicting transfusion or clinical intervention. The GBS may be and useful tool for risk stratification in LGB. It can be used for as common score for predicting need of clinical intervention in upper and lower gastrointestinal bleeding.

Friday, April 24, 2020

Efficacy and efficiency of colorectal polypectomy

11:00 – 11:30

ePoster Podium 8

## ePP142 CAUSES OF DELAY IN POST-POLYPECTOMY COLONOSCOPY AND ITS IMPACT: A PROSPECTIVE OBSERVATIONAL STUDY

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DOI 10.1055/s-0040-1704536

**Aims** Regular colonoscopies are programmed based on guidelines. But the causes of delayed colonoscopy and the impact on the outcome have been very little studies.

The main objective of our study was to evaluate the reasons for delay in post-polypectomy colonoscopy. The secondary objective was to evaluate the impact of the delay on the number of pre-neoplastic or neoplastic events diagnosed.

**Methods** This is an observational prospective study that took place in an ambulatory endoscopy center, from January 2018 to June 2019. Inclusion criteria was all patients undergoing surveillance colonoscopies. The primary endpoint included the incidence and reasons for delay in post-polypectomy colonoscopy. The secondary endpoint was the impact of delay on preneoplastic or neoplastic events.

**Results** Of a total of 693 control colonoscopies, 25 % were delayed (172 patients). The main cause of delay was the patient forgetting the appointment (38 %). The average delay was 2,8 years. In this late population (compared to control patients), a nonsignificant increase in the number of polyps per patient (1,32 vs 1,19 p = 0,31) and the proportion of large polyps

(5 % vs 2 %; p = 0,21 for a size > 2 cm) were highlighted. The number of CRC was significantly higher (1 % vs 0 %; p = 0,01). Moreover, during a delay of more than 3 years, patients had significantly more large polyps (9 % vs 2 %; p = 0,04) and adenomas with high grade dysplasia (3 % vs 0 %; p = 0,02).

**Conclusions** The delay in post-polypectomy colonoscopy is frequent and deleterious with a significant increase in the number of CRC. Thus, reminder to the patient on the birthday date of the control could be an important first step. More studies are needed to determine the impact of this delay and to define appropriate monitoring intervals.

## ePP143 DEVELOPMENT AND INITIAL EVALUATION OF THE VALID-CLASSIFICATION FOR PREDICTION OF COLORECTAL POLYP HISTOLOGY - A MULTICENTER INTERNATIONAL TRIAL

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DOI 10.1055/s-0040-1704537

**Aims** The recently introduced VIST chromoendoscopy technique allows for detailed analysis of surface and vascular pattern morphology. The study aimed to create a new and unique classification for differentiating colorectal polyps using the VIST technology. We additionally aimed to assess the new classification's interobserver concordance, and evaluate its accuracy in predicting colorectal polyp histology.

**Methods** A digital library containing 26 videos/still images from 26 histologically-confirmed polyps with VIST was first evaluated by seven endoscopists from five countries in order to identify possible descriptors. Secondly, the descriptors were categorized using a modified Delphi methodology to propose the VALID-classification. Later, the seven endoscopists independently reviewed a new dataset comprising of 45 videos/still images, providing for each a diagnosis based on the VALID-classification, in which the interobserver agreement of individual descriptor was assessed, and its accuracy in predicting colorectal polyp histology evaluated.

**Results** Using a modified Delphi process, the endoscopists agreed on summarizing 8 descriptors into three main domains. Those include polyp surface pattern morphology (regular, yes/no; irregular, yes/no; ulcerated, yes/no), and pit pattern morphology (regular, yes/no; tubular appearance, yes/no; villous appearance, yes/no; tubulovillous appearance, yes/no, no pits visible yes/no). Interobserver reliability calculated in Gwet's AC1 for the polyp surface and pit pattern morphology were 0.78 (0.57, 0.82, 95%CI, the same as below) and 0.56 (0.46, 0.67) respectively. The accuracy of the VALID-classification in predicting diagnosis (Non-neoplasia, Adenoma and Cancer) was 0.90 (0.84, 0.94), and 0.70 (0.63, 0.77) in predicting histology (Hyperplastic Polyp, Tubular Adenoma, Tubulovillous Adenoma, Villous Adenoma and Cancer).

**Conclusions** The new VALID-classification was developed allowing prediction of colorectal polyp histology using the newly introduced VIST chromoendoscopy. A good concordance was shown among the observers and a rather high accuracy of the VALID-classification has also been demonstrated in the initial video/still-image evaluation. Further in vivo trials are required to validate this new classification in a clinical setting.

## ePP144 LARGE NON-PEDUNCULATED COLORECTAL POLYPS/COMPLEX POLYPS MDT ORGANISATION AND PRACTICE ACROSS YORKSHIRE REGION, UK

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DOI 10.1055/s-0040-1704538

**Aims** The British Society of Gastroenterology published guidance on the management of large non-pedunculated polyps in 2015. The aim of this survey was to assess the organisation and practice of complex polyps MDT across the Yorkshire region, UK.

**Methods** An electronic survey was created on Survey Monkey. All 13 Yorkshire hospitals, who manages complex polyps, were approached and lead consultants asked to complete the electronic survey with reminders sent at monthly intervals. The data was collected from March-August 2019.

**Results** 10/13 centres responded. Six centres (including all three tertiary centres) run formal stand-alone complex polyp MDT, three centres discuss complex polyps as part of colorectal cancer MDT and one centre refers all cases directly to an internal expert. Four of the meetings were held on weekly bases and the rest fortnightly.

For the stand-alone MDTs, advance endoscopists are present in all MDTs, colorectal surgeons participate in five, pathologists and booking staff are present in three MDTs and radiologists only in two.

In only 6/10 centres do the staff have dedicated time allocated for the meetings. Six centres have set criteria for referrals and use the SMSA scoring system. The median number of cases discussed per meeting is 4.5 (range 3-20). Six centres "always or usually" have high quality videos or photos of polyps available for MDT review. Four centres receive external referrals to their MDTs (two tertiary & two district hospitals).

Only 50% of centres specifically audit key performance indicators for their advanced endoscopists and only 60% of centres issue patients with written information about the proposed risks and benefits before attending.

**Conclusions** There is a considerable variation in large and complex polyp MDT practice across Yorkshire Hospitals. All tertiary centres run stand-alone specialised MDTs but dedicated time and infrastructure support is limiting the development of this important service in many centres.

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Friday, April 24, 2020

Endoscopic treatment of Zenker

2 11:30 – 12:00

ePoster Podium 1

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## ePP145V SAFETY AND EFFICACY OF THE ZENKER DIVERTICULUM SEPTOTOMY (ZDS) WITH THE SB-KNIFE

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DOI 10.1055/s-0040-1704539

**Aims** Initial experience of ZDS (myotomy) with the SB-knife™ (Sumitomo Bakelite Ltd., Japan).

**Methods** Prospective enrollment of 10 non-treated symptomatic ZD patients, performed with SB-knife and diverticuloscope, under GA and antibiotics. Efficacy, safety and hospitalization were tested.

**Results** 12 treatments in 10 patients (8M), mean age 65, size 30 mm, in 28 minutes, using 2.3 clips. Adverse events: 1 mild bleeding; 1 readmission (fever, normal CT); no perforations, surgery, or death. 9/10 significant improvement or resolution; 2/10 retreated. Eckardt decreased from 5.0 to 0.8. Mean hospitalization: 2.4 days.

**Conclusions** ZD septotomy with the SB-knife is safe and effective.

## ePP146V Z- POEM (PER ORAL ENDOSCOPIC MYOTOMY) FOR ZENKER ´S DIVERTICULUM

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DOI 10.1055/s-0040-1704540

Zenker's diverticulum (ZD) is a herniation of the post pharyngeal wall. Treatment options were directed into cutting the cricopharyngeus. Surgical repair had high risk of morbidity and mortality. Endoscopic diverticulectomy carries the risk of perforation and higher recurrence rates. Sporadic cases in managing ZD by Per oral endoscopic myotomy (Z-POEM) had been reported. It enables complete cutting of the septum with less recurrence rate and minimal risk of perforation. A 74-year-old male who had been suffering from regurgitation, dysphagia and choking for 2 years. Diagnosed to have 5 cm ZD. Z-POEM was done to him as shown in the video.

## ePP147V ZENKER DIVERTICULUM (ZD): ANTERIOR TUNNEL COMPLETE CRICOPHARYNGEUS (CP) MYOTOMY: Z-ATM

**Authors** Ishaq S<sup>1</sup>, Kuwai T<sup>2</sup>, Siau K<sup>1</sup>, Mulder C<sup>3</sup>, Neumann H<sup>4</sup>, Group Z

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DOI 10.1055/s-0040-1704541

**Aims** Incomplete myotomy has been ascribed to high recurrence rate of 11% that led to concept of completely CP myotomy in the treatment of ZD, but not without risk of perforation. we aim to describe modified technique of minimally invasive complete myotomy

**Methods** We carried out complete myotomy using Z-ATM approach in a 65 year male with recurrent ZD few years after stapling operation

**Results** There was no procedure related complications. Patient symptoms free at 6 Months follow up

**Conclusions** Z-ATM in a preliminary experience offers minimally invasive myotomy and provide a true endoscopic solution of ZD to reduce recurrence.

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Friday, April 24, 2020

ERCP complications: Perfs and pancreatitis

11:30 – 12:00

ePoster Podium 2

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## ePP148V BILIARY PNEUMATOSIS IN A PATIENT WITH CHOLANGITIS, A NOVEL FINDING

**Authors** Mangas-Sanjuan C<sup>1,2</sup>, Bozhychko M<sup>1,2</sup>, Medina-Prado L<sup>1,2</sup>, Baile-Maxía S<sup>1,2</sup>, Martínez B<sup>1,2</sup>, Martínez JF<sup>1,2</sup>, Casellas JA<sup>1,2</sup>, Aparicio JR<sup>1,2</sup>

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DOI 10.1055/s-0040-1704542

A 72-year-old man with secondary sclerosing cholangitis, cholecystectomy and Roux-en-Y hepaticojejunostomy, was admitted with a new episode of cholangitis. Percutaneous transhepatic cholangiography showed multiple strictures along the right and left intrahepatic ducts. Percutaneous radiological management failed because of impassable stenosis. Thereafter, an endoscopic duodenojejunostomy with a lumen apposing metal stent was performed. A calculus within the segment-III of the liver was removed. Endoscopy revealed submucosal blebs in the left intrahepatic duct. Some blebs were punctured with a sclerotherapy needle to confirm the presence of gas in the duct walls. Those gas-filled blebs were consistent with the novel finding: biliary pneumatosis.

## ePP149 THE USEFULNESS OF PROPHYLACTIC TEMPORARY 3F PANCREATIC DUCT STENT TO PREVENT POST-ERCP PANCREATITIS IN PATIENTS WITH BILLROTH II GASTRECTOMY

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DOI 10.1055/s-0040-1704543

**Aims** Biliary cannulation in patients with Billroth II gastrectomy is more difficult than normal anatomy. Difficult cannulation can lead to post-ERCP pancreatitis (PEP). Prophylactic pancreatic stent (PS) can reduce the frequency and severity of PEP. Especially, prophylactic temporary 3F PS placement is known to be effective to reduce PEP with spontaneous stent dislodgment. The aim of this study is to evaluate the effectiveness and spontaneous dislodgement rate of 3F PS in patients with Billroth II gastrectomy comparing with normal anatomy with a difficult biliary cannulation.

**Methods** Patients with a difficult biliary cannulation underwent 3F PS placement in Billroth II gastrectomy (BIIG group) and normal anatomy (NA group). If the stent had not passed spontaneously by 4 weeks, endoscopic removal of 3F PS was performed. The primary outcome was the incidence and severity of PEP in two groups. Secondary outcome were the rate of spontaneous dislodgment of 3F PS at 7 days, and procedure related adverse events.

**Results** A total of 34 patients with NA group and 12 of patients with BIIG group underwent 3F PS. The technical success rate of 3F PS placement was 97% in NA group, and 91.6% in BIIG group. The incidence rate of PEP was 9.1% (3/33 mild, 0/33 moderate, 0/33 severe) in NA group and 9.1% (1/11 mild, 0/11 moderate, 0/11 severe) in BIIG group. Spontaneous stent dislodgement rate within 7 days was 90.9% in NA group and 36.5% in BIIG group. (P=0.001)

**Conclusions** Prophylactic PS placement in patients with Billroth II may be effective to prevent PEP, but spontaneous dislodgement rate was significantly low comparing with normal anatomy and high rate of 2nd intervention to remove PS.

## ePP150V ENDOSCOPIC CLOSURE OF LATERAL DUODENAL WALL PERFORATIONS CAUSED BY DISPLACEMENT OF PLASTIC BILIARY STENTS

**Authors** Santos AL<sup>1</sup>, Rodrigues-Pinto E<sup>1</sup>, Vilas-Boas F<sup>1</sup>, Santos-Antunes J<sup>1</sup>, Pereira P<sup>1</sup>, Macedo G<sup>1</sup>

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DOI 10.1055/s-0040-1704544

We describe 3 patients with lateral duodenal wall perforations caused by plastic stents migration after endoscopic retrograde cholangiopancreatography (ERCP) biliary drainage. The first case reports a 59-year-old man who placed the stent due a suspected of cholangiocarcinoma. The perforation, detected early, was closed with an over-the-scope-clip(OTSC). Two next cases report 60-year-old men, who placed stents due suspected of cholangiocarcinoma and biliary stones; both perforations (one detected early and the other two months after) were closure with a variation of tulip bundle technique.

Patients were discharged clinically well. Endoscopy plays a major role in management of this type of perforations.

Friday, April 24, 2020

Vascular therapy

11:30 – 12:00

ePoster Podium 3

## ePP151 VASCULAR COMPLICATIONS OF CHRONIC PANCREATITIS AND ROLE OF EUS IN MANAGEMENT: EXPERIENCE FROM TERTIARY CARE CENTER IN NORTHWESTERN INDIA

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DOI 10.1055/s-0040-1704545

**Aims** To study the various vascular complications associated with chronic pancreatitis and role of EUS in their management.

**Methods** This is a prospective cohort study conducted at Department of Gastroenterology, SMS Hospital in Jaipur, Rajasthan for a period of three years from August 2015 till August 2018. The diagnosis of chronic pancreatitis was made on the basis of clinical, biochemical, and radiologic investigations. Additional investigations such as MRCP and EUS were performed when indicated.

**Results** A total of 402 subjects diagnosed as chronic pancreatitis were studied. The overall incidence of vascular complications in the study population was 19.4%(78/402).

Vascular complications indirectly related to chronic pancreatitis included splenic vein thrombosis in 7%(28/402), portal vein thrombosis in 4.5%(18/402) and duodenal ulcer in 1.2%(5/402) patients. Sinistral portal hypertension was present in 4%(16/402) patients. Vascular complications directly related to pancreatitis included pseudoaneurysm formation in 6.7%(27/402) patients. Splenic artery was the most common site seen in 37%(12/27) followed by gastroduodenal artery in 26%(7/27) patients.

**Management** 40.7%(11/27) pseudoaneurysms were asymptomatic and managed conservatively by observing for any change in size or any evidence of rupture documented by fall in hemoglobin levels. 59.3%(16/27) pseudoaneurysms bled. 8 patients were managed by EUS guided thrombin injection. 4 patients underwent endoluminal coil embolization of splenic artery pseudoaneurysm. 4 patients underwent ultrasound guided percutaneous glue embolization of splenic artery pseudoaneurysm. 35.7%(10/28) patients with splenic vein thrombosis presented with bleeding gastric varices, which were managed by EUS guided-glue injection in 8 and EUS guided-thrombin injection in 2 patients. A total of 21 patients were subjected to endoscopic interventions. Successful hemostasis was achieved in all patients with no immediate post procedure complications.

**Conclusions** The current study describes the various vascular complications of chronic pancreatitis and emerging role of EUS in their management.

## ePP152V TWO UNUSUAL ADVERSE EVENTS ASSOCIATED WITH EUS-GUIDED CYANOACRYLATE TREATMENT FOR GASTRIC VARICES

**Authors** Mottú RAZ<sup>1</sup>, Muñoz AB<sup>1</sup>, Mondragón OVH<sup>1</sup>, Cuéllar RP<sup>1</sup>, Belmontes JCP<sup>1</sup>, Pérez EM<sup>2</sup>

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DOI 10.1055/s-0040-1704546

Gastric varices cause 10-30% of all variceal bleeding and are associated with a high recurrence rate (15%-20%) despite conventional endoscopic treatment with cyanoacrylate injection.

We present two patients with acute gastric variceal bleeding and no adequate endoscopic visualization of the bleeding source, successfully treated with EUS-guided cyanoacrylate injection achieving initial hemostasis, but unusual

embolism occurs: portal embolism and gastroduodenal shunt thrombosis. However, both patients had good outcome despite these rare adverse events.

### ePP153V EUS-GUIDED ANGIOATHERAPY OF THREE CASES OF BLEEDING GISTS

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DOI 10.1055/s-0040-1704547

**Aims** Management of bleeding GISTs is challenging. We report three cases of bleeding GISTs successfully treated under EUS-guidance.

**Methods** Patients characteristics, type of procedure and clinical outcome are shown in the video.

**Results** One adverse event was observed. An intratumoral bleeding after the puncture of a 22G needle, successfully managed by EUS-guided deployment of a coil plus CYA. Clinical outcome in the three patients was uneventful until scheduled surgery.

**Conclusions** EUS-guided therapy of bleeding GISTs was effective in these three cases and could be another endoscopic procedure in bleeding GISTs aiming to obtain hemostasis until scheduled surgical therapy.

Friday, April 24, 2020

11:30 – 12:00

Endoscopic management of fistula and leakages

ePoster Podium 4

### ePP154 ELLA BIODEGRADABLE STENTS AS TREATMENT OPTION FOR POST-SURGICAL STRICTURE, DEHISCENCE AND FISTULA OF THE LOWER GASTROINTESTINAL TRACT: A SINGLE CENTER CASE SERIES

**Authors** Russo S<sup>1</sup>, Caruso A<sup>1</sup>, Mangiafico S<sup>1</sup>, Grande G<sup>1</sup>, Cocca S<sup>1</sup>, Pigò F<sup>1</sup>, Bertani H<sup>1</sup>, Conigliaro R<sup>1</sup>

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DOI 10.1055/s-0040-1704548

**Aims** Benign anastomotic strictures, dehiscences and fistulas secondary to lower gastrointestinal surgery are a growing problem that can be managed surgically or conservatively. Biodegradable (BD) stents offer a prolonged dilatatory effect before gradual degradation, obviates the need of a second procedure for stent removal and promote tissue granulation. We described a series of patients with different post-surgical complications involving the lower gastrointestinal tract (LGIT) managed with BD stents.

**Methods** This was a retrospective analysis of prospectively collected cases with different post-surgical complications (anastomotic stricture, dehiscence or fistula) of the LGIT managed with BD stents. Data have been collected in a single endoscopic tertiary center from May 2013 to October 2019.

**Results** A total of 11 patients (mean age 64±14, range 38-81; 7 males) underwent endoscopic SX-ELLA Esophageal BD stent placement in the LGIT to treat post-surgical complications. The series included 6 patients with colorectal anastomotic stenosis (group 1), 2 with colorectal anastomotic complete dehiscence, 1 with colonic fistula and 2 with ileal fistula (group 2). Five of six patients with anastomotic stenosis had been previously undergone multiple endoscopic treatments (balloon dilation and/or ectrosurgical cutting). Two patients with ileal fistula were also treated with over-the-scope clip (OTSC) positioning before stent placement. The surgery was performed for a neoplastic disease in 9 (81.8%) patients. The stent release was successful in all patients. The mean follow-up

time was 21.09±16.35 weeks (range 4-48). The clinical success rate at the end of follow-up was 60% in group 1 (3 complete resolution; 2 stenosis recurrence; 1 neoplastic recurrence) and 100% in group 2. No complications were observed.

**Conclusions** Biodegradable polydioxanone stents may be an efficacious alternative in the treatment of post-surgical strictures, fistulas and dehiscences of the lower gastrointestinal tract. In the latter indication the tissue growth stimulated by the polydioxanone based-stents is exploited.

### ePP155V MODIFIED ENDOSCOPIC VACUUM THERAPY IN THE MANAGEMENT OF A DUODENAL TRANSMURAL DEFECT

**Authors** de Moura DTH<sup>1</sup>, do Monte Junior ES<sup>1</sup>, Hathorn KE<sup>2</sup>, da Ponte-Neto AM<sup>1</sup>, Ribeiro IB<sup>1</sup>, de Medeiros FS<sup>3</sup>, Coronel M<sup>1</sup>, Thompson CC<sup>2</sup>, de Moura EGH<sup>1</sup>

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DOI 10.1055/s-0040-1704549

Gastrointestinal transmural defects are difficult to manage and are associated with high rates of morbidity and mortality. A 64-year-old man with cholangiocarcinoma status-post right hepatectomy presented on post-operative day 30 with sepsis and melena. EGD and CT scan showed a transmural duodenal wall defect associated with fluid collection. Endoscopic vacuum therapy (EVT) was considered. The patient was successfully treated with the modified EVT system, followed by 4 EVT system exchanges, and was discharged from the hospital 24-days after his initial procedure. This novel cost-effective modified EVT is feasible and appears to be as safe and effective as the traditional EVT system.

### ePP156V ENDOSCOPIC VACUUM-ASSISTED THERAPY IN THE MANAGEMENT OF POST-POEM ISCHEMIC ULCER FOLLOWED BY POSTSURGICAL ESOPHAGOGASTRIC ANASTOMOTIC LEAKAGE

**Authors** Robles-Medranda C<sup>1</sup>, Oleas R<sup>1</sup>, Alcivar-Vasquez J<sup>1</sup>, Bellido A<sup>1</sup>, Cifuentes C<sup>1</sup>, Pitanga-Lukashok H<sup>1</sup>

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DOI 10.1055/s-0040-1704550

Endoscopic therapy such as clip deployment, suturing and stenting are alternatives for the management of upper gastrointestinal leakages. Other options include management by EVAC therapy, that showed superior results over stenting, with a higher closure rate and lower mortality.

Early endoscopic therapy with EVAC might avoid surgical interventions, decreasing the morbidity and mortality related to surgery that could be our first approach. Endoscopic vacuum-assisted therapy is an effective therapy in the management of postsurgical esophageal anastomotic leakage and might reduce the need of surgical intervention in patients with post-POEM esophageal leakage.

Friday, April 24, 2020

11:30 – 12:00

Enteroscopy 2

ePoster Podium 5

### ePP157 OUTCOMES OF ENTEROSCOPY-ASSISTED DIRECT PERCUTANEOUS ENDOSCOPIC JEJUNOSTOMY (DPEJ) TUBE PLACEMENT - A SINGLE-CENTER EXPERIENCE

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DOI 10.1055/s-0040-1704551

**Aims** Review our clinical experience of direct percutaneous endoscopic jejunostomy (DPEJ) in a tertiary care center.

**Methods** We performed a six year retrospective review of forty-eight patients with DPEJ tube placement. The main outcome measurements were technical success in native and altered anatomy. DPEJ was attempted in 48 patients - 63% females, age 52.5±15.4 years, BMI 21.1± 6.8 kg/m<sup>2</sup>. Indications included gastroparesis (n=12), Parkinson's disease (n=4), chronic pancreatitis (n=7), chronic malnutrition with multiple abdominal surgeries (n=12), intractable nausea and vomiting (n=8) and other (n=5).

**Results** DPEJ was successful in 42/48 (87.5%) patients. Placement involved double-balloon enteroscopy in 34 patients, single balloon enteroscopy in 1 patient, and push enteroscopy in 7 patients. Technical failures were due to lack of trans-illumination (n=4), ventral hernia (n=1) and previous adhesions (n=1). The most common thirty-day complications included site pain (4) and site infection (3). There was no difference in the complications between altered and native anatomy (29% vs 20%, p=0.32) or other outcomes such as failure rates, tube removal rates or PEJ duration.

DPEJ was a short term bridge for 14 patients with a mean time to removal being 8 ± 7 months. Only one patient requested the DPEJ to be removed due to discomfort. Expectedly, patients with significant improvement in albumin levels were able to achieve DPEJ removal (1±0.6 g/dL vs 0.4±0.5 g/dL, p=0.05). Removal of the tube was not dependent on the indication or anatomy. 61% of all patients did not have the DPEJ removed. The mean duration of follow up in those patients was 23±17 months with initial tube mean duration of 12±8 months.

**Conclusions** DPEJ is associated with a high technical success rate that is not influenced by altered anatomy and offers nutritional support with a low perioperative complication rate. It can often be used as a short term bridging therapy in some patients.

## ePP158 USEFULNESS OF ENTEROSCOPIC BALLOON DILATATION IN DIFFERENTIAL DIAGNOSIS OF SMALL BOWEL STRICTURE

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DOI 10.1055/s-0040-1704552

**Aims** The complications of non-steroid anti-inflammatory drugs (NSAIDs) and low dose aspirin can be presented as gastrointestinal ulceration, bleeding, perforation and stricture. The stricture is the most severe stage of NSAID enteropathy which causes obstruction of small bowel. Occasionally, this lesion can be confused with Crohn's disease stricture. Nowadays, balloon dilatation through enteroscope is available, can create a more dilated lumen by expanding force, which permit the passage of a enteroscope and accurate evaluation of more proximal or distal small bowel above the stricture. We report our experiences and outcomes of small bowel evaluation above the stricture after balloon dilatation.

**Methods** From February 2012 to February 2016, patients with small bowel stricture and NSAIDs history were enrolled. All patients had stricture which an enteroscope could not pass through. The dilatations were performed using through-the-scope balloon with diameters from 8mm to 15mm. After adequate dilatation was achieved. More proximal or distal small bowel evaluation above the stricture was available. After passage of scope detailed information of small bowel such as mucosal edema, shape and directions of ulceration were evaluated.

**Results** 7 patients were enrolled. Successful and adequate dilatation was achieved in 7 of 7 patients (100%). In 2 of 7 patients, additional deep and longitudinal ulcerations which suggestive of Crohn's disease were observed after successful passage of enteroscope. In 5 of 7 patients, additional circular shallow ulcerative stricture could be seen after passage. However deep and longitudinal ulcerations were not observed. After procedure, change of initial diagnosis and treatment strategy was achieved in 2 of 7 patients.

**Conclusions** Small bowel evaluation above stricture after balloon dilatation may provide additional and detailed information of disease and can be useful in differential diagnosis of small bowel stricture.

## ePP159 EFFECTIVENESS OF ENDOTHERAPY OF SMALL BOWEL ANGIOECTASIAS WITH ARGON PLASMA COAGULATION (APC) THROUGH DOUBLE-BALLOON ENTEROSCOPY (DBE)

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DOI 10.1055/s-0040-1704553

**Aims** Retrospective study of the effectiveness of endoscopic treatment of SB AEs with the application of APC through DBE.

**Methods** From March 2018 to June 2019, seventeen (17) patients underwent DBE due to SB AEs in our Institution. We compared their haemoglobin (Hb) levels and transfusion requirements before and after the application of endotherapy, as well as the rate of relapse of bleeding.

**Results** We performed 19 procedures on 17 patients: 9 men/8 women; age range: 57- 85 years (mean age 75.4 years). Four patients underwent retrograde DBE, 11 anterograde DBE and 2 patients had panenteroscopy performed through combined anterograde and retrograde routes. Prior to DBE, all patients undertook a small bowel capsule endoscopy (SBCE). The mean time of follow up was 8.7 months (range: 1-18 months). Hb levels increased from 8.1 ±0.96 g/dl pre-endotherapy to 10.9±1.58g/dl post-endotherapy (p< 0.001) and remained stable throughout the follow-up period. Transfusion requirements also decreased from 4.6±4.4units/month pre-endotherapy to 0.7±1.06 units/month post-endotherapy (p=0.002). Post-endotherapy, transfusions requirements abated completely in 8 patients, whereas rebleeding occurred in 2 patients.

**Conclusions** SB bleeding secondary to AEs can be effectively treated with the application of APC through DBE. In our experience, endotherapy can lead to significant improvements in Hb levels and a reduction in transfusion requirements in most patients.

Friday, April 24, 2020

Non variceal bleeding

11:30 – 12:00

ePoster Podium 6

## ePP160 THREE'S A CROWD? A SINGLE CENTRE RETROSPECTIVE REVIEW OF ENDOSCOPIC INTERVENTION FOR UPPER GASTROINTESTINAL PEPTIC ULCER DISEASE

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DOI 10.1055/s-0040-1704554

**Aims** Bleeding upper GI ulcers is a common indication for endoscopy. Its management is focused on resuscitation, pharmacological therapy and endoscopic management. ESGE does not recommend the use of adrenaline injection as monotherapy for bleeding ulcers due to the risk of rebleeding. We aimed to review departmental experience of stable non-variceal upper GI, assessing the indication and number of endoscopic interventions for bleeding upper GI ulcers.

**Methods** A retrospective audit of OGD records for patients at a single tertiary referral endoscopy unit with clinical suspicion of stable upper GI bleeds (UGIB) from January 2018 to July 2019 was conducted. Endoraad reports were

reviewed, noting pathology encountered, intervention (adrenaline injection, clip application, Gold probe or haemospray), Forrest classification (FC) of bleeding ulcers and rebleeding, defined as post-endoscopy referral for interventional radiology or unplanned repeat endoscopy. Descriptive statistics are presented with statistical analysis performed using 2-way ANOVA.

**Results** From January to December 2018 533 OGDs were undertaken for suspected acute UGIB. While all included ulcers were FC I or II, this was documented in 82.22% (n=37). Forty-five patients received endoscopic intervention for bleeding ulcers. Of this cohort, 6.67%(n=3) were treated using 4 haemostatic interventional modalities, 24.44%(n=11) 3 modalities, 53.33%(n=24) 2 modalities and 15.56%(n=7) had monotherapy of whom 8.89%(n=4) received adrenaline monotherapy.

15.56%(n=7) receiving 3 or more therapies, 11.11%(n=5) receiving dual therapy and 8.89%(n=4) treated with monotherapy had repeated ulcer bleeding

**Conclusions** This review demonstrates the heterogenous approach adopted for management of stable upper GI ulcer bleeds, with the majority of patients treated with over 2 modalities as per ESGE guidelines. There was no noted benefit to use of more than 2 modalities although study power limits data interpretation, and use of 3 or more interventions may reflect management of higher risk bleeding ulcers in whom there is a great concern for potential to rebleed.

## ePP161 TC-325 (HEMOSPRAY) IN NON VARICEAL ACUTE UPPER GASTROINTESTINAL BLEEDING: A SINGLE CENTRE EXPERIENCE

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**DOI** 10.1055/s-0040-1704555

**Aims** TC-235 (Hemospray) is a haemostatic powder licensed for the treatment of non-variceal upper gastrointestinal bleeding (NVUGIB). The objective of this study was to assess the use and effectiveness of Hemospray at our centre, as well as attempt to establish potential risk factors for failure to achieve haemostasis.

**Methods** Retrospective single-centre cohort study of all patients treated with Hemospray for NVUGIB between February 2016 and September 2019.

**Results** 34 patients (male n=23; 67.6%) were treated with Hemospray for NVUGIB (mean age 61.5). The main causes of gastrointestinal bleeding were duodenal ulcers (n=13; 38.2%), gastric ulcers (n=1; 2.9%), post-sphincterotomy bleeding (n=6; 17.6%), gastrointestinal malignancy (n=7; 20.6%), Mallory-Weiss tear (n=1; 2.9%), portal hypertensive gastropathy (n=2; 5.9%), oesophagitis (n=3; 8.8%) and post-biopsy bleed (n=1; 2.9%). Amongst the 14 gastro-duodenal ulcers, the Forrest classification was as follows: 1A (n=2; 14.2%); 1B (n=10; 71.4%); 2A (n=1; 7.1%); 2B (n=1; 7.1%). Hemospray was used as a monotherapy in 21 of 34 cases (61.8%) and as part of combination therapy in 13 (38.2%). The overall rate of initial hemostasis with Hemospray use was 94.1% (32/34 procedures, 20/21 as monotherapy (95.2%)). 6 patients had a bleeding diathesis (raised INR>1.5 and/or platelets < 50 × 10<sup>9</sup>/L) with a reduced initial hemostasis rate of 66.6% (4/6). 3 (9.4%) developed re-bleeding with an average time to re-bleed of 6 days (range 1-10 days). Two cases of re-bleeding had gastro-duodenal ulceration with high-risk features for re-bleeding: Forrest 1A ulcer (n=1) and Forrest 1B (n=1). The overall 30 day mortality was 17.6% (n=6). No complications of Hemospray use were identified.

**Conclusions** Hemospray was overall safe and effective at achieving haemostasis regardless of aetiology. The only 2 cases that did not achieve initial haemostasis had significant bleeding diathesis outlining the importance of correcting these haematological parameters in conjunction with therapeutic upper GI endoscopy in cases of upper gastrointestinal haemorrhage.

## ePP162 PREDICTORS OF FAILURE OF ENDOSCOPIC HEMOSTASIS IN PATIENTS WITH SEVERE PEPTIC ULCER BLEEDING

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**DOI** 10.1055/s-0040-1704556

**Aims** To identify predictive factors for failure of endoscopic hemostasis.

**Methods** Single center retrospective analysis of patients presented with peptic ulcer bleeding between Jan 2007 and Feb 2016. Patients without re-bleeding (group A) were compared to patients with re-bleeding (group B). Furthermore a subgroup of patients that required coil embolization to achieve hemostasis was analyzed using matched pair analysis. The groups were compared regarding sex, age, ulcer size and number, predisposing factors, clinical presentation, type of endoscopic intervention and comorbidities.

**Results** In total 18,816 upper endoscopies were performed. Peptic ulcer bleeding was detected in 754 patients (4%). Bleeding solitary ulcers were the commonest (64.46%). Forrest Ib ulcers were most commonly detected (182 pts. (24.14%)). The commonest predisposing factor was aspirin intake (288 pts. (38.20%)) followed by H. pylori infection (267 pts. (35.41%)), NSAIDs in 115 pts.(15.25%) and anticoagulants in 179 pts.(23.74%). H. pylori and aspirin was the most frequent combination but was found only in 93 pts.(12.33%). Epinephrine injection was used in 323 pts. (42.84%) followed by clip therapy in 260 pts.(34.48%). Re-bleeding occurred in 110 pts.(14.58%). We identified the following risk factors for re-bleeding: age between 60 and 80 years (p= 0.013), localization in the antrum (p< 0.001), size above 2 cm (p=0.040), anticoagulation therapy (p=0.017) and Forrest types Ib, Ia, IIa (p< 0.001). Hemostasis was endoscopically achieved in 391 pts.(53.05%). PPI therapy without any other intervention was used in 303 pts.(40.18%), 11 pts.(1.46%) received surgery, coil embolization was needed in 44 pts.(5.84%) and 5 pts.(0.66%) died from bleeding. The matched pair analysis regarding patients with re-bleeding that couldn't be treated by endoscopy was not able to identify one of the above mentioned risk factors as being significant.

**Conclusions** Our study confirms well known risk factors for peptic ulcer bleeding and re-bleeding. However, treatment success after re-bleeding cannot be predicted by the same factors.

**Friday, April 24, 2020**

**Lower GI bleeding 2**

**11:30 – 12:00**

**ePoster Podium 7**

## ePP163 FIT BUT AIMING FOR 'FITTER' AT A NHS UNIVERSITY DISTRICT GENERAL HOSPITAL FOR TARGET REFERRALS

**Authors** Zayat IE<sup>1</sup>, Akinlade F<sup>1</sup>, Siddiqui A<sup>1</sup>, Neeves L<sup>1</sup>, Banerjee S<sup>2</sup>

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**DOI** 10.1055/s-0040-1704557

**Aims** FIT replaces gFOBT for the detection of faecal occult blood in low risk symptomatic patients (NICE DG30) and in the bowel cancer screening programme (BCSP). The aim was to review the outcomes of FIT with regards to two week wait referrals via loco-regional GP practices between June - August 2019, paying particular attention to the number of confirmed colorectal cancer cases. We also compared the outcomes of FIT with gFOBT in the BCSP.

**Methods** FIT requests made during June - August 2019 according to DG30 were extracted from the hospital information system and analysed according to result, referral via the two week wait, investigations and final diagnosis. A review of the BCSP results made in July - October 2019 was performed, comparing the outcomes of BCSP positive FIT and gFOBT tests. A 1 month uptake comparison for the BCSP was also analysed for June 2019.

**Results** 55% of DG30 FIT tests showed a negative result, while 11% were positive. 34% of FIT tests were not performed as the laboratory did not receive the correct sample type or inaccurate demographic information. Of the FIT positive results referred via the 2WW, 1 confirmed cancer. No cases of cancer were diagnosed in the 3 referred FIT negative cases. Following an unsuitable sample for FIT, 6 patients were referred on the 2WW referral and 1 case of cancer was diagnosed. BCSP uptake for FIT and gFOBT in June 2019 was 62.67% and 48.33%, respectively. In the BCSP for the period July-October 2019 there were 4 confirmed cancer cases for FIT positive results, while gFOBT positive resulted in 2 cases of cancer.

**Conclusions** Results show an overall increase in 2 week wait referrals. Results also show a significant number of void results, suggesting an urgent need for proper awareness of sample requirements. Further studies are recommended.

### ePP164 CONTRIBUTION OF ARGON PLASMA COAGULATION IN THE TREATMENT OF RADIATION PROCTITIS: A RETROSPECTIVE STUDY OF 58 CASES

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DOI 10.1055/s-0040-1704558

**Aims** Argon Plasma Coagulation (APC) is a recent endoscopic haemostasis method that has experienced unprecedented growth since its appearance in 1991. It allows the realization of monopolar electrocoagulation without contact with the mucosa treated with an inert gas, colorless, non-flammable and non-toxic. The purpose of our work was to evaluate the interest of APC in the endoscopic management of gastrointestinal bleeding occurring during chronic radiation proctitis hemorrhagic.

**Methods** This is a retrospective study carried out at the Endoscopy Department of the Military Hospital of Rabat in Morocco, between January 2016 and May 2019. We included 58 patients presenting rectorrhages related to a haemorrhagic radiation proctitis and having benefited from APC.

**Results** The average age of our patients is 59 years old. There were 33 women and 25 men. All patients had grade 3 or 4 clinical grade rectorrhages with a mean Chutkan score of 3.1. All patients had moderate and severe endoscopic lesions (Grade B and Grade C). APC was used in the treatment of all patients with an average session number of 2.6 with an overall success rate of 100% evaluated on clinico-biological and endoscopic parameters.

**Conclusions** The good results of endoscopic APC treatment of hemorrhagic radiation Rectites in terms of efficacy, tolerance and safety make this technique a first-line treatment.

### ePP165 PERFORMANCE MEASURES FOR EMERGENCY LOWER GASTROINTESTINAL ENDOSCOPY

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DOI 10.1055/s-0040-1704559

**Aims** The aim of this paper was to evaluate the performance measures of emergency colonoscopy.

**Methods** A retrospective cross-sectional study, that involved patients undergoing emergency colonoscopy at the Department of Emergency Gastroenterology, Clinical Center of Serbia was performed, for a period of two years. Data were obtained on the basis of medical records. Descriptive statistics methods were used. Continuous variables were presented as mean ± standard deviation. Discontinuous variables were presented as frequencies (percentages).

**Results** The study included 197 patients, mean age 61.5 ± 15.2, ranging from 22 to 90 years. Of the total number of patients, 62.9% (n = 124) were men. The most common indication for colonoscopy was rectal bleeding, which was present in 31.0% (n = 61). Adequate bowel preparation for the examination had 67.5% (n=135) patients. Cecum intubation was achieved in 65% (n=130) patients. The polyp detection rate was 37.7%, while the adenoma detection rate was 22.5%, for patients ≥ 50 years of age. For all total colonoscopies, the endoscope extraction time was > 6 minutes.

**Conclusions** During the emergency colonoscopy, the lower percentage of adequate bowel preparation, cecum intubation and lower detection rate of polyps and adenomas was achieved. The lower performance measures are most likely due to the patient's general condition, primarily comorbidity, as well as the specificity of the emergency colonoscopy itself.

Friday, April 24, 2020

11:30 – 12:00

Documentation and reporting  
in GI- endoscopy

ePoster Podium 8

### ePP166 AUTOMATED LINKAGE BETWEEN ENDOSCOPY AND HISTOPATHOLOGY AS A HOLY GRAIL FOR CONTINUOUS ADR50 MONITORING

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DOI 10.1055/s-0040-1704560

**Aims** ADR50 is considered by the European Society of Gastrointestinal Endoscopy (ESGE) as one of the key performance measures for lower gastrointestinal endoscopy. Technical and human resources constraints limit implementation of recording of quality monitoring in endoscopy. Our aim was to deploy a user friendly infrastructure for continuous monitoring of endoscopy quality indicators by establishing an automated linkage between endoscopy quality monitoring and the histopathology database.

**Methods** We adapted a company reporting system by adding a dedicated tab for quality monitoring including: preparation, progression, indication and number of polyps resected. We automatically linked this with the histopathology database using the systematized nomenclature of medicine clinical terms (SNOMED CT). This results in continuous monitoring of endoscopy quality indicators, including inter alia: rate of adequate bowel preparation, cecal intubation rate (CIR) and ADR50. We continuously monitored these endoscopy quality indicators for 9 endoscopist working at our centre for 9 months. Individual feedback was given after 4 months.

**Results** A total of 1434 colonoscopies were performed during the first 9 months of monitoring, 682 during the first 4 months, 752 during the following 5 months. CIR was not subject to change (92%). An increase in ADR50 is observed in 7 out of 9 participants, resulting in a global increase of 4.6% (22.9% to 27.5%) (P< 0.05). The reported ADR50 numbers meet the goals required by international guidelines. We assume these results underestimate reality because neither emergency - nor therapeutic colonoscopy procedures were excluded from our database.

**Conclusions** An easy to use infrastructure for registration of quality monitoring in daily endoscopy practice in combination with an automated linkage with the

histopathology database facilitates continuous monitoring of endoscopy quality indicators. A global ADR50 augmentation was observed after individual feedback, which can be translated as a quality improvement in the performance of lower gastrointestinal endoscopy at our centre.

## ePP167 PHOTOGRAPHIC DOCUMENTATION OF UPPER GASTROINTESTINAL LANDMARKS AT GASTROSCOPY: HOW GOOD IS IT?

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**DOI** 10.1055/s-0040-1704561

**Aims** The European Society of Gastrointestinal Endoscopy (ESGE) guidelines describe a systematic approach to photo-documentation with a recommendation of eight anatomical landmarks to improve diagnostic endoscopy quality. This practice encourages mucosal cleansing, mucosal inspection and ensures a complete examination. The aim of this study was to retrospectively assess the photo-documentation at gastroscopy in clinical practice and compare this to the recommended sites as per the ESGE guidelines.

**Methods** Single centre retrospective analysis of 250 consecutive gastroscopies in a district general hospital endoscopy unit in London over a two week period in April 2019. Gastroscopy reports were scrutinized for photographic evidence of anatomical landmarks. The images captured on Unisoft GI Reporting Tool were analysed and compared to recommended ESGE guidelines. Patient comfort scores during the procedures (0 = no discomfort, 1 = one or two episodes, 2 = more than 2 episodes, 3 = significant discomfort) were also examined in relation to number of photographs obtained.

**Results** Of 250 gastroscopies performed, the eight anatomical landmarks were photographed during only 33 procedures (13%). In these 33 procedures the patient comfort scores were >1 (more than two episodes of discomfort) in 3 patients (9%) compared with 60 (28%) in the 217 patients with suboptimal photo-documentation ( $p = 0.02$ ). In the 33 procedures where all the landmarks were photographed; 22 patients (66%) had conscious sedation, 11 (33%) patients had xylocaine throat spray.

**Conclusions** Photographic evidence of anatomical landmarks as per ESGE guidelines is only documented in 13%. Patient comfort and procedures under conscious sedation increase compliance with optimal photo-documentation. Photographic documentation improves the diagnostic quality of endoscopy and acts as a medico-legal record of an adequate procedure. There is much room for improvement in the photographic documentation of anatomical landmarks during gastroscopy.

## ePP168 TAKING BIOPSIES IN MACROSCOPICALLY NORMAL ENDOSCOPIES - IS THERE INTER-OPERATOR VARIABILITY AND NEED FOR STRINGENT GUIDELINES AND TRAINING?

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**DOI** 10.1055/s-0040-1704562

**Aims** Numerous studies have questioned the value of taking biopsies in macroscopically-normal mucosa. Inappropriate biopsies increase financial and time pressures on the increasingly-strained endoscopy, pathology and NHS services. We hypothesized that non-physician endoscopists have greater uptake on performing biopsies in macroscopically normal endoscopies.

**Methods** We conducted a retrospective study of diagnostic gastroscopies and colonoscopies performed across 3 district-general hospitals (January-November 2018) in United Lincolnshire Hospitals NHS Trust. Endoscopic reports were examined for age, sex, indication, endoscopic diagnosis, biopsies taken (yes/no), and operator (gastroenterologist/surgeon/nurse endoscopist {NE}). We classified 'biopsy not indicated' when mucosa was described as 'normal' in the endoscopic report, where indication for endoscopy was anaemia, rectal bleeding, or weight-loss in colonoscopies, and dyspepsia, vomiting or abdominal pain in gastroscopies.

**Results** A total of 326 gastroscopies and 355 colonoscopies were included. 170 procedures fulfilled the 'biopsy not indicated' classification, of which 59% had multiple biopsies taken. Biopsy rates among gastroenterologists, surgeons, and NEs in 'biopsy not indicated' were 53% (39/73), 60% (42/70) and 70% (19/27) respectively. Using Chi-square, there was no statistically significant difference between various groups: surgeons and NEs ( $p = 0.34$ ), surgeons and gastroenterologists ( $p = 0.42$ ), and gastroenterologists and NEs ( $p = 0.12$ ). This rejects our hypothesis.

**Conclusions** Our study showed that a significant number of biopsies are performed without good indication, with no significant inter-operator variability. Both the British Society of Gastroenterology and National Institute for Health and Care Excellence have published guidance on when biopsy is indicated, but there are few high-level recommendations on when not to biopsy. Findings from our study mandate development of such guidance, followed by training of all endoscopists and UK-wide audit of local practice to ensure compliance with guidelines. The implementation of such strategies has been proven effective at a local level, and if adopted nationally can significantly optimise financial burden of endoscopy services on the NHS.

Friday, April 24, 2020

14:30 – 15:00

Upper GI: Resection techniques 4

ePoster Podium 1

## ePP169V ENDOSCOPIC DISSECTION WITH DUAL KNIFE AND REMOVAL OF OVESCO EMBEDDED IN OESOPHAGEAL STRICTURE

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**DOI** 10.1055/s-0040-1704563

51 year old man had mid oesophageal perforation following 5cm long circumferential Endoscopic Mucosal Resection (EMR) of squamous cell carcinoma in situ using Duette Multiband Mucosectomy device (Cook). Perforation was closed using OVESCO with twin grasper resulting in significant luminal narrowing. Tight refractory oesophageal stricture developed with OVESCO embedded in sub-epithelial scar tissue.

The buried arms of OVESCO were exposed by dissection using Dual Knife (Olympus). OVESCO was cut with reMOVE DC cutter (OVESCO) and removed. Residual stricture was managed with fully covered removable metal stent (Boston).

**Key message** Exercise caution using OVESCO in narrow lumen (oesophagus).

## ePP170V ENDOSCOPIC FULL THICKNESS RESECTION OF A GASTRIC GIST

**Authors** Cecinato P<sup>1</sup>, Grillo S<sup>1</sup>, Bassi F<sup>1</sup>, Sereni G<sup>1</sup>, Lucarini M<sup>1</sup>, Tomba R<sup>1</sup>, Sassatelli R<sup>1</sup>

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**DOI** 10.1055/s-0040-1704564

We report full thickness endoscopic resection of a 30mm gastric gastrointestinal stromal tumor of the gastric body on the greater curvature in an asymptomatic 48-year-old man. Endoscopic ultrasound with fine-needle

aspiration shown GIST without lymph node involvement. The resection was done with the patient under general anesthesia with orotracheal intubation. An Hybrid Knife T-type by Erbe was used. A complete full thickness resection was obtained and the muscular defect was closed with QuickClip Pro by Olympus. The procedure took place uneventfully, the patient was discharge the day after and the GIST resulted entirely removed.

### ePP171V ENDOSCOPIC RESECTION OF A GASTRIC SUBMUCOSAL HEMANGIOMA USING A FULL-THICKNESS RESECTION DEVICE

**Authors** Terán Á<sup>1</sup>, Pascual M<sup>1</sup>, Fernández-Gil PL<sup>1</sup>, Moris M<sup>1</sup>, Pozo CD<sup>1</sup>, Rodríguez-Duque JC<sup>1</sup>, Rivas C<sup>1</sup>, Arias MJL<sup>1</sup>, Cagigal ML<sup>2</sup>, Crespo J<sup>1</sup>, Jimenez-Perez FJ<sup>1</sup>

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DOI 10.1055/s-0040-1704565

A 42 year-old man presented with upper gastrointestinal bleeding secondary to a 20mm fundic subepithelial lesion. Hemostasis was achieved with conventional endoscopic treatment. Endoscopic ultrasound showed a submucosal lesion, so endoscopic resection was decided. Full-thickness resection device (FTRD) was chosen given the retroflexion approach and the hemostatic effect provided by the Ovesco clip. A 20mm dilation balloon was used to overcome the upper esophageal sphincter. *En bloc* resection was achieved with pathology showing a hemangioma with free margins.

#### Conclusions

- 1) FTRD is feasible for upper gastrointestinal tract-
- 2) FTRD should be considered for subepithelial lesions resection-

Friday, April 24, 2020

Biliary tissue acquisition

14:30 – 15:00

ePoster Podium 2

### ePP172 OPTIMIZING OUTCOMES OF TISSUE ACQUISITION FOR DIAGNOSIS OF BILIARY LESION IN ENDOSCOPIC RETROGRADE CHOLANGIOPANCREATOGRAPHY

**Authors** Kim S<sup>1</sup>, Lee HS<sup>1</sup>, Lee KW<sup>1</sup>, Jang S<sup>1</sup>, Kim SH<sup>1</sup>, Jeon HJ<sup>1</sup>, Choi SJ<sup>1</sup>, Lee JM<sup>1</sup>, Choi HS<sup>1</sup>, Kim ES<sup>1</sup>, Keum B<sup>1</sup>, Jeon YT<sup>1</sup>, Kim CD<sup>1</sup>, Oh CH<sup>2</sup>, Dong SH<sup>2</sup>

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DOI 10.1055/s-0040-1704566

**Aims** Accurate diagnosis of biliary lesions remains a clinical challenge due to the difficulty of obtaining an adequate specimen. Bile aspiration, brush cytology and forcep biopsy are well-known methods of obtaining tissue in endoscopic retrograde cholangiopancreatography(ERCP). Recently, single-use cholangioscopy(Spyglass, Boston scientific, USA) has been developed to improve diagnostic capability of ERCP. This study is aimed to compare the performance of each method and optimize the strategy for biliary tissue sampling. **Methods** Retrospective chart review was performed of ERCP procedures in two tertiary medical centers between January 2013 and December 2018. Diagnostic yields were compared according to each four methods; Bile aspiration, brush cytology, forcep biopsy of ERCP and biopsy using single-use cholangioscopy. The outcomes of single or combination of techniques were analyzed to find the optimal strategy of tissue sampling.

**Results** Data of 416 patients underwent bile duct sampling using ERCP was collected. 328 patients had finally diagnosed as malignant disease. The sensitivity of each method were followed as bile aspiration 28.5%, brush cytology

53.7%, forcep biopsy 62.7% and single-use cholangioscopy biopsy 80.1%. The combination of bile aspiration, brush cytology and forcep biopsy showed a better diagnostic performance (sensitivity 72.2%, accuracy 78.6%, negative predictive value 51.6%) than single method only. Biliary sampling using single-use cholangioscopy biopsy showed better diagnostic accuracy than other methods. There was no significant difference between groups “with” and “without” brush tip-cutting (53.1% vs. 55.8% in sensitivity).

**Conclusions** Our study suggests that forcep biopsy using single-use cholangioscopy is an effective method for tissue sampling in ERCP. However, each single method have a limited sensitivity for the diagnosis of malignant biliary strictures. A combination of methods can increase the sensitivity and accuracy for biliary strictures in ERCP.

### ePP173V UTILITY OF SPYBITE BIOPSIES THROUGH UNCOVERED SELF EXPANDABLE METAL STENT FOR DIAGNOSIS OF CHOLANGIOCARCINOMA

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DOI 10.1055/s-0040-1704567

Tissue acquisition to confirm the diagnosis in patients with suspected cholangiocarcinoma poses significant challenges. In the last few years targeted biopsies obtained with the SpyBite biopsy forceps through Peroral Cholangioscopy has shown promising diagnostic yields in cases with negative brush cytology or fine needle aspiration; but yet remains very challenging in most difficult cases. We believe that the video attached for one of the four cases we did is the first to describe the utility of Peroral Cholangioscopy in obtaining targeted biopsies through mesh of uncovered self-expandable metallic-stent (UCSEMS) in patients with inoperable cholangiocarcinoma who already had UCSEMS in-situ.

### ePP174 PREDICTORS OF POSITIVE BILIARY BRUSH CYTOLOGY IN PATIENTS WITH BILIARY STRICTURE

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DOI 10.1055/s-0040-1704568

**Aims** Bile duct brush cytology during Endoscopic Retrograde Cholangiopancreatography (ERCP) is the standard method of sampling a biliary stricture. We aimed to find out predictors of positive brush cytology during the ERCP in patients with biliary stricture.

**Methods** Data were collected by retrospectively reviewing the medical records of 65 consecutive patients with indeterminate biliary stricture on imaging who underwent brush cytology at our institution from March 2017 to May 2019. We analyzed the relationship of age, sex, final diagnosis, stricture length and location, maximum diameter of the upstream dilated bile duct, serum total bilirubin, carcinoembryonic antigen, and carbohydrate antigen 19-9 with the yield of positive brush cytology.

**Results** The final diagnosis was benign stricture in 2 cases and malignancy in 63 cases (42 bile duct cancer, 18 pancreatic cancer, and 3 gallbladder cancer). The cytopathological diagnoses obtained were 14 negative for malignancy (21.5%), 14 atypical cells (21.5%), 11 suspicious of malignancy (16.9%), 26 malignancy (40.0%). There were no factors associated with the four cytopathological results. When patients with atypical cells were included in the positive cytology according to the final diagnosis, type of malignancy and grade of cellular differentiation were significant indicators of positive diagnosis by brush cytology ( $p = 0.004$  and  $0.038$ , respectively). The maximum diameter of the upstream bile duct from the stenosis tented to be toward longer in the positive cytology when the location of stricture was extrahepatic bile duct ( $p = 0.057$ ). The sensitivity, specificity, and accuracy of brush cytology for malignant biliary strictures were 81.0%, 100%, and 81.5%, respectively.

**Conclusions** Our results showed good diagnostic yields of brush cytology during ERCP for biliary stricture when atypical cells included as malignant

results. Predictors of positive yield include type of malignancy and grade of cellular differentiation. Upstream bile duct dilatation tended to have a higher probability of the positive cytology.

Friday, April 24, 2020

14:30 – 15:00

Pancreatic EUS-guided interventions

ePoster Podium 3

### ePP175 SAFE AND EFFICACY OF SINGLE CENTRAL ENDOSCOPIC ULTRASOUND GUIDED NEUROLYSIS OF CELIAC PLEXUS FOR PAIN RELIEF IN UNRESECTABLE PANCREATIC CANCER PATIENTS

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DOI 10.1055/s-0040-1704569

**Aims** Unresectable Pancreatic Cancer (UPC) is strongly associated to severe pain difficult to treat with opiate. Endoscopic-Ultrasound-guided celiac plexus neurolysis (EUS-CPN) significantly improve pain reducing opiate need in UPC. Recent guidelines suggest combined bilateral EUS-CPN approach, however technical difficulty related to strictly anatomic rapport with vessels it could limit its wide clinical spread. In this view a single central EUS-CPN approach appears easier and faster to implement and learn.

Our aim is to evaluate the safety and efficacy of EUS-CPN performed with a single injection of anesthetic followed by alcohol in the central celiac plexus area.

**Methods** Retrospective analysis of multicenter prospective-enrolled UPC-patients with uncontrolled pain treated with single central EUS-CPN. Early/late complications and VAS score after EUS-CPN were recorded after 1 and 2 months follow-up.

**Results** 102 UPC-patients (56 male; median age 55 years) with median baseline VAS for pain of 8 and median opiate requiring of 14 mg/day were enrolled in 5 years from 3 regional referral centers. The most part of UPC were large (median 38 mm) head (75.5%) neoplasm. All patients survived at 1-month follow-up; 19 patients had died at 2-months follow-up. 48-hours after a simple short-time treatment (median duration 35 minutes) a significant pain response (minimum 2 points VAS decrease from baseline) was achieved in 85 (83.5%) patients (mean VAS-pre=8 ±2.3 vs mean VAS-post= 3.6 ±1.5 p< 0.0001). Significant pain improvement (mean VAS-pre=8 ±2.3 vs mean VAS-post=2.2 ±0.8 p< 0,0001) was stable observed 30-days after CPN. VAS resulted 2.8 in alive cases at 2-months follow-up.No several complications were observed whereas 14 patients (13.7%) had mild self-limiting side effects (diarrhea, hypotension, worsening of pain) resolving within 48 hours from CPN.

**Conclusions** In our retrospective analysis EUS-guided single anesthetic/alcohol injection in central celiac plexus appear to be a relatively quick and highly safe procedure for effective long-time pain-relief in UPC.

### ePP176 ENDOSCOPIC ULTRASOUND-GUIDED PLACEMENT OF HOT AXIOS STENT FOR DRAINAGE OF WALLED-OFF PANCREATIC NECROSIS: A CASE SERIES

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DOI 10.1055/s-0040-1704570

**Aims** The aim of this study was to evaluate the safety and clinical efficacy of Hot AXIOS stent for drainage of walled-off pancreatic necrosis (WON).

**Methods** We retrospectively studied the files of all patients with WON who underwent endoscopic ultrasound -guided drainage using a Hot Axios stent device from one endoscopist.

**Results** Eighteen patients with WON underwent drainage using the stent. The technical success rate was 100% and the average procedure time was 3.1 minutes. Endoscopic resection of necrotic material was performed in six patients (33%), with a mean of 2.1 sessions of necrosectomy. The overall complication rate was 5,5% (bleeding in 1 patient). Clinical success rate was 100%. Mean time of stent removal was 40 days and mean time of follow-up after stent removal was 11 months. Recurrence of WON was observed only in one patient (8.3%).

**Conclusions** Using Hot-Axios stent is a safe, easy and effective option for drainage of walled-off pancreatic necrosis.

### ePP177 WIRSUNGO-GASTRIC ANASTOMOSIS UNDER ENDOSCOPIC ULTRASOUND (EUS) IN THE MANAGEMENT OF SYMPTOMATIC DILATION OF THE MAIN PANCREATIC DUCT: A TERTIARY CENTER EXPERIENCE

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DOI 10.1055/s-0040-1704571

**Aims** In patients with symptomatic dilation of the main pancreatic duct (CPP) with failure endoscopic cholangiopancreatography (ERCP) or impossibility to cross a stricture or a stone with a wire, surgical management has long been the only available treatment. EUS-drainage is a minimally invasive approach for complicated duct drainage. Wirsungo-gastrostomy under EUS (EUS-WG) is an alternative to ductal decompression surgery, thus we describe our experience.

**Methods** Between 2010 and 2018 twenty-seven consecutive patients aged 61.8 years [36 - 85] were included and analyzed, in whom EUS-WG was performed for symptomatic main pancreatic duct (MPD) obstruction with ERCP failure. The procedures were performed in patients intubated, in supine position with an EUS linear scope. It consisted of puncturing the MPD through the stomach, then place a wire and a plastic stent. The primary objective was to evaluate the technical success defined by the placement of the stent into the MPD. The secondary objectives were to assess clinical success on the pain symptom, complications, and quality of life through a standardized follow-up questionnaire.

**Results** The technical success was achieved in 92.5% of the cases. The adverse event rate was 21%, all classified as non-severe, including 4 postoperative pain and 2 acute benign pancreatitis medically managed. The clinical success rate was 88%, of which half presented a 'complete regression' and the other half a 'partial regression' of the pain. During a median time of follow-up of 34.2 months [4-108], an improvement in quality of life was reported in 74% of patients and no patients required secondary surgery. The stents were exchanged every 6 months.

**Conclusions** Provided it is performed in an expert center, WG-EUS offers a minimally invasive, effective and safe alternative to surgical pancreatic decompression in patients with symptomatic dilation of CPP with failure or impossibility of ERCP.

Friday, April 24, 2020

14:30 – 15:00

Upper GI endoscopy

ePoster Podium 4

### ePP178 EFFECTIVENESS OF PREMEDICATION WITH SYMETICHONE AND N-ACETYLCYSTEINE TO IMPROVE VISIBILITY DURING UPPER GI ENDOSCOPY: A RANDOMIZED CONTROLLED TRIAL

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DOI 10.1055/s-0040-1704572

**Aims** During esophagogastroduodenoscopy (EGDS) bubbles, bile and mucus often compromise the endoscopic visualization. Consensus about the importance of tensioactive and mucolytic drugs such as symetichone (SIM) and N-acetylcysteine (NAC) is lacking in Western world.

Present randomized controlled study aims to evaluate the effectiveness of premedication with SIM and NAC to improve endoscopic visibility.

**Methods** In 2019, 200 consecutive outpatients (105 M; 95 F) were enrolled. Sample size for each group was calculated as 70 patients per arm. Randomization list was 1:1.

200 patients were consecutively recruited and randomized to Group A (NAC 600 mg+SIM 2ml in 45 ml of H<sub>2</sub>O p.o.) and Group B (no preparation). Preparation was administered 20 minutes before EGDS. 4 expert endoscopists blinded to the premedication, assigned a score from 0 to 3 for each part of the stomach (Fundus,F;Body,B;Antrum,A) and distal esophagus(E), with higher score corresponding to a clearer view. Mouth to Clean time (MtCt), Mouth to Mouth time (MtMt) and amount of water used to clean were recorded. Statistical analysis used non parametric tests.

**Results** 100 patients were enrolled for each arm, with not significant difference for demographics (A 54 M, 46 F; B 48 M, 52 F). Group A showed total mean (7.6 ± 1.5 vs. 6 ± 0.7, P < 0.001) and partial mean scores higher in all parts of the stomach than Group B. Water used to clean was significantly less in patients A than in B (44 ml vs 128 ml, P < 0.001).

There was a significant difference in MtCt (2.3 ± 1.6 min in group A vs 3.8 ± 1.6 min, P < 0.001 in group B) whereas no significant difference there was in MtMt (9.4 ± 3.8 min vs 9.8 ± 2.1 min, P=0.178).

**Conclusions** Present RCT supports recommendation of premedication with SIM and NAC before EGDS for a better endoscopic visualization of gastric mucosa.

### ePP179 ANNUAL ENDOSCOPY IS ENOUGH FOR GASTRIC CANCER SURVEILLANCE SCHEDULE AFTER THE ENDOSCOPIC RESECTION

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DOI 10.1055/s-0040-1704573

**Aims** Patients who received endoscopic resection for early gastric cancer (EGC) or high grade dysplasia (HGD) are at high risk of subsequent development of metachronous gastric cancer. The aim of this study is to compare the prognosis of patients between biannual and annual endoscopic surveillance in patients after endoscopic resection of EGC or HGD.

**Methods** From Sep 2009 to Aug 2019, a total of 826 patients who underwent endoscopic submucosal dissection for the treatment of EGC or HGD were analyzed. Patients received endoscopic surveillance twice a year (intensive group) or annually (annual group). Exclusion criteria were patients who received the

surgical resection due to non-curative resection, endoscopic follow up period less than 5 years.

**Results** Total 388 patients were enrolled in this study (194 in intensive group and 194 annual group). During a mean follow-up of 5.7±1.5 years, local recurrence was found in six patients in intensive group and eight patient in annual group (3.1% and 4.1%, p=0.586). Metachronous gastric cancer in 20 patients (10.3%) in intensive group and 14 patients (7.2%) in annual group (p=0.281). Most stomach cancers of patients who received additional treatment including endoscopic or surgical resection were stage I EGC. Only one patient in intensive group was diagnosed as stage IIIA advanced gastric cancer.

**Conclusions** Annual endoscopic surveillance after endoscopic resection of EGC or HGD is more cost effective than biannual endoscopic examination.

### ePP180 THE GASTROPACK SYSTEM AS A MODEL FOR EGD APPROPRIATENESS IN PATIENTS WITH UPPER GASTROINTESTINAL SYMPTOMS: A COMPARISON WITH THE OPEN ACCESS SYSTEM

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DOI 10.1055/s-0040-1704574

**Aims** EGD appropriate use in Open-Access System (OAS) is a relevant issue in Endoscopy due to the significant amount of economic resources and time involved. In Italy, previous data reported a 22.9% rate of inappropriate EGDs according to ASGE guidelines. Inappropriate prescriptions were made more frequently by General Practitioners (GPs)s (29.4%) compared to specialists (12.9%). This study aims to evaluate if the GASTROPACK SYSTEM (GS), a new method to access gastroenterological care, may reduce inappropriate indications to EGD compared to the OAS.

**Methods** The GS was implemented in a 57.156-inhabitant area of Bologna where GPs could decide to directly prescribe EGD through pre-existing OAS or to refer patients to GS. In GS, diagnostic work-up is scheduled after a preliminary contact between GPs and specialists sharing patient's clinical information. Prospective data of patients with upper GI symptoms receiving an EGD prescription from GS and OAS were compared.

**Results** Between May 2016-2019, 2179 cases (39.5% males, median age 61yrs) were referred to GS and 1424 (65%) underwent EGD. Meanwhile, in the same geographical area 874 EGD prescriptions (43.8% males, median age 58yrs) were recorded through OAS. According to ASGE guidelines, EGD indication was appropriate in 92% of cases of GS compared to 79% of OAS (p < 0.01). Strong adherence to ASGE guidelines was observed in the GS population (sensitivity 99.4%, specificity 86.2%) with LR<sup>+</sup> 7.19 CI 6.99-7.39, LR<sup>-</sup> 0.007. However, rates of endoscopic findings did not differ when EGD was performed with (49%) or without (46%) an appropriate indication (p = 0.557, LR<sup>+</sup> 1.01 CI 0.79-1.28; LR<sup>-</sup> 0.88 CI 0.69-1.13).

**Conclusions** EGD prescriptions through GS present the highest rate of appropriateness ever reported in literature, thus offering a virtuous alternative to the existing OAS. However, adherence to guidelines does not directly improve diagnostic yield due to the low predictive value of ASGE guidelines.

## ePP181 IMPACT OF QUALITY CLEANSING IN A COLORRECTAL CANCER SCREENING PROGRAM

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DOI 10.1055/s-0040-1704575

**Aims** Our aims was to assess if lower levels of cleansing score than the optimal one (BBPS < 9, with score per segment ≥2) have a negative impact in ADR in medium risk patients. A quality colonoscopy that guarantees detection and resection of neoplasia is mandatory in colorectal cancer screening (CRC). There is controversy whether adequate cleansing (BBPS ≥ 6) can be considered sufficient in CCR screening colonoscopy (CCCCR). The adenoma detection rate (ADR) is the main quality parameter.

**Methods** We performed a prospective study in Vigo´s Hospital patients who performed CCCCCR. We exclude those with incomplete colonoscopy or BBPS < 2 in any segment. Epidemiological data and quality of the CCCCCR were analysed (Ex: ADR, Adenomas per Colonoscopy (APC)).

**Results** A total of 1110 patients were included, their characteristics, in Table 1. Mean age was 61.9 years ± 5.4; 604 (54.4%) men. Average withdrawal time was 22.2min; 15 min in patients without polyps. Excellent preparation (BBPS: 9) in 59.8%. 22.8% had BBPS= 6. The overall ADR was: 69.8% (664/1110). There were no significant differences between the endoscopists, but yes variation in the ADR 70.6% - 62% (> ADR to> number of colonoscopies). There were no differences between APC, ADR and patient preparation based on EB. ADR was higher in the CCCCCR in patients> 60 years and / or men.

### Characteristics

#### Value

#### Age

61,9 ± 5,4

#### Sex/women(%)

604/506 (54,4%/45,6%)

#### Bowel cleansing

Excelent (9/9)

Good (6/9)

Medium (>6 y < 9)

664 (59,8%)

253 (22,8%)

193 (17,4%)

#### ADR

BBPS 9:465/664 (70%)

BBPS 6: 170/253 (67.2%)

BBPS 7-8: 140/193 (72%)

**Conclusions** A minimum colon cleansing score in Boston Scale of (BBPS 2/segment) is suitable for a CCCCCR without having a negative impact on quality. Patient sex and age, and endoscopists specialization were the most relevant factors in relation to a higher ADR.

## ePP182 FACTORS AFFECTING THE QUALITY OF BOWEL PREPARATION FOR COLONOSCOPY IN THE ELDERLY: A RETROSPECTIVE ANALYSIS OF A PROSPECTIVE COHORT

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DOI 10.1055/s-0040-1704576

**Aims** This study aimed to assess the difference in bowel cleansing in the elderly compared to younger patients and to evaluate independent factors of cleansing success.

**Methods** We retrospectively reviewed a prospective cohort of 1289 in- and out-patients performing a colonoscopy after a 1, 2, or 4L PEG-based preparation. The elderly population was defined by an age ≥65 years. Bowel cleansing was assessed through the Boston Bowel Preparation Scale (BBPS), cleansing success was defined as a total BBPS≥6 with a partial BBPS≥2 in each segment.

**Results** All 1289 patients were included in the analysis, among these, 44.6% were ≥65 years. Compared to patients < 65 years, patients ≥65 years achieved a lower cleansing success rate both overall, both in the afternoon-only and afternoon-morning preparation subgroups: 70.3 vs 77.3% (p= 0.04), 61.2% vs 69.5% (p=0.01) and 84.9% vs 90.2% (p=0.07) respectively. At multivariate analysis, split regimen (OR=2.49, 95%CI=1.38-4.48; p=0.002), adequate cleansing at previous colonoscopy (OR=3.28, 95%CI=1.40-7.68; p=0.006) and tolerability (OR=1.14, 95%CI=1.03-1.26; p=0.006) were independently associated with a cleansing success in the group of patients aged < 65 years. In the group of elderly, split regimen (OR=2.43, 95%CI=1.34-4.38; p=0.003), adequate cleansing at previous colonoscopy (OR=2.29, 95%CI=1.14-4.73; p=0.02), tolerability (OR=1.29, 95% CI=1.16-1.44; p< 0.001), low-fiber diet for at least 3 days (OR= 2.45, 95%CI=1.42-4.24; p=0.001) and colonoscopy within 5 hours after preparation (OR= 2.67, 95%CI=1.28-5.56; p=0.008) were independently associated with a cleansing success.

**Conclusions** Compared to younger patients, adequate cleansing in the elderly is influenced by a greater number of factors. Among these, split regimen, colonoscopy within 5 hours after the end of preparation, low-fiber diet for at least three days, adequate cleansing at previous colonoscopy and tolerability were independently associated with a cleansing success. These factors play a crucial role and need to be properly addressed to optimize the quality of bowel preparation in the elderly.

## ePP183 RISK FACTORS ASSOCIATED WITH INADEQUATE BOWEL PREPARATION IN PATIENTS WITH FUNCTIONAL CONSTIPATION

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DOI 10.1055/s-0040-1704577

**Aims** Constipation is a common reason of poor bowel preparation, which negatively influences the quality of colonoscopy. Risk factors for inadequate bowel preparation in constipated patients remain unclear.

This study aimed to investigate the high-risk factors that might influence the quality of bowel preparation in patients with functional constipation.

**Methods** Consecutive patients with functional constipation who underwent colonoscopy between June 2016 and April 2017 were enrolled. A standard split dose of 4 l polyethylene glycol was used for bowel preparation. Patient- and procedure-related parameters were recorded. The primary outcome was an

adequate rate of bowel preparation. Risk factors for inadequate bowel preparation were screened by multivariate logistic regression analysis.

**Results** A total of 85 patients were included. Adequate bowel preparation was found in 62.8% (125/199) of patients. At multivariate analysis, Bristol stool form scale (BSFS) 1 [odds ratio (OR) 2.73, 95% confidence interval (CI) 1.26-5.90;  $P=0.011$ ], rectal pain score during defecation  $< 2$  (OR 4.14, 95% CI 1.22-13.97;  $P=0.022$ ), and starting-to-defecation interval  $\geq 4$  h (OR 3.83, 95% CI 1.34-10.91;  $P=0.012$ ) were risk factors for inadequate bowel preparation in patients with constipation. For patients with no, 1, 2, or 3 risk factors, the rates of inadequate bowel preparation were 11%, 23%, 49%, and 65%, respectively.

**Conclusions** With the standard preparation regime,  $> 1/3$  of patients with functional constipation had inadequate bowel cleansing. BSFS 1, rectal pain score during defecation  $< 2$ , and starting-to-defecation interval  $\geq 4$  h were identified as independent risk factors for inadequate bowel preparation in constipated patients.

Friday, April 24, 2020

14:30 – 15:00

Percutaneous Endoscopic  
Gastrostomy (PEG)

ePoster Podium 6

### ePP184 CHARACTERISTICS OF PATIENTS WHO UNDERWENT PERCUTANEOUS ENDOSCOPIC GASTROSTOMY TUBE PLACEMENT IN A TERTIARY HOSPITAL

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DOI 10.1055/s-0040-1704578

**Aims** We aimed to investigate clinical characteristics and survival rates of patients undergoing percutaneous endoscopic gastrostomy (PEG) tube placement in a tertiary hospital in Athens, Greece.

**Methods** We analyzed prospectively collected data of patients who underwent PEG tube placement in our hospital and assessed their survival data (overall and 28<sup>th</sup> day survival).

**Results** Between June 11<sup>th</sup>, 2018 and October 22<sup>th</sup> 2019, 68 patients [35 (52%) men, 65  $\pm$  16.9 years old] underwent PEG tube placement. Of them, 26 were hospitalized in the Intensive Care Unit (ICU) and 42 in an internal medicine ward (IMW). Sex, age, albumin levels and MUST score before PEG tube placement did not differ significantly between the two groups, but ICU patients had a higher BMI than the IMW patients (25.8  $\pm$  9.8 vs. 21.7  $\pm$  4.9,  $p=0.031$ ). Dementia (6 vs.0), cancer (10 vs. 2) and neurological diseases (12 vs. 4) were more frequent among IMW patients, whereas stroke (14 vs. 8) was more frequent among ICU patients ( $p=0.006$ ). 28<sup>th</sup> day survival data were available for 57 patients, but 8 of them were later lost to follow-up. Overall survival was 80 days (95% CI 40-120) and the mean survival was similar between ICU and IMW patients [58; 95% CI (30.8-86.1) vs. 103; 95% CI (25.5-181.5),  $p=0.569$ ]. In the multivariate analysis, 28<sup>th</sup> day survival was independently associated with the patient caretaker, i.e. patients looked after by their relatives had a 10.5 higher probability to be alive than patients looked after by health professionals in hospital or other health institutions (95% CI 1.63-67.9,  $p=0.014$ ). During the follow-up period, PEG tube was removed in 2 ICU and 7 IMW patients, following disease improvement.

**Conclusions** Survival after PEG tube placement was similar among ICU and IMW patients and the 28<sup>th</sup> day survival was independently associated with the patient caretaker.

### ePP185 PERCUTANEOUS ENDOSCOPIC GASTROSTOMY PLACEMENT - WHAT ARE THE RISK FACTORS FOR POOR OUTCOMES?

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DOI 10.1055/s-0040-1704579

**Aims** Percutaneous endoscopic gastrostomy (PEG) is a relatively safe well-established procedure to permit long term enteral feeding in patients with swallowing difficulties. However, there is a significant procedure-related and all-cause mortality risk. Controversy still remains regarding patient selection and optimal timing for the procedure. We aimed to identify risk factors associated with length of stay and mortality following PEG placement.

**Methods** We performed a retrospective study at a tertiary London-based hospital Trust. Endoscopy software (Unisoft GI reporting tool) was used to identify the last 100 patients to have a PEG placed in reverse chronological order from December 2018. Endoscopy reports were reviewed for indication. Electronic patient records were used to identify functional status prior to procedure, length of stay and mortality. Chest radiograph reports were reviewed for evidence of consolidation at the time of procedure. Serum markers including white cell count, creatinine and albumin were noted.

**Results** 100 patients had a PEG placed between February 2017 and December 2018.

**Conclusions** After admission, patients wait over a month to have PEG placement and total length of stay is over 2 months. Only half of patients are independent at time of PEG placement. Older age and lack of independence for activities of daily living are associated with higher mortality at 12 months after PEG placement. Consolidation on chest radiograph, leucocytosis and low albumin are significantly associated with mortality at 12 months. We conclude that patient selection for PEG placement should consider resolution of radiological and serological abnormalities.

► **Tab. 1** 12 month outcomes after insertion of PEG.

	12 month mortality (n=33)	12 month survival (n=67)	*p value
Independent ADLs	9 (27.3)	42 (62.7)	0.0009
Consolidation (Y)	16 (48.5)	7 (10.4)	0.00002
WCC	11.3 (4 - 37)	8.3 (3.6 - 17.3)	0.0004
Albumin	28.3 (18 - 35)	34.4 (15 - 49)	<0.0001

### ePP186 FACTORS THAT AFFECT THE REMOVAL OR REPLACEMENT OF PERCUTANEOUS ENDOSCOPIC GASTROSTOMY (PEG)

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DOI 10.1055/s-0040-1704580

**Aims: Introduction** Percutaneous endoscopic gastrostomy (PEG) is an invasive procedure. Several studies show that intrahospital mortality after PEG placement is 10.8% so there are patients who get few profits from PEG placement.

**Aims** to investigate factors that influence scheduled PEG replacement or removal performed in our center.

**Methods** We report a retrospective and descriptive study conducted in a tertiary Spanish center from 2014 to 2018.

**Results** A total of 158 patients were included: 84 men/74 women, mean age 67.75 years. PEG removal or replacement has occurred in 88 (55.7%) of patients. The main indications for PEG placement were acute cerebrovascular accidents (CVA) (35.4%), dementia (25.9%) and neurodegenerative disease (10.8%). The complications were reported in 37 patients (23.4%). The age was the only factor that had influence in PEG removal/replacement ( $p=0.006$ ). Regarding the association between indications and mortality, 66.7% of dementia patients and 40.9% of those with CVA died in the first 3 months after PEG placement. Whereas, 66.7% of patients with degenerative neuromuscular disease die after 6 months.

**Conclusions** In our study the patients with dementia and CVA who has PEG are the least profited from PEG placement. Therefore, the PEG indication should be individualized according to the patient's life expectancy and indications.

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Friday, April 24, 2020

14:30 – 15:00

Keeping the lumen 2

ePoster Podium 7

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### ePP187 ANALYSING OUTCOMES FROM ELECTIVE COLONIC STENTING FOR COLORECTAL CANCER AT A DISTRICT GENERAL HOSPITAL

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**DOI** 10.1055/s-0040-1704581

**Aims** To appraise outcomes for cases of elective Colonic stenting at our District General Hospital.

**Methods** In this retrospective study, cases of elective colonic stenting for Colorectal cancer over a 4 year period from 1/12/2015 to 1/12/2019 were identified via CIPTS (Delian system) an online database of endoscopy procedures. For identified patients, further demographics (age, sex) and outcome measures relating to procedure complications, 30 day mortality, intervention location and types of stent used were also collected.

**Results** Overall 29 individual patients underwent Colonic stenting with Boston Scientific Wireflex stents performed by three operators. A total of 30 procedures occurred as a case of stent migration requiring revision. Among this population, the mean age was 79.2yrs with a range between 41-98 and a slight female preponderance (N=15, 51.7%). Overall 30 day mortality was 10.34% (N=3) whilst 90 day survival was 75.9% (N=22). One patient had stenting as a bridge to surgical intervention. Rates of complications were low with one case of stent migration (3.4%), one case of wire perforation (3.4%) and one case of stent fracturing (3.4%) which required no repeat intervention. Locations of therapy were predominantly for sigmoid lesions (N=17, 58.6%) followed by descending colon (N=6, 20.7%), splenic flexure (N=3, 10.4%), rectum (N=2, 6.9%) and transverse colon (N=1 3.4%).

**Conclusions** Locally, Colonic stenting has proven an effective therapy for patients with Colorectal cancer with low rates of complications compared with previous meta-analysis data. Local 30 day mortality is higher than previously reported rates but comparable to previous data on Emergency surgical procedures. The financial implications of surgery and post-op care are also negated with only one patient requiring admission post-stenting among our cohort. Interestingly 90 day survival was promising, considering many patients had significant comorbidities of metastatic disease at the time of stenting. We aim to use this as a platform to expand stenting services and appraise emergency stenting.

**References** 1. Zhao XD Cai BB Cao RS et al. Palliative treatment for incurable malignant colorectal obstructions.

### ePP188 FEASIBILITY OF ENTERAL STENTS WITH A NEW METHOD FOR MALIGNANT OBSTRUCTION IN RT SIDE COLON

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**DOI** 10.1055/s-0040-1704582

**Aims** This study aimed to (1) investigate the effectiveness of SEMS insertion for right-sided obstructive colon cancer compared to conventional decompression tube placement and (2) confirm the safety and technical success of SEMS insertion in the right colon compared to left-sided SEMS insertion.

**Methods** The data from ten patients who underwent SEMS with a new technique for malignant obstruction of ascending colon in our hospital were analyzed retrospectively

**Results** Technical and clinical success of Rt side colonic obstruction was achieved in all patients of both groups. (cap group: 4/4, papillotome group: 9/9) range 66 to 100 percent.

Other adverse events (such as bleeding and perforation) were not happened. Bowel preparation status in both group were all poor. Expected length of lesion, maximum diameter of small bowel, maximum diameter of large bowel, and distribution of bowel dilatation (Total procedure time, Intubation time to lesion, total time from cannulation to stent deployment were not statistically different but trials of cannulation in papillotome group was lower than cap group ( $1.11 \pm 0.25$  vs  $2.5 \pm 0.91$ ,  $p < 0.001$ ).

**Conclusions** A new technique of curved type guiding tube with SEMS insertion for right-sided colon, especially distal ascending colon is significantly more effective than straight type guiding tube, and this procedure was safer and less technically challenging than expected. SEMS insertion should be considered for treating right-sided malignant colonic obstruction

### ePP189 OBSTRUCTIVE COLON CANCERS AT ENDOSCOPY ARE ASSOCIATED WITH ADVANCED TUMOR STAGE AND POOR PATIENT OUTCOME

**Authors** Baker F Abu<sup>1</sup>, Gal O<sup>1</sup>, Ovadia B<sup>1</sup>, Ganayem M<sup>1</sup>, Taher R<sup>1</sup>, Mari A<sup>2</sup>, Beshara A<sup>1</sup>, Kopelman Y<sup>1</sup>

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**DOI** 10.1055/s-0040-1704583

**Aims** It is still debatable whether a colorectal cancer tumor size affects patients' prognosis and outcome. A more clinically relevant and frequently encountered scenario is the presence of subclinical obstructive mass during endoscopic exam hindering the passage of endoscope and precluding complete exam. The significance and implications of this finding were not fully investigated, and will be addressed in this study.

**Methods** In this retrospective cohort study we reviewed endoscopy, surgery, pathology and oncology reports of patients diagnosed with colorectal cancer over a 10-year period (2007–2016). Patients with finding of obstructive tumor at endoscopy were compared to those with non-obstructive tumors. We compared surgical stages, histologic grades and overall survival between both groups. We performed multivariate analysis to identify independent risk factors associated with advanced CRC stage at diagnosis.

**Results** 144 patients had obstructive colonic tumors while 254 had non-obstructive tumors and constituted the control group. Obstructive colon cancer group was significantly associated with advanced tumor stage (Stage 3 or above) at diagnosis compared to the non-obstructive controls (69% Vs. 42%, OR = 3.018, 95% CI = 1.951–4.670;  $P < 0.01$ ). Likewise, in terms of histologic grade, more patients in the obstructive group were classified as moderate to poorly differentiated compared to controls (64.5% vs. 38.4%;  $P < 0.001$ ). Patients with obstructive tumors

were significantly associated with decreased one (77.8% vs. 86%;  $P = 0.01$ ), three (63.6% vs. 77.4%;  $P < 0.01$ ) and five years (53.4% vs. 67.3% vs.;  $P < 0.01$ ) overall survival. Increased overall mortality was observed in survival curves of patients with obstructive tumors along all follow-up period compared to non-obstructive controls.

**Conclusions** Even in the absence of clinical sequela, obstructive colorectal cancer at endoscopic level may be associated with higher stage at diagnosis and reduced overall survival. Further prospective studies are warranted to confirm these findings and address their implication on patients' management.

Friday, April 24, 2020

Safety of endoscopy

14:30–15:00

ePoster Podium 8

### ePP190 POSITIVE IMPACT OF NURSE-LED CLINICAL VALIDATION AND STRICT APPLICATION OF GUIDELINES TO ENDOSCOPY WAITING LISTS IN A TERTIARY IRISH HOSPITAL

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DOI 10.1055/s-0040-1704584

**Aims** Assess the impact of nurse-led clinical review and the application of guidelines (European Society of Gastroenterology and National GI Endoscopy Quality Improvement Programme) to endoscopy lists to see if this will result in an increase in capacity within the system.

**Methods** A retrospective audit of patients currently overdue a surveillance procedure according to old guidelines. Previous endoscopy and histopathology reports were reviewed to evaluate the appropriateness of the procedure. Selected patients were contacted for up-to-date information and preference. From the ESGE and NQIG guidelines, a framework of criteria was developed and applied to postpone, remove, and schedule patients.

**Results** 1651 patients were overdue endoscopic procedures from the 2014–2018 surveillance lists. Clinical validation of 546 of these endoscopic procedures till now (435 colonoscopies and 111 OGDs) yielded the following results: 82 (15%) colonoscopies and 2 (0.4%) OGDs were postponed and 158 (28.9%) colonoscopies and 43 (7.9%) OGDs were removed. This resulted in a total of 84 (15.4%) procedures rescheduled and 201 (36.8%) procedures removed from waiting lists. The remaining 195 (35.7%) colonoscopies and 66 (12.1%) OGDs, totalling 261 (47.8%) procedures were scheduled to be performed.

An immediate cost saving of €133,260 was gained from the removal of 201 procedures. A further saving of €29,115 was gained due to 84 procedures, resulting in a total cost saving of €162,375. Additionally, 285 endoscopy spaces were released.

**Conclusions** This nurse-led role is a positive process which addresses the capacity gap. Adherence to guidelines allows for a framework that balances clinical need and service demand. The appropriate listing, significant cost savings, and increased endoscopy capacity allow for a more efficient and streamlined service.

### ePP191 SAFETY ATTITUDES IN ENDOSCOPY: AN URBAN TERTIARY REFERRAL CENTRE VS. A RURAL SINGLE ROOM UNIT

**Authors** Murphy CL<sup>1</sup>, Uppamuchikkal P<sup>2</sup>, Murray M<sup>3</sup>, Wieneke P<sup>4</sup>, Sheridan J<sup>1</sup>  
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DOI 10.1055/s-0040-1704585

#### Aims

Evaluation of patient quality and safety in both urban and rural endoscopy units primarily focuses on technical aspects of endoscopy. Knowledge of staff culture towards patient safety is lacking. These non-technical skills such as leadership and communication are influenced by training. In aviation, this has led to major safety improvements. The aim of this study was to investigate if staff safety culture differed between a tertiary referral centre vs. a small rural endoscopy unit.

**Methods** The validated Safety Attitudes Questionnaire (Sexton et al) was administered to 34 endoscopy staff. The questionnaire explores safety culture across; Teamwork Climate, Safety Climate, Perceptions of Management, Job Satisfaction, Working Conditions, and Stress Recognition.

**Results** A high safety attitude (score = 75%) was seen across all domains in the rural centre and 4 domains in the urban unit (►Table 1). There was no difference in job satisfaction and teamwork climate between both sites. When compared to the rural centre perception of management was significantly lower in the tertiary referral centre where hospital management rather than unit management were described as unsupportive.

**Conclusions** Both institutions scored favourably however higher safety attitudes were demonstrated in the rural centre. Areas for improvements especially regarding relationships with management will be acted upon in the urban centre. These results should be interpreted in the context of vast differences in procedure number and case-mix in the units. Examination of safety attitudes is a worthwhile exercise as it gives a broader overview of non-technical skills within an endoscopy service as opposed to reliance of technical parameters alone.

►Tab. 1 Results Table Urban vs Rural Endoscopy Units

Domain	Urban	Rural (p Value)
working conditions	73%	89.50% (0.01314)
stress recognition	73.25%	88.88% (0.05118)
perception of hospital management	56%	97.70% (< .00001)

### ePP192 PROPOFOL VERSUS MIDAZOLAM SEDATION FOR ELECTIVE ENDOSCOPY IN PATIENTS WITH CIRRHOSIS. A SYSTEMATIC REVIEW AND META-ANALYSIS OF RANDOMIZED CONTROLLED TRIALS

**Authors** Guacho JL<sup>1</sup>, Ribeiro IB<sup>1</sup>, de Moura DTH<sup>1</sup>, Coronel M<sup>1</sup>, Bernardo WM<sup>1</sup>, Sakai P<sup>1</sup>, de Moura EGH<sup>1</sup>

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DOI 10.1055/s-0040-1704586

**Aims** Patients with cirrhosis frequently require sedation for elective endoscopic procedures. Several sedation protocols are available, but choosing an appropriate sedative in patients with cirrhosis is challenging. We aimed to conduct a systematic review and meta-analysis of available literature to compare propofol and midazolam for sedation in patients with cirrhosis during elective endoscopic procedures in an attempt to understand the best approach.

**Methods** This systematic review and meta-analysis was performed using PRISMA guidelines. Electronic searches using MEDLINE, EMBASE, Central Cochrane, Latin-American, and Caribbean Health Sciences Literature (LILACS) databases. Only randomized control trials (RCTs) comparing midazolam and propofol sedation for elective endoscopy in patients with cirrhosis were included. The primary outcomes of interest were procedure time, recovery time, time to discharge, and adverse events, including bradycardia, hypotension, and hypoxemia.

**Results** The search yielded 3,576 records. Out of these, 8 RCTs with a total of 596 patients (302 in the Propofol group and 294 in the Midazolam group) were included for the final analysis. The procedure time was similar between the groups (MD 0.25 (95%CI -0.64-1.13), p-value < 0.59). The recovery time was significantly less in the propofol group as compared to the midazolam group (MD -8.19 (95%CI -10.59 - -5.79), p-value < 0.00001). Similarly, the time to discharge was significantly less in the propofol group (MD -12.98 (95%CI -18.46 - -6.50), p-value < 0.00001) (Figure 2). Adverse events were similar in both the groups (RD 0.02 (95%CI 0-0.04), p-value 0.58). Moreover, no significant difference was found for each individual adverse event (bradycardia RD 0.03 (95%CI -0.01-0.07), p-value 0.16; hypotension RD 0.03 (95%CI -0.01-0.07), p-value 0.17 and hypoxemia RD 0.00 (95%CI -0.04-0.04), p-value 0.93).

**Conclusions** Propofol has shorter recovery and patient discharge time as compared to midazolam. However, there is no difference in adverse events.

Friday, April 24, 2020 15:00 – 15:30  
Upper GI: Resection techniques 5 ePoster Podium 1

### ePP193 PEDUNCULATED GIANT GASTRIC POLYP RESECTED BY ENDOSCOPIC SUBMUCOSAL DISSECTION

**Authors** Aguilar A<sup>1</sup>, Iborra I<sup>1</sup>, Caballero N<sup>1</sup>, Hernández JC<sup>1</sup>, Marín I<sup>1</sup>, de Vega VM<sup>1</sup>, Luna D<sup>1</sup>, Cañete F<sup>1</sup>, Domènech E<sup>1</sup>, Uchima H<sup>1</sup>

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DOI 10.1055/s-0040-1704587

**Clinical case** Elderly patient, ASA III, anticoagulated, presented with melena. Endoscopy revealed an ulcerated antral polyp with a 4 cm twisted pedicle that prolapsed through pylorus. Endoscopic resection was planned.

**Endoscopic findings** The lesion was protruding into duodenum and the big head of the polyp made impossible to snaring, so ESD using SB Knife was started allowing en bloc resection of the lesion. Histology confirmed low grade dysplasia intestinal type adenoma.

**Conclusions** ESD can be useful in pedunculated gastric polyps that cannot be snare resected because of wide pedicle or duodenal protrusion.

### ePP194V ENDOSCOPIC RESECTION BY STER OF GASTRIC GIST OF THE MUSCULAR PROPIA

**Authors** Roson P<sup>1</sup>, Cano F<sup>1</sup>, Ortega A<sup>1</sup>, Garcia A<sup>1</sup>, Romero MA<sup>1</sup>, Puya M<sup>1</sup>, Cotta J<sup>1</sup>

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DOI 10.1055/s-0040-1704588

GISTs are potentially aggressive tumors that metastasize to the liver, peritoneum or lung in 38% of patients.

When a surgical resection is decided, the block lesion must be removed with the pseudocapsule that covers them. Adjacent tissue invasion is very rare and routine lymphatic cleaning is not recommended.

**Clinical case** 25-year-old woman who is diagnosed of Gist of gastric minor curvature by Eco-Paaf. Local resection was decided by STER since a transmural resection was anticipated.

The technique consists in creating a submucosal tunnel until the lesion is reached, resect it from de muscularis propia, and finally close the mucosotomy.

### ePP195V SUBMUCOSAL TUNNELING ENDOSCOPIC RESECTION (STER) FOR A GIANT ESOPHAGEAL LEIOMYOMA

**Authors** Dharamsi S<sup>1</sup>, Dashatwar P<sup>1</sup>, Bapaye A<sup>1</sup>

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DOI 10.1055/s-0040-1704589

**Introduction** STER is recommended for esophageal lesions < 4 cm diameter. Resection of larger lesions is technically challenging. This video-case demonstrates technical nuances of performing STER for large leiomyomas.

**Patients and Methods** 37/Male presented with dysphagia. CT scan, EGD and EUS-FNA revealed giant esophageal leiomyoma (6 x 2.5 x 4 cm) in MP layer at 20 cm.

**Results** Procedure time 210 min. No adverse events. Contrast swallow confirmed absence of luminal leak. At one-month follow up, EGD demonstrated healthy mucosal scar. No dysphagia noted.

**Conclusions** STER is feasible and safe for giant esophageal SET's. Intracorporeal morcellation of tumor before delivering specimen simplifies procedure.

Friday, April 24, 2020 15:00 – 15:30  
ERCP: Benign pancreatic disease ePoster Podium 2

### ePP196 A REVIEW OF GROWTH AND INTERVENTION OF PANCREATIC CYSTIC LESIONS UNDER SURVEILLANCE IN A TERTIARY REFERRAL CENTRE

**Authors** Mellotte G<sup>1</sup>, Parihar V<sup>1</sup>, Breslin N<sup>1</sup>, Ridgway P<sup>2</sup>, Conlon K<sup>2</sup>, Ryan BM<sup>1</sup>

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DOI 10.1055/s-0040-1704590

► **Tab. 1** Cyst Size and Worrying Feature Characteristics

	Baseline	6 Months	1 Year	2 Years
Mean size	18.7 mm (±11.9 m- m)	20.58 mm (±14.7 m- m)	16.83 mm (±11.9 m- m)	16.17 mm (±10.5 m- m)
Mean interval size change	N/A	1.34 mm (±6.8 m- m)	-0.24 m- m ±8.7 m- m)	1.95 mm (±5.6 m- m)
Development of Worrisome Features	81	10	12	3

**Aims** Our aim were to review our surveillance and intervention of pancreatic cystic lesions in our cohort from 2005–2019.

**Methods** Patients with pancreatic cystic lesions were identified from the records of the Upper GI oncology MDT in Tallaght Hospital. These patients clinical notes, radiology, and endoscopy records were all examined to determine progress of their disease. Death, surgery, or MDT discontinuation of surveillance at MDT were deemed the endpoints for our study.

**Results** 242 patients (139 female) were identified with pancreatic cystic lesions under surveillance in TUH. Median age of diagnosis was 69.

Mean cyst size at diagnosis was 19 mm ( $\pm 14.5$  mm); 81 patients had at least 1 worrisome feature at diagnosis.

24 patients progressed to surgery for their PCL while under surveillance, median time to surgery was five months, (range 1 month to 5 years). 16 patients had their surgery within a year of diagnosis. 14 patients died while still under surveillance, 14 further patients had their surveillance due to unsuitability for intervention.

The median length of follow up was 1.81 years (range 0.35–9.6 years). 84 patients underwent 6 month surveillance, mean size increased by 1.3 mm at 6 months. 108 patient received a 1 year scan, mean size decreased at one year by 0.41 mm. The mean annual cyst size change across our cohort surveillance (525.8 patient years) was 0.83 mm ( $\pm 6.22$  mm).

**Conclusions** The majority of our patient cohort who progressed to surgery had their operation within one year. The mean annual change was less than 1 mm making us question the benefit of annual surveillance of these patients beyond the first year of diagnosis.

### ePP197 HEMOSUCCUS PANCREATICUS: A INFREQUENT CAUSE OF LIFE-THREATENING HAEMORRHAGE

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DOI 10.1055/s-0040-1704591

**Aims** Hemosuccus pancreaticus (HP) is a rare but life-threatening cause of upper gastrointestinal bleeding through the main pancreatic duct. This condition most commonly follows pseudoaneurysm formation secondary to acute or chronic pancreatitis.

The aim of our study is to highlight the challenges in the diagnosis and management of HP and to formulate a protocol to effectively and safely manage this condition.

**Methods** We present a case series of five patients (N = 5, three men and two woman, mean age 55 yrs) admitted to our unit with gastrointestinal bleeding subsequently found to be HP for the period between 2017–2019

**Results** HP occurred in 3 patients with chronic and in two with acute alcoholic pancreatitis.

All patients presented overt digestive bleeding – two with melena, two with hematochezia, and one hemorrhagic shock.

Diagnosis was confirmed by gastroduodenoscopy and CT angiography.

Selective digestive angiography was done in 4 patients:

Arterial embolization was attempted in one patient. Due to partial recanalization of the vessel and re-bleeding, re-intervention was done with additional embolization.

Placement of nitinol SEMs covering the pseudoaneurysm was done in two patients. Due to persistence of leakage, a second stent graft was implanted in one of the patients.

In one patient the angiography was only diagnostic.

ERCP with pancreatic duct stenting and tamponade was performed in two patients. In one of the patients ERCP was combined with selective angiography and self-expandable stent was placed.

The bleeding was successfully managed in four of the patients, and no further surgical treatment was needed.

There was one death due to multiple organ failure and hemorrhagic shock.

**Conclusions** We recommend an interventional procedure for the initial treatment of HP.

ERCP with pancreatic stent placement (as a single procedure or in combination with therapeutic angiography) is effective and safe management option.

Surgical treatment should be considered, when interventional therapy is not successful.

### ePP198 PANCREATIC LEAKS TREATED ACCORDING TO AN ENDOSCOPY-ORIENTED CLASSIFICATION: A TERTIARY-CARE CENTER EXPERIENCE

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DOI 10.1055/s-0040-1704592

**Aims** In recent years, advances in interventional endoscopy have led to a substantial change in management algorithm of pancreatic leaks and fistula [2]. In 2017 our group proposed a new classification which combines anatomical and functional criteria with the purpose of guiding physicians in selecting the appropriate endoscopic treatment strategy for such conditions [3]. Aim of this study was to evaluate the validity and clinical usefulness of an endoscopy-oriented classification for pancreatic leaks in a clinical setting.

**Methods** All patients who underwent ERCP for pancreatic leaks between 1<sup>st</sup> February 2012 and 31<sup>th</sup> March 2019 were retrospectively reviewed. We gathered the following data: patients demographics, etiology of the leak, type of endoscopic treatment, success, number of procedures and adverse events

**Results** from 1<sup>st</sup> February 2012 to 31<sup>th</sup> March 2019, 67 patients who underwent endoscopic treatment for pancreatic leaks or fistula. In most cases pancreatic duct leaks occurred as a result of acute pancreatitis (n = 21), pancreatic or abdominal surgery (n = 41) or pancreatic trauma (n = 5). Pancreatic leaks were classified as type I (n = 10), type II (n = 27) and type III (n = 28) according to our endoscopy-oriented classification and treatment strategy were consistently selected. Overall technical success was 100% while clinical success was achieved in 89.2% of patients. At univariate analysis, only presence of sepsis and older age resulted associated with lower success. Clinical success required a mean of 1.9 procedures for patient (range 1 to 4 procedures).

**Conclusions** Our single-center experience shows excellent success rates achieved by tailoring treatment on the anatomic and functional features of the leak according to the above-mentioned classification. An endoscopy-oriented classification could lead to a better standardization of treatment, guide physician in the clinical setting and improve outcomes.

Friday, April 24, 2020

Innovation in enhanced imaging

15:00 – 15:30

ePoster Podium 3

### ePP199 FUSION RADIOLOGY FOR ENDOSCOPIC DRAINAGE OF PANCREATIC FLUID COLLECTIONS: AN INNOVATIVE SINGLE CENTER EXPERIENCE

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DOI 10.1055/s-0040-1704593

**Aims** Virtual reality obtained by the fusion of images can be applied to several fields of medicine leading to the so-called “augmented reality”. Since 2017 we have been using a new digital angiographic system (Discovery IGS 40, General Electric) in biliopancreatic endoscopy, where fluoroscopy can be fused with pre-procedural CT or MRI. Specifically the present study aimed at verifying the

advantages that fusion imaging could bring in EUS-guided drainage of post-pancreatitis fluid collection (PFC), i.e. pseudocysts or WON, in terms of more appropriate visualization, drainage approach and time needed for resolution.

**Methods** 17 drainages performed with traditional radiology (group 1) were retrospectively compared with 14 ones achieved with fusion approach (group 2). The two population were homogenous for age, sex, pancreatitis etiology and indication for drainage whereas PFCs of group 2 were larger (663 cm<sup>3</sup> vs 437 cm<sup>3</sup>), more frequently WON than pseudocysts and were treated more precociously. As for procedure, in the group 2, thanks to fusion imaging, we didn't need ever contrast media – that was pivotal with traditional radiology – to adequately define lesion morphology. LAMS (Axios) stents were placed mainly in group 2, while in group 1 other types of stent were used.

**Results** The procedure of EUS-guided drainages of group 2 (Fusion) were quicker (67 minutes vs 100) ( $p = 0.01$ ), safer – with a lower rate of complication (14.3% vs 37.5%) – and more effective: indeed 12/14 PCF (85.7%) achieved complete resolution in a shorter time – 67% of them within 90 days – instead only 11/17 collections of group 1 (64.7%) obtained the total emptying, more slowly – 36% within 90 days. The logistic regression showed that PFC attained resolution with OR = 3 (95% CI 0.25–36.77) only if belonging to group 2.

**Conclusions** In this serie our innovative Fusion imaging approach seems to improve EUS-guided drainage of PFC outcomes.

## ePP200 DIFFERENTIATION BETWEEN PANCREATIC CYSTIC LESIONS USING IMAGE PROCESSING SOFTWARE (FIJI) BY ANALYZING ENDOSCOPIC ULTRASONOGRAPHIC (EUS) IMAGES

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**DOI** 10.1055/s-0040-1704594

**Aims** EUS is the most accurate imaging modality for evaluation of different types of pancreatic cystic lesions; however, distinguishing between malignant and benign lesions remains challenging. Our aim was to analyze EUS images of pancreatic cystic lesions using an image processing software (Fiji).

**Methods** We specified echogenicity of the lesions by measuring the gray value of pixels inside the selected areas. Besides the entire lesion, its cystic and solid parts were also separately selected for assessment. Following the software analyzing process images were divided into groups (serous cystic neoplasm/SCN), non-SCN and pseudocyst) according to the cytology results of the lesions. Intraductal papillary mucinous neoplasms (IPMNs) and mucinous cystic neoplasms (MCNs) were classified as non-SCN category.

**Results** EUS images of 33 patients (21 females, 12 males; mean age of 60.9 ± 10.1 and 66.3 ± 11.6 years, respectively) were assessed. Overall 73 images were processed by the software: 36 in non-SCN, 13 in SCN and 24 in the pseudocyst group. The mean gray value of the entire lesion in non-SCN group was significantly higher than in SCN group (31.7 vs 25.5;  $p = 0.022$ ). The area ratio (area of cystic part/entire lesion) in non-SCN, SCN and pseudocyst group was 42%, 55% and 70%, respectively; significantly lower in non-SCN group than in SCN and pseudocyst group ( $p = 0.0058$  and  $p < 0.0005$ , respectively). The lesion density (sum of the gray values/area of the lesion) was also significantly higher in non-SCN group compared to the SCN- and pseudocyst group (4802.48/mm<sup>2</sup> vs 3865.87/mm<sup>2</sup> vs 3192.27/mm<sup>2</sup>;  $p = 0.022$  and  $p = 0.004$ , respectively). No correlation was found between the intracystic CEA levels and the analyzed cystic gray values.

**Conclusions** The computer-aided diagnosis decision is being used increasingly due to the rapid development of the information technology. The EUS image analysis process may have a potential to be a diagnostic tool for the evaluation and differentiation of pancreatic cystic lesions.

## ePP201 RED-GREEN-BLUE (RGB) IMAGE ANALYSIS OF PANCREATIC MASS-ELASTOGRAPHIES IN ENDOSCOPIC ULTRASOUND (EUS) CAN PREDICT MALIGNANCY- A PILOT STUDY

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**DOI** 10.1055/s-0040-1704595

**Aims** To investigate the accuracy of quantitative image analysis of EUS-elastographies (tissue elasticity) to predict malignancy of solid pancreatic lesions.

**Methods** Elastographies of solid pancreatic masses obtained with EUS between 01/2014-06/2019 were extracted from Hitachi V70 device and analyzed retrospectively. Quantitative RGB based analysis was performed using a Java image processing program (ImageJ,NIH). Red indicates soft, blue hard, and green intermediate tissue-elasticity. The exact amount of color was measured and expressed in pixels and percentages. After calibration of each image, the color intensity was measured on a scale of 0–255 for 8-bit image. Intensity ratio for each color was defined as relation between absolute value for this color and the intensity of the sum of all three colors (R + G + B). Tissue surrounding the tumor outside well-defined margins of the lesion on ultrasound was not include in the analysis. Final diagnosis was made either by histopathology or radiological findings in combination with tumor markers and clinical follow-up.

**Results** 59 solid pancreas tumors evaluated by strain elastography were analyzed: 45(75%) malignant (60% adenocarcinoma,8.3% metastasis and 6.6% neuroendocrine tumors) and 14(23.3%) benign masses. Cut-offs values to differentiate between malignant and benign pancreatic tumors were calculated for parameters with good correlation for the presence of malignancy (criteria,table). Risk of malignancy according to these criteria was: 4/4(15 cases)-100%, 3/4(24 cases)- 87.5%, combined 3 or 4/4(39 cases)-92.3%; 2/4(11 cases)-54.5%, 1/4(4 cases)-75% and 0/4(5 images)-0%.

► **Tab. 1** Parameters with good correlation for the presence of malignancy.

Parameter (criteria)	Cut-offs (%)	Sensitivity (%)	Specificity (%)	AUC
Blue color (%) (Spearman $r = 0.192$ , $p = 0.10$ )	> 55	93.3	35.7	0.62
Green color (%) ( $r = -0.218$ , $p = 0.09$ )	< 42.5	97.8	42.5	0.64
Green color Intensity Ratio ( $r = -0.391$ , $p = 0.002$ )	< 56	71.1	78.6	0.76
Red color Intensity Ratio ( $r = -0.194$ , $p = 0.10$ )	< 18.5	42.2	92.9	0.63

**Conclusions** Quantitative image analysis of solid pancreatic lesion elastographies obtained in EUS may predict (3 or 4/4 criteria) or exclude (0/4 criteria) malignancy with high accuracy.

Friday, April 24, 2020  
Standards of endoscopy

15:00 – 15:30  
ePoster Podium 4

### ePP202 ASSOCIATION OF PATIENT FACTORS WITH PEDUNCULATED AND NON-PEDUNCULATED LESION REPORTING: OBSERVATIONS FROM THE EUROPEAN COLONOSCOPY QUALITY INVESTIGATION QUESTIONNAIRE

**Authors** Koulaouzidis A<sup>1</sup>, Amaro P<sup>2</sup>, Agrawal A<sup>3</sup>, Brink L<sup>4</sup>, Fischbach W<sup>5</sup>, Fuccio L<sup>6</sup>, Hünger M<sup>7</sup>, Kinnunen U<sup>8</sup>, Ono A<sup>9</sup>, Petruzzello L<sup>10,11</sup>, Riemann JF<sup>12,13</sup>, Toth E<sup>14</sup>, Amlani B<sup>15</sup>, Spada C<sup>16</sup> on Behalf of the ECQI Group

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DOI 10.1055/s-0040-1704596

**Aims** To assess patient factors associated with pedunculated (Ip + Isp) and non-pedunculated (Is + flat) lesion reporting, as defined by Paris classification.

**Methods** The development of the procedure questionnaire, by the European Colonoscopy Quality Investigation (ECQI) Group, has been previously described (UEGW 2015 and 2016). We analysed data collected between 2/6/16 and 30/4/18.

**Results** Of 6,445 procedures, 2,621 reported a polyp in at least one colon segment (40.7%). Pedunculated lesions were reported in 601 procedures and non-pedunculated lesions in 2,255 procedures.

Reporting of pedunculated lesions varied with age (increasing with increasing age group,  $p < 0.0001$  overall). Non-pedunculated lesions varied by age with a peak in the 60–69 age group ( $p < 0.0001$  overall): 10–29 3.0%, 30–39 16.0%, 40–49 23.8%, 50–59 31.9%, 60–69 42.5%, 70–79 42.1%, 80 or over 38.0%.

Reporting of pedunculated lesions varied by BMI (increasing with increasing BMI group,  $p = 0.042$  overall). Non-pedunculated lesions also varied by BMI, generally increasing with increasing BMI group ( $p < 0.0001$  overall).

In those who had received a previous total colonoscopy within the last 5 years, reporting of pedunculated lesions decreased (7.9% vs 10.2%,  $p = 0.003$ ), while reporting of non-pedunculated lesions increased (43.2% vs 29.6%,  $p < 0.0001$ ). There was no difference in the reporting of either pedunculated ( $p = 0.121$ ) or non-pedunculated ( $p = 0.509$ ) lesions between in- and outpatients. Interestingly, the adequacy of bowel clearance also had no association with the reporting of either type of lesion ( $p = 0.935$  and  $p = 0.714$ ).

**Conclusions** Pedunculated lesions are less commonly reported than non-pedunculated lesions. Reporting of both pedunculated and non-pedunculated lesions varied by age and BMI. In patients with a previous total colonoscopy in the past 5 years the reporting of pedunculated lesions was decreased while reporting of non-pedunculated lesions was increased.

### ePP203 EFFICACY AND SAFETY OF SODIUM PICOSULFATE-MAGNESIUM CITRATE IN BOWEL PREPARATION FOR ELDERLY IN KOREAN POPULATION: A PILOT STUDY

**Authors** Kim SH<sup>1</sup>, Lee KW<sup>1</sup>, Kim S<sup>1</sup>, Jang SH<sup>1</sup>, Jeon HJ<sup>1</sup>, Choi SJ<sup>1</sup>, Lee JM<sup>1</sup>, Choi HS<sup>1</sup>, Kim ES<sup>1</sup>, Keum B<sup>1</sup>, Jeon YT<sup>1</sup>, Lee HS<sup>1</sup>, Chun HJ<sup>1</sup>, Kim CD<sup>1</sup>

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DOI 10.1055/s-0040-1704597

**Aims** Bowel preparation is one of the most important colonoscopy quality indicators. Sodium picosulfate-magnesium citrate (SP-MC) is getting more attention for its better tolerance and patient satisfaction compared to PEG-based solutions. However, its efficacy and safety in elderly patients has not been verified enough in Korean population. We compared the efficacy and safety of SP-MC compared to polyethyleneglycol (PEG) based bowel preparations in the elderly.

**Methods** A prospective, randomized, controlled trial was conducted at Korea University Anam Hospital. 70 outpatients and 68 inpatients who were over 65 years of age randomized to either PEG or SP-MC group. Bowel preparation quality was recorded in a blinded manner by the endoscopist using the Boston Bowel Preparation Scale (BBPS). Patient satisfaction was studied by questionnaire before colonoscopy. Side effects including hyponatremia and acute kidney injury were monitored by laboratory test following bowel preparation.

**Results** Baseline characteristics between the two groups were similar. BBPS score did not differ significantly between the two groups (PEG: SPMC, 6.97: 7.49,  $P = 0.131$ ). Adenoma detection rates were also similar (PEG: SPMC, 51.5%: 52.9%,  $P = 0.805$ ). Proportion of patients who answered more satisfactory than previous bowel preparation were higher in the SPMC group (24.3% vs 60.2%,  $P < 0.001$ ). There was no reported acute kidney injury or electrolyte imbalance following preparation in both groups.

**Conclusions** Bowel preparation quality with the use of SP-MC was not inferior to PEG based preparation with even better patient satisfaction. Incidence of electrolyte imbalance or decline in renal function was not observed. SPMC is expected to be safely used in elderly without chronic renal diseases.

### ePP204 A STANDARDS-BASED AUDIT LOOKING AT THE APPROPRIATENESS OF COMMUNITY REFERRALS FOR IN-HOSPITAL ELECTIVE OGD

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DOI 10.1055/s-0040-1704598

**Aims** To reduce the number of inappropriate and unnecessary elective OGDs performed. To encourage proper use of the guidelines both in the community and by in-hospital Doctors.

**Methods** During a 3-month period, 188 patients had been admitted for an elective OGD. Our sample size included 150 of those patients, chosen by random selection. We used the NICE guidelines for OGD referrals from the community (Table 1); looking at patient demographics, patient symptoms, the use of PPIs, the use of H2 receptor antagonists and H Pylori (HP) testing. We also considered the presence of any red flag GI symptoms.

**Results** Of the 150 Day case OGDs analysed, 84 (67%) had been referred by their GP. The remainder had been scheduled for an OGD from OPD appointments or during a previous in-patient admission. Of the GP referrals, 80% had indicative symptoms as per the NICE guidelines. (Fig1. Demonstrates symptoms and frequencies). Of these, 60% had received treatment with four weeks of PPI, 7% received treatment with four weeks of H2 receptor antagonists and 4% had non-invasive HP testing prior to referral, as recommended by NICE guidelines (attached below).

**Conclusions** In conclusion, excepting those with red flag symptoms, all patients < 55 yr should have HP testing and an adequate therapeutic trial of PPI prior to referral for OGD. The rationale for this is the very low yield of management altering pathology diagnosed at OGD in such cases set against the risk and costs of endoscopy. Highlighting such guidance to GPs and other referring doctors is therefore of paramount importance to improve the quality, safety and cost effectiveness of health care in this area. We now plan to examine the prevalence of HP in this cohort referred without prior testing.

Friday, April 24, 2020  
ERCP complications in elderly

15:00 – 15:30  
ePoster Podium 5

## ePP205 SAFETY AND EFFECTIVENESS OF ENDOSCOPIC RETROGRADE CHOLANGIOPANCREATOGRAPHY IN PATIENTS OLDER THAN 90 YEARS

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**DOI** 10.1055/s-0040-1704599

**Aims** ERCP is an effective diagnostic and therapeutic procedure in pancreaticobiliary diseases. Because the risk of complications increases with aging, more attention should be paid during ERCP in elderly patients. This study was aimed to evaluate the safety and effectiveness of ERCP in patients older than 90 years.

**Methods** Medical records of 801 patients older than 70 years who underwent ERCP from January 2012 to December 2015 were reviewed retrospectively. Of those, 25 patients over age 90 were defined as group A and 776 patients younger than age 89 was defined as group B.

**Results** Mean age was 91.4 ± 1.4 years in group A and 77.4 ± 5.0 in group B ( $p < 0.001$ ). Female proportion was significantly higher in group A than group B (80.0% vs 45.7%,  $p = 0.001$ ). The most common indication of ERCP was CBD stone in both groups (84% vs 66.6%,  $p = 0.07$ ). Of the total 801 patients, ERCP was successful at initial ERCP in 754 patients (94.1%) and post-ERCP complications occurred in 202 patients (25.9%). Success rate (92% vs 94%,  $p > 0.05$ ) and overall complication rate (24% vs. 26%,  $p > 0.05$ ) were not significantly different between the two groups. The most common complication was acute pancreatitis (12% in group A and 16% in group B,  $p = 0.78$ ). Incidence of post ES bleeding in group A and group B was 12.0% and 7.7%, respectively ( $p = 0.40$ ).

**Conclusions** Extremely old age did not increase the risk of complications associated with ERCP and showed similar success rate. ERCP seemed to be safe and effective in patients older than 90 years.

## ePP206 CEREBRAL OXYGENATION MONITORING IN PATIENTS UNDERGOING ERCP UNDER DEEP SEDATION: A PROSPECTIVE OBSERVATIONAL STUDY

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**DOI** 10.1055/s-0040-1704600

**Aims** Unintentional prolongation of time under deep sedation increases the risk for sedation-related complications during endoscopic retrograde cholangiopancreatography (ERCP). Cerebral oximetry provides early detection of cerebral hypoxia and hypoperfusion by demonstrating the regional hemoglobin oxygen saturation (rSO<sub>2</sub>) in the cerebral cortex. In the first study to date, we

aimed to evaluate whether cerebral oxygenation is affected during deep sedation in ERCP and determine whether cerebral desaturation events (CDEs) are associated with deeper levels of sedation and cardiopulmonary complications.

**Methods** Consecutive patients who underwent ERCP between July and October 2019 were included prospectively. Propofol was used as monotherapy. Sedation depth was assessed with bispectral index (BIS) and values between 40 and 60 were defined as deep sedation. Participants were monitored continuously along with INVOS 5100 C cerebral oximeter (Covidien-Medtronic, Boulder, Colorado, USA). rSO<sub>2</sub> values were registered prior to sedation (baseline value), every 5 minutes until ERCP termination and at recovery of consciousness. BIS values were simultaneously recorded. Cerebral desaturation was defined as a greater than 10% drop from individual baseline rSO<sub>2</sub>.

**Results** Sixty patients, mean age 67.9 years, were enrolled. BIS values ranged from 18 to 84. No significant correlation was observed between rSO<sub>2</sub> and BIS measurements throughout the recordings. Data from patients ≥ 65 years ( $n = 37$ ) were analyzed separately with similar results. Time course of mean rSO<sub>2</sub> and BIS recordings exhibited little variability throughout the sedation period and no association between percent changes of rSO<sub>2</sub> and BIS was observed ( $r = -0.086$ ,  $p = 0.44$ ). Overall, CDEs were detected in 4.8% of INVOS recordings but none was associated with clinical manifestations. Eight cardiopulmonary complications (hypoxia, hypotension) occurred without the presence of cerebral desaturation.

**Conclusions** Cerebral oxygenation and depth of sedation remained uncorrelated at every time-point of the procedure while they exhibited little variability throughout the sedation period. Cerebral oximetry did not detect complications earlier than standard monitors.

## ePP207 EFFICACY AND SAFETY OF ERCP IN LATE ELDERLY: A UK PERSPECTIVE

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**DOI** 10.1055/s-0040-1704601

**Aims** To compare the differences in efficacy and complications in ERCP between patients older and younger than 75 years old.

**Methods** A retrospective descriptive and analytical study, we reviewed all ERCP procedures data from the hospital-based registry carried out during the period (2016, 2017, and 2018), and studied information related to patients demographics and clinical data, and post-procedure adverse effects. SPSS 21 was used for statistical analysis.

**Results** Total number of cases was 588: 574 (97.6%) cases were done under conscious sedation, while 14 (2.3%) cases were done under general anaesthesia.

Male  $n = 241$  (41%), female  $n = 347$  (59%). Age range (17–99) years while mean 71.7 ± 15.8 years.

Physical health was assessed via ASA score; more than half of our cohort was classified as ASA score 2 (53.9%).

Group A was defined all patients below 74 years ( $n = 271$  46%), while group B was all patients above 75 years ( $n = 317$  54%).

Gender distribution Male/female in group a 105/166, while in group B 136/181.

The co-morbidities were significantly higher in group B (Heart and Neurological related disease  $P$  value < 0.001 and 0.005 respectively).

Complication rate was no difference between the two groups: Pancreatitis in group A (2.7%) and group B (2.2%) ( $P$  value 0.329). No patient needed transfusion. 2 (0.3%) cases had perforation in group B ( $P$  value 0.12). One case died to complication related to ERCP in group B. ( $P$  value 0.223)

**Conclusions** In our study, we have shown that elderly patients carry similar risks of complication including pancreatitis, bleeding, perforation and death.

Our findings are consistent with the UK and international ERCP guidelines quality indicators.

In conclusion, ERCP is a safe procedure in elderly. However patients should be fully informed and appropriately assessed case by case from different aspects to weight the benefit from ERCP and aim to reduce the risk of developing intra- and post-operative complications.

Friday, April 24, 2020

H. pylori gastritis

15:00 – 15:30

ePoster Podium 6

### ePP208 LOW GRADE GASTRIC MUCOSA-ASSOCIATED LYMPHOID TISSUE LYMPHOMA: CLINICOPATHOLOGICAL FACTORS ASSOCIATED WITH *HELICOBACTER PYLORI* ERADICATION AND TUMOR REGRESSION

**Authors** Lee DH<sup>1</sup>, Shim HI<sup>1</sup>, Shin CM<sup>1</sup>, Yoon H<sup>1</sup>, Park YS<sup>1</sup>, Kim N<sup>1</sup>

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DOI 10.1055/s-0040-1704602

**Aims** Eradication of *Helicobacter pylori* is widely accepted as the initial therapy for low-grade gastric mucosa-associated lymphoid tissue (MALT) lymphoma. The aim of this study was to assess the remission and relapse rates of low-grade gastric MALT lymphoma after *H. pylori* eradication and to identify the clinical factors affecting remission.

**Methods** We retrospectively analyzed 151 patients diagnosed with gastric MALT lymphoma from May 2003 to December 2018.

**Results** Of the 151 patients, 112 (74.2%) had an *H. pylori* infection. Total regression rates with eradication was 90.2% (101/112) in *H. pylori*-positive patients and 55% (11/20) in *H. pylori*-negative patients. Age, sex, tumor location, endoscopic findings, and the severity of mononuclear lymphocytes were not related to achieving successful initial *H. pylori* eradication and remission. However, patients with a smaller *H. pylori* burden ( $p = 0.030$ ) and less neutrophil infiltration ( $p = 0.003$ ) were more likely to achieve a successful initial *H. pylori* eradication. *H. pylori* ( $p < 0.001$ ) and the burden ( $p = 0.020$ ) were significantly related to remission of MALT lymphoma.

**Conclusions** The results show that *H. pylori* burden and neutrophil infiltration were inversely related to the success of the initial *H. pylori* eradication procedure and that the *H. pylori* burden was inversely related to the remission of MALT lymphoma.

### ePP209 PROSPECTIVE STUDY SHOWING THE CORRELATION BETWEEN THE SEVERITY OF HP GASTRITIS AND PRE-NEOPLASTIC LESIONS IN A MOROCCAN POPULATION

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DOI 10.1055/s-0040-1704603

**Aims** *Helicobacter pylori* (Hp) is a pathogenic bacterium that contributes to an inflammatory reaction of the gastric mucosa. The extent and severity of gastric mucosal inflammation, as well as the occurrence of pre-neoplastic lesions (atrophy and intestinal metaplasia), depend on a number of factors that are related to the bacterium, host, and environmental factors. The aim of this work is to study the gastric lesions associated with Hp infection, and to determine the relationship between bacterial density and the appearance of gastric histological lesions.

**Methods** We performed a single-centric prospective study from March 2014 and March 2019. We included 406 patients who benefited from high

endoscopy and who had Hp infection documented on a histological study of gastric biopsies.

**Results** The average age of patients was 43.9 years (range, 15 to 87 years). The sex ratio (H/F) was 1.23. Chronic smoking was found in 17.9% of cases. The frequency of antritis and moderate to severe chronic funditis was 78.5% and 40.5% respectively. Moderate to severe activity was noted in 48.5% at the antrum in 21% at the fundus. The incidence of gastric atrophy and intestinal metaplasia was 12.7% and 7.2%, respectively. The density of HP was higher in the antrum than in the fundus (67.2% vs. 26.8% respectively). In univariate analysis, only antral and fundic gastritis activity was significantly associated with bacterial density (OR: 4.3, 95% CI (2.7–6.8)  $p < 0.001$ , OR: 5.9, 95% CI (3.5–9.9)  $p < 0.001$  respectively).

**Conclusions** In our study the density of *Helicobacter pylori* significantly influences the activity of gastritis. We found no correlation between bacterial density and gastric pre-neoplastic lesions. Other studies with large case series including other factors, including the genetic profile of *Helicobacter pylori*, are needed.

Friday, April 24, 2020

Keeping the lumen 3

15:00 – 15:30

ePoster Podium 7

### ePP211 ENDOSCOPIC TREATMENT FOR SIGMOID VOLVULUS: SINGLE-CENTER RETROSPECTIVE ANALYSIS

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DOI 10.1055/s-0040-1704604

**Aims** Sigmoid volvulus is one of the most common causes of colonic obstruction, caused by the rotation of the sigmoid colon around its meso axis. Diagnosis is based on clinical and radiological elements, either by X-rays or computed tomography (CT). First-line emergency therapy relies on endoscopic treatment (ET) of the volvulus, consisting in the detorsion of the affected loop, associated with colonic decompression.

**Methods** Retrospective cohort study from a single center, including patients submitted to ET of sigmoid volvulus, between January 2012 and November 2019. Primary success of ET, recurrences and need for surgery were analysed.

**Results** Included 32 patients, with mean age of 75.8 years (range 21–96). All patients presented with abdominal pain and distension. Initial ET treatment was successful in all patients, without adverse events associated to the procedure. However, recurrence occurred in 17 patients (53.1%), on average after 2.1 days. Concerning recurrences, repeat ET alone was successful in 7 patients. Surgical treatment was performed in 8 cases, with 4 patients requiring emergency surgery. Two patients had significant comorbidities and died before any attempt of retreatment.

**Conclusions** ET of sigmoid volvulus, although associated with high recurrence rate, is a safe and effective procedure for immediate treatment of a serious clinical condition.

### ePP212v LARGE IATROGENIC SIGMA PERFORATION DURING COLONOSCOPY: ENDOSCOPIC TREATMENT WITH KING CLOSURE AND OTSC

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DOI 10.1055/s-0040-1704605

A 77-year-old woman was admitted at our Hospital because of 6 cm large iatrogenic sigma perforation occurred during a diagnostic colonoscopy. Bleeding

was controlled with adrenaline injection and 'king closure' was performed. The contrastography showed a small residual wall defect that was closed with an OTSC 12 T. The patient was treated with broad-spectrum antibiotics and observed during the following days while being kept fasting. After 5 days oral feeding was resumed and on twelfth day the patient was discharged. A CT with colonic contrast injection performed on the 22th day showed a complete resolution of pneumoperitoneum, pneumomediastinum and right pneumothorax.

### ePP213V A CASE OF COMPLETE COLO-RECTAL ANASTOMOTIC OBSTRUCTION TREATED BY FULLY-COVERED METAL STENT WITH GRADUALLY INCREASED DIAMETER

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DOI 10.1055/s-0040-1704606

A 68-years old man, undergone Hartmann sigmoid resection in February 2018 underwent recanalization in July 2018. In October 2018 evidence of completely closure of the colo-rectal anastomosis with a lumen of 2 mm diameter. On December 3<sup>rd</sup> 2018 underwent placement of a pseudocyst FCSEMS 16 × 30 mm. On January 21<sup>st</sup> 2019 the FCSEMS was substitute with an enteral FCSEMS 22x30x80 mm. On March 18<sup>th</sup> 2019 the stent was substituted with a FCSEMS 24x32x100 mm. After 30 days the stent was removed and lower GI endoscopy showed the complete resolution of the stricture. The treatment with gradually increased FCSEMS diameter is a safe strategy.

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Friday, April 24, 2020  
How to use technology to  
improve quality performance?

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15:00 – 15:30  
ePoster Podium 8

### ePP214V NEW REMOTE MENTORING SYSTEM FOR TRAINING IN DIGESTIVE ENDOSCOPY. A CHANGE IN THE TRAINING PARADIGM

**Authors** Roson P<sup>1</sup>, Cano F<sup>1</sup>, Yamamoto K<sup>2</sup>, Neumann H<sup>3</sup>, Albeniz E<sup>4</sup>, de Tejada AH<sup>5</sup>

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DOI 10.1055/s-0040-1704607

We have developed a new proctoring system called 'EndoMentor' letting an expert to train someone connected online. The expert gets real time video and audio from the trainee and as relevant data, what allows total immersion in the technique. Experts watch the patient's vital signs, endoscopic real-time video (Can correct technique, hands...) the material in use and electrosurgical unit configuration. Experts can interact either speaking with the trainee or real-time painting inside the endoscopic image to guide the technique. The system allows up to 5 experts to be connected remotely, which opens up the possibility to multisession or expert meetings.

### ePP215 ARE GI CANCERS BEING DIAGNOSED FROM OUTSIDE THE 'URGENT CANCER' REFERRAL PATHWAY?

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DOI 10.1055/s-0040-1704608

**Aims** The UK lags behind Europe in the diagnosis of cancer. Patients with alarm symptoms are referred on a 'Two week wait' (2WW) urgent pathway. We aimed to study the diagnostic pathways via which GI cancers are diagnosed.

**Methods** We reviewed the common luminal upper and lower GI cancers diagnosed at endoscopy at a single centre between February 2017 and September 2018. Known malignancies were excluded (n = 72).

**Results** 332 GI cancers (oesophagus 44 (13.9%), stomach 21 (6.6%), duodenum 6 (1.9%), colon 174 (54.9%), rectum 87 (27.4%). Mean age 71.1 (range 24–97), Female 133 (42.0%).

Median time to diagnosis (i.e. referral/presentation to endoscopy) was 22 days (IQR 14 to 34).

Referral pathways included: 202 (63.7%) GP Target 2WW, 45 (14.2%) Inpatient, 30 (9.5%) Urgent 2WW from clinic/hospital discharge, 21 (6.6%) Abnormal imaging, 17 (5.4%) Routine clinic, 2 (0.6%) Surveillance.

Only 48 (15.1%) patients went 'Straight To Test' (STT) whereas 198 (62.5%) patients were seen in clinic first (153 (76%) of the GP Target 2WW group). The mean time to diagnosis in those referred via the GP Target 2WW was 25.4 days (STT) versus 32.2 days (clinic review prior), (p = 0.05).

**Conclusions** We conclude that 2 out of 3 GI cancers were diagnosed via the 2WW pathway but only one third of gastric cancers. Of all patients referred via the 2WW, three-quarters had a clinic review prior to endoscopy which resulted in a 7 day delay in cancer diagnosis compared to STT patients. We conclude that more patients with cancer are diagnosed on the 2WW pathway than previously documented and triaging patients STT speeds up diagnosis. We recommend the majority of 2WW patients be triaged STT so that earlier diagnosis of cancer may result in improved survival and reduce the gap compared to our European counterparts.

### ePP216V THE SIERRA LEONE ENDOSCOPY PROJECT, USING SOCIAL MEDIA TO ENGAGE WITH PATIENTS AND PHYSICIANS IN A RESOURCE POOR SETTING

**Authors** Catlow J<sup>1</sup>, Campbell B<sup>2</sup>, Bevan R<sup>2</sup>, Nylander D<sup>3</sup>

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DOI 10.1055/s-0040-1704609

Sierra Leone is a resource poor country in Sub-Saharan Africa. Medical services are rudimentary, with no previous adult endoscopy. Since 2016 our team of UK endoscopists and endoscopy nurses have developed a sustainable endoscopy service model in Freetown, providing training to international quality standards.

Access to mobile data and social media has increased in Sierra Leone, offering an efficient communication method to physicians, promoting our service, and patients to give information. Through our website, Facebook group and events, and development of patient information videos, we were engaged with over 160,000 people online, and developed a new route for accessing services.

Friday, April 24, 2020  
Upper GI: Endoscopic suturing

15:30 – 16:00  
ePoster Podium 1

### ePP217V USING A TRIPLE SPIKED ANCHORING DEVICE AS A TRACTION SYSTEM FOR ENDOSCOPIC SUTURING

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DOI 10.1055/s-0040-1704610

Endoscopic suturing devices using a curved needle uses a through-the-scope corkscrew to pull the tissue so that the stitch traverses the muscularis propria. This device is sometimes difficult to unscrew and can trap the suture line while unscrewing.

We used a triple-spiked anchor (TSA) as a traction device successfully in 15 procedures without major complications. The TSA felt faster. A bump could be felt using the longer model. Limitations include TSA slipping due to excessive traction, breaking the suture line due to design of distal tip and need to clean the device many times.

### ePP218V ENDOSCOPIC SLEEVE GASTROPLASTY USING THE ENDOMINA DEVICE

**Authors** Musquer N<sup>1</sup>, Coron E<sup>1</sup>, Barthelet M<sup>2</sup>

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DOI 10.1055/s-0040-1704611

Endoscopic sleeve gastropasty (ESG), is one of the promising endoscopic restrictive procedures aiming at tending towards the results of bariatric surgery while minimizing the risk of complications.

This short video presents the different steps of ESG. The patient didn't experience major complication. At 1 month, 10.7% of total weight and 37.7% excess weight were lost. At 3 months, Total weight loss and total excess weight loss were 18,6% and 65,6% respectively, accompanied by improvement of quality of life scores, glycated hemoglobin and lipid status.

ESG seems to be an efficient and safe endoscopic alternative to bariatric surgery.

### ePP219V VIDEO CASE REPORT: ENDOSCOPIC RESLEEVE GASTROPLASTY (ERSG)

**Authors** D'Alessandro A<sup>1</sup>, Zito FP<sup>1</sup>, Bertolani L<sup>2</sup>, Giglio E<sup>2</sup>, Bardi U<sup>3</sup>, Giardiello C<sup>1</sup>, Galasso G<sup>1</sup>

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DOI 10.1055/s-0040-1704612

We present a case report of C.P. (F 41ys) with weight regain (25 Kg) after sleeve gastrectomy (BMI 40,1 Kg/m<sup>2</sup>). Procedure was performed in general anaesthesia using Apollo Overstitch Suturing Device. The suture pattern was circumferencial from the distal margin of the suture-line to 2 cm under the Z-line. We used 4 not-resorbable 2.0 sutures and the time of procedure was 55 minutes. The day after, radiological study showed a filiform passage of gastrografin with sub-cardial stagnation. In our series of 10 patients (BMI: 35±3.7 Kg/m<sup>2</sup>) we registered a significant reduction of BMI (31.2±2,4 Kg/m<sup>2</sup>) without adverse events.

Friday, April 24, 2020  
Upper GI stenting

15:30 – 16:00  
ePoster Podium 2

### ePP221 ESOPHAGEAL BALLOON DILATATION AND STENTING UNDER DIRECT VISION FOR IMPASSABLE MALIGNANT STRICTURES: A SINGLE CENTRE EXPERIENCE

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DOI 10.1055/s-0040-1704613

**Aims** To evaluate the safety & efficacy of the combined technique of balloon dilatation & placement of self expandable metallic stents (SEMS) in patients with malignant impassable esophageal obstruction under direct vision.

**Methods** Balloon dilatation and SEMS were placed under direct vision without using fluoroscopic guidance in patients suffering from advanced and non-resectable esophageal cancer between November 2014 and July 2018. All procedures were performed under conscious sedation by a single operator. Patients with standard gastroscope passable esophageal obstruction were excluded. Patients' electronic records files were reviewed retrospectively to obtain data on success rate, dysphagia score (DS) improvement, stent migration rates, adverse events (AE) and mortality rates (MR) for proximal release partially covered SEMS. Patients' long-term survival was assessed using the Kaplan-Meier method.

**Results** A total 64 procedures were performed on 55 patients. SEMS were successfully deployed following 8-10mm CRE balloon dilatation in 49 patients (49/55, 89% success) without using fluoroscopic guidance. 6 (11%) procedures were unsuccessful and required repeat procedure under fluoroscopic guidance. DS improved in 46 of 49 patients (93%). The median DS decreased from 3 to 2 (P<0.0001). The overall stent migration rate was 6% (3/49) and required repeat stenting. 45/49 (91%) were discharged home the same day. No major complications or stent related deaths were reported.

**Conclusions** Oesophageal stenting can be done safely and successfully without using fluoroscopy in most cases of impassable malignant strictures following careful dilatation with a small size CRE balloon.

### ePP222 THROUGH-THE-SCOPE ESOPHAGEAL STENT FOR THE RELIEF OF MALIGNANT DYSPHAGIA: RESULTS OF A MULTICENTRIC STUDY (WITH VIDEO)

**Authors** Mangiavillano B<sup>1</sup>, Auriemma F<sup>2</sup>, Bianchetti M<sup>2</sup>, Mantovani N<sup>3</sup>, Pilati S<sup>3</sup>, Reggio D<sup>4</sup>, Barletti D<sup>5</sup>, Forcignano E<sup>5</sup>, Pentassuglia G<sup>5</sup>, Arezzo A<sup>5</sup>, Cavargini E<sup>6</sup>, Fabbri C<sup>6</sup>, De Luca L<sup>7</sup>, Conigliaro R<sup>8</sup>, Repici A<sup>9</sup>

**Institute** 1 Humanitas - Mater Domini, Gastrointestinal Endoscopy, Castellanza (VA), Italy; 2 Humanitas - Mater Domini, Castellanza (VA), Italy; 3 Hospital Poma, Mantova, Italy; 4 Hospital Poma, Castellanza (VA), Italy; 5 University of Turin, Turin, Italy; 6 Hospital of Forli, Forli, Italy; 7 Hospital of Pesaro, Pesaro, Italy; 8 Hospital of Baggiovara, Baggiovara, Italy; 9 Humanitas Clinical and Research Center and Humanitas University, Milan, Italy  
DOI 10.1055/s-0040-1704614

**Aims** Esophageal cancer is the sixth most common cancer worldwide. In presence of non-surgical candidate presenting dysphagia, the placement of a self-expandable metal stent (SEMS) represents a safe and effective palliative. There are no data in literature about the use of the new Taewoong through-the-scope (TTS) esophageal stent (ES) placed for malignant dysphagia. The aim of our study is to evaluate technical success and clinical efficacy of the new Taewoong ES-TTS esophageal stent in this group of patients.

**Methods** 40 patients (12F and 28M - mean age: 76±9.1ys) with malignant dysphagia underwent Taewoong ES-TTS, from January 1<sup>st</sup> 2017 to June 30<sup>th</sup> 2019, in six Italian endoscopic referral centers, were collected. In all of the

patients the dysphagia score was evaluated according to the Ogilvie classification.

**Results** ES-TTS stent placement was successful in 39/40 patients (97.5 %). At the time of procedure, 31 patients had an Ogilvie score of 4, and 9 patients an Ogilvie score 3. After two weeks 29 patients reported an Ogilvie score of 0, eight a score of 1. Two patients suffered stent migration after 5 days and Ogilvie score was not evaluated. 9 of the patients developed retrosternal pain requiring drugs. No patient experienced an early adverse event such perforation, bleeding or migration. A total of 7 delayed AEs occurred in 39 patients (18%). The unique AE was recurrent dysphagia. Three patients experienced recurrent dysphagia because of stent migration. Migration occurred in 3 of 15 FCSEMS after a mean of 10 days (range 5-20 days).

**Conclusions** ES-TTS placement is a feasible and safety procedure. The efficacy of the new TTS esophageal stent, in the relief of malignant dysphagia, is comparable to the standard OTW esophageal stent but adverse events seems to be reduced. Migration rate was higher for the FCSEMS.

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Friday, April 24, 2020

15:30 – 16:00

New indications new devices

ePoster Podium 3

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### ePP223 EXPERIENCE WITH ENDOROTORXT FOR ENDOSCOPIC NECROSECTOMY IN PATIENTS WITH ACUTE NECROTIC PANCREATITIS AT A TERTIARY CARE CENTER

**Authors** Soota K<sup>1</sup>, Abdelfatah MM.<sup>1</sup>, Peter S<sup>1</sup>, Wilcox C.M.<sup>1</sup>, Baig KR K.K.<sup>1</sup>, Ahmed A<sup>1</sup>

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DOI 10.1055/s-0040-1704615

**Aims** Acute necrotic pancreatitis is a devastating disease with mortality rates ranging from 26 - 86%. Recent development of a lumen apposing metal stent (LAMS) has improved endoscopic therapies but is limited by the lack of dedicated endoscopic tools. The EndoRotor XT is a novel mechanical endoscopic debridement system designed for this purpose. So far only 2 cases of pancreatic necrosis treated by EndoRotor have been described in the literature.

**Methods** A retrospective chart review of all cases of pancreatic necrosis in which EndoRotor mechanical debridement was employed. All patients underwent cystgastrostomy with placement of a 15x10mm LAMS at a prior endoscopy and presented for follow up necrosectomy. A double channel therapeutic endoscope was used for EndoRotor debridement. All patients had greater than 30% cyst wall involvement of necrosis.

**Results** Four patients, all male with an average age of 49 had a mean maximal axial cyst diameter of 151 mm and underwent an average of 1.25 (1 patient had 2 sessions) EndoRotor mechanical debridement necrosectomies. Complete cyst resolution was observed in 75% of patients (one is currently still being treated) with mean time to resolution being 84 days. Mean length of hospital stay and time to discharge after treatment was 33 and 19 days, respectively. There were no patient complications and only one technical complication of the EndoRotor getting caught on the LAMS. This was remedied by removal of the stent and the EndoRotor without any further sequelae.

**Conclusions** Evolving technologies for endoscopic debridement present opportunities to improve patient outcomes in pancreatic necrosis. None of our patients to date required additional surgical or interventional radiology procedures. One patient was managed as an outpatient, and 2 others were able to achieve early discharge. One technical complication was observed but the procedure was well tolerated by all patients.

### ePP224 DIAGNOSTIC YIELD OF MICRO-BIOPSY FORCEPS IN THE ASSESSMENT OF PERITONEAL CARCINOMATOSIS: A POSSIBLE NEW INDICATION?

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DOI 10.1055/s-0040-1704616

**Aims** Peritoneal carcinomatosis is the metastatic seeding of tumoral cells on peritoneum, and it is associated with a dramatic prognosis worsening, with limited therapeutic opportunities. Therefore, PC should be ruled out before starting any invasive treatment modality. Recently, a new through-the-needle micro-biopsy forceps have been introduced, allowing micro-histology cores. We reported the preliminary experience, assessing patients with suspicious PC.

**Methods** Before liquid suction, the Moray forceps (MF) was introduced through a 19G FNA needle, and the suspected nodule was sampled. Micro-histology specimens were evaluated by a dedicated pathologist.

**Results** Three consecutive patients (2 F, 1 M; mean age 72 yo), with a suspicion of PC, referred for EUS staging, were sampled with MF. Tissue sampling was feasible in all patients, with a technical success of 100%. The sample quality was medium-high, in all the cases, giving the opportunity for immuno-histochemical staining, when necessary. No adverse events were observed both during and after the procedure in all cases.

**Conclusions** This is the first experience reporting a micro-histology forceps in the ascites work-out to rule out PC. The technique, using this through-the-needle device, is feasible and safe, with technical success rate of 100%. It allowed to sample peritoneal irregularity, with high quality tissue fragments in all the cases, giving the opportunity for additional assessment, as immunoistochemical staining.

### ePP225V EUS-GUIDED PERCUTANEOUS ENDOSCOPIC GASTROSTOMY (PEG)

**Authors** Baile-Maxía S<sup>1</sup>, Medina L<sup>1</sup>, Mangas-Sanjuan C<sup>1</sup>, Bozhychko M<sup>1</sup>, Ruiz F<sup>1</sup>, Compañy L<sup>1</sup>, Martínez J<sup>1</sup>, Casellas JA<sup>1</sup>, Aparicio JR<sup>1</sup>

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DOI 10.1055/s-0040-1704617

We present an alternative EUS-guided PEG technique in 2 patients deemed unfit for conventional PEG due to absence of transillumination or previous gastric surgery. An EUS target was created by filling a sterile glove with saline and placing it in the abdominal wall of the patient. EUS was performed and target identified from the stomach. Abdominal wall was punctured from the stomach with a 19 G needle and a 0.025" guidewire was advanced. The guidewire was knotted to a string, which was passed into the stomach and drawn back through the mouth. The procedure was continued following the traditional technique.

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Friday, April 24, 2020

15:30 – 16:00

Do we need BIG DATA for quality assurance? ePoster Podium 4

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### ePP226 RECOGNIZING POST-ENDOSCOPY COMPLICATIONS IN IN-PATIENTS: A DATABASE FILTER REDUCES QUALITY ASSURANCE WORKLOAD

**Authors** Karatzas P<sup>1</sup>, Rösch T<sup>1</sup>, Papanikolaou I<sup>2</sup>, de Heer J<sup>1</sup>, Schachschal G<sup>1</sup>, Groth S<sup>1</sup>

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DOI 10.1055/s-0040-1704618

**Aims** Documentation of complications of GI endoscopy within the commonly used endoscopy documentation systems are mostly limited to acute complications during endoscopy included in the post-procedural endoscopy report. Later complications which are often even more relevant require individual patient follow-up creating substantial workload if taken seriously. We tested a documentation system based filter to reduce this workload by maintaining a high sensitivity to recognize post-endoscopy complications in an in-patient hospital system for interventional endoscopy

**Methods** Of all in-patient endoscopic resections during 1 year and all ERCP procedures during 4 months in one tertiary referral center, post-procedural complications during hospital stay were individually analyzed retrospectively by a careful analysis of endoscopy and hospital databases (gold standard). In comparison, IT-based filters were assessed searching for specific tests and data within 2 days after endoscopy and/or until discharge: For endoresection all cases were selected who received a second endoscopy, surgery, or an abdominal CT as well as a documented hemoglobin drop  $\geq 2$  g/dl. For ERCP cases, any case with lipase determination (not routine) and post-ERCP CT scan was selected. Main outcomes were the sensitivity of these filters (using single or combined parameters) to recognize post-endoscopy complications and the percentage of workload reduction achieved.

**Results** 322 in-patients who underwent endoscopic resections and 302 ERCP cases (all in-patients) were included. Post-endoscopy complications occurred in 7.14% (endoresection) and 3.7% (ERCP). The above mentioned filters identified 100% of all endoresection and post-ERCP complications compared to detailed case file analysis, at the same time reducing the QM workload to 14% and 31%, respectively.

**Conclusions** Post-procedural monitoring of endoscopic procedures performed on in-patient procedures has a high sensitivity (100%) and reduces case-per-case screening workload for complications by 70-85%. Out-patient interventions however require a recall system for complete monitoring of post-endoscopy complications after discharge.

### ePP227 THE TIME OF ESOPHAGOGASTRODUDENOSCOPY IN RELATION TO EXAMINATION QUALITY MEASURES

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DOI 10.1055/s-0040-1704619

**Aims** Esophagogastroduodenoscopy (EGD) is widely available endoscopy procedure that is not free from false-negative results, reaching up to 9.4% of cases in gastric cancer. Recently, two quality indicators of EGD were proposed: endoscopist biopsy rate (EBR) and composite detection rate (CDR - the sum of gastric inlet patches, gastric polyps and duodenal bulb deformations detection rates). It was also suggested that duration of EGD should not be shorter than 5 or 7 minutes or withdrawal time not less than 3 minutes. The aim of the study is to determine if proposed quality indicators reflect duration of the procedure.

**Methods** 987 patients who underwent diagnostic EGD have been enrolled in the study (01.2017 - 01.2018). EGDs were performed by six experienced endoscopists and the examination time was measured by nursing staff using the stopwatch. The EBR and CDR were recorded. The study has been performed in accordance to declaration of Helsinki in agreement with bioethics committee. Informed consent was obtained from all of the participants.

**Results** Mean examination time with and without biopsy differed significantly among operators (range 207  $\pm$ 58.1 - 358  $\pm$ 58.9 sec.;  $p < 0.000$ ; and 191  $\pm$ 54.6 - 315  $\pm$ 22.9 sec.  $p < 0.000$  respectively). Examination time correlated with CDR ( $R=0.24$ ;  $p < 0.001$ ). Mean EGD time with at least '1' of CDR differed significantly among operators (226  $\pm$ 59.6 sec. - 378  $\pm$ 80.8 sec.;  $p < 0.0001$ ). Mean EGD time during which at least one biopsy was taken ranged between operators from 248  $\pm$ 57.2 sec. to 392  $\pm$ 83.5 sec.;  $p < 0.0001$ .

**Conclusions** The examination time of EGD was moderately associated with CDR, however, it was significantly different between experienced endoscopists. It seems that it is more important to optimize and validate EBR and CDR as quality metrics of EGD instead of defining minimal limits for examination length.

### ePP228 ACCEPTABILITY OF KEY PERFORMANCE INDICATORS (KPI) IN THE NATIONAL ENDOSCOPY DATABASE (NED) AUTOMATED PERFORMANCE REPORTS TO IMPROVE QUALITY OUTCOMES TRIAL (APRIQOT), A DELPHI PROCESS

**Authors** Catlow J<sup>1</sup>, Sharp L<sup>2</sup>, Rutter M<sup>1</sup>

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DOI 10.1055/s-0040-1704620

**Aims** APRIQOT uses NED to provide endoscopists feedback on colonic detection KPI. Traditional adenoma detection rate is dependent on unavailable

► **Tab. 1** to ePP228 KPI definitions, accepted statements and consensus.

KPI	Definition	Statement Accepted	Round Consensus Reached	Agree/Neutral/Disagree
Polyp Detection Rate	Procedures where at least one polyp is detected, displayed as a percentage.	Polyp detection rate (PDR) is an acceptable detection measure in colonoscopy in the absence of a link to histological polyp data. Procedure adjusted polypectomy rate may be used to account for variables which may affect polyp detection, such as the procedure indication and patient demographics.	2	95%/0%/5%
Mean Number Polyps	Number of polyps detected, displayed as a rate per 100 colonoscopies.	Using mean number of polyps (MNP) detected is an acceptable detection measure in colonoscopy. Procedure adjusted polypectomy rate may be used to account	3	81%/14%/5%

(Continued).

KPI	Definition	Statement Accepted	Round Consensus Reached	Agree/Neutral/Disagree
		for variables which may affect polyp detection, such as the procedure indication and patient demographics.		
Proximal Polypectomy Rate	Procedure where at least one polyp is removed proximal to the splenic flexure.	Proximal polypectomy rate (PPR) is an acceptable secondary measure to the primary KPI. Procedure adjusted polypectomy rate may be used to account for variables which may affect polyp detection, such as the procedure indication and patient demographics.	3	86%/9%/5%

histological data. Our aim was to gain expert consensus on which available KPI are acceptable to endoscopists.

**Methods** A Delphi panel of UK expert endoscopists was recruited online, purposively sampling to match clinical background to census data.

Panelists interacted using an online form. In round one we provided a summary and acceptability statement for each KPI, participants rated agreement with a five-point Likert scale and free-text comments. Responses were analysed anonymously. In subsequent rounds participants reviewed all graded consensus statements and comments. Statements were accepted with  $\geq 80\%$  consensus (Agree and Strongly Agree) or redrafted. HRA ethical approval was granted within APRIQOT. Rounds ran January to April 2019.

#### Results

We recruited 21 UK expert endoscopists. Twelve were female, 48% gastroenterology background, 29% nursing, 14% surgical and 9% trainees. All statements reached consensus after three rounds.

The panel agreed that each KPI may be adjusted for polyp associated 'case mix' variables, such as indication, making KPI 'more acceptable'. Benefits of encompassing non-adenomatous polyps were highlighted versus 'gaming' and distal hyperplastic polyp over-reporting.

Mean number of polyps (MNP) reached consensus after discussing reduction of the 'one and done' phenomenon and using a cap of five polyps/colon to mitigate skew from polyposis.

Proximal polypectomy rate (PPR) was accepted as a secondary 'tool to improve right sided ... detection' and could reduce 'gaming', despite concerns around contraindications to polypectomy and endoscopists polypectomy skills.

**Conclusions** All adjusted KPI were accepted, MNP was selected for trial with robust data to model case-mix.

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DOI 10.1055/s-0040-1704621

**Aims** Capsule Endoscopy (CE) is a first-line diagnostic test in patients with suspected small bowel bleeding (SSBB). Since CE reading is time-consuming, innovative types of reading software have been developed. The new generation reading algorithm 'Express-View' (EV) by MiroCam aims to reduce CE reading time by removing images based upon their similarity, without affecting the diagnostic yield.

Primary aim: evaluation of EV accuracy in patients with SSBB.

Secondary aim: evaluation of the reading time with the EV compared to Standard Reading (SR).

**Methods** This interim analysis included 48 pts with SSBB prospectively enrolled to undergo small bowel-CE. SR was initially performed according to the ESGE guidelines.

A second reading was performed using the EV mode by an external, blinded reader. Visualization time, nature, and relevance of lesions were collected.

EV accuracy was calculated before and after a consensus performed by two experienced investigators to re-classify discordant cases. Reading time was also evaluated.

**Results** 47/48 patients performed a complete VCE examination. Cecal visualization was achieved in 43 pts (91.5%).

In 33/47 pts (70.2%) both SR and EV were in agreement for type of lesion and localization, while in the remaining 14 pts (29.8%) SR and EV had different results. After consensus, in 12/14 cases EV was reclassified to properly detect the lesion, being the previous disagreement considered related to a reader-misinterpretation. In the remaining 2 pts (4.2%), EV mode missed relevant lesions.

Pre-consensus and post-consensus accuracy parameters are shown in the table.

Mean reading time at SR and EV was  $84.13 \pm 53.63$  min and  $14.79 \pm 11.2$  min, respectively ( $p < 0.001$ ).

Friday, April 24, 2020

15:30 – 16:00

Capsule 3

ePoster Podium 5

## ePP229 THE NEW GENERATION OF EXPRESS VIEW IS HIGHLY ACCURATE AND IS EFFECTIVE TO REDUCE CAPSULE ENDOSCOPY READING TIME

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► **Tab. 1** Diagnostic accuracy of Express View compared to Standard Reading

(values in %)	Sensitivity	Specificity	PPV	NPV
Pre-consensus	71.9	66.7	82.1	52.6
Post-consensus	94.6	100	100	83.3

**Conclusions** Preliminary results suggest that EV algorithm shows excellent accuracy and significantly reduces CE reading time.

### ePP230 SMALL BOWEL CAPSULE ENDOSCOPY: THERAPEUTIC IMPACT AND RESEARCH FOR PREDICTIVE FACTORS OF THERAPEUTIC YIELD IN IRON DEFICIENCY ANEMIA WITH OR WITHOUT OVERT DIGESTIVE BLEEDING

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**DOI** 10.1055/s-0040-1704622

**Aims** Iron deficiency is the main cause of anemia. The recommendations provide for a small bowel capsule endoscopy (SBCE) in case of obscure gastrointestinal bleeding (OGIB) with or without exteriorization after complete endoscopic assessment. The diagnostic yield is currently well defined in contrast to the therapeutic impact.

The aim is to determine the therapeutic impact of SBCE in context of OGIB and research for factors leading to a therapeutic act.

**Methods** Monocentric retrospective study conducted from September 2017 to May 2019. 337 patients were included. Demographic characteristics, previous endoscopic and SBCE results; therapeutic acts, recurrence after SBCE were evaluated.

**Results** Three hundred and thirty seven patients of mean age 64.7 years old were studied, 203 occult digestive bleeding and 134 with digestive exteriorization. Lesions were objectified to 169 patients whether 50,1% (IC95%:44,8%;55,5%). An aimed at therapeutic treatment is performed in the case of positive SBCE for 119/169 patients, either an impact of 70,4% (IC95% 63,1-76,8%). Taking into account the entire population made it possible to obtain an impact of 35.3% with IC [30.21; 40.41]. Medical management for 21 patients (12.4%), an endoscopic procedure for 90 patients either 53.3% of which 55 with haemostasis procedure, or 8 surgical managements (4.7%). The factors motivating an aimed at therapeutic treatment are the type of lesion, mostly angiodysplasia P2 (p=0.001) and exteriorization (p=0.012). These angiodysplasia P2 are lesions at risk of recurrence in the medium term (p< 0.001).

**Conclusions** The SBCE has a significant therapeutic impact in case of a positive diagnosis in the context of OGIB to target management based on the detected lesion.

### ePP231 SMALL BOWEL CAPSULE ENDOSCOPY IS A VALUABLE DIAGNOSTIC TOOL IN ISOLATED TERMINAL ILEITIS

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**DOI** 10.1055/S-0040-1704623

**Aims** Terminal ileitis (TI), is a common condition in clinical practice and may be associated with a wide variety of diseases. Small bowel capsule endoscopy (SBCE) is a valuable diagnostic tool for small bowel diseases, however data regarding its diagnostic impact on isolated TI is sparse.

**Aim** To evaluate the diagnostic value of SBCE for TI detected during ileocolonoscopy.

**Methods** Retrospective study including consecutive patients undergoing SBCE after diagnosis of TI without colonic mucosal abnormalities on ileocolonoscopy between January 2016 and September 2019. Demographic, clinical, biochemical, endoscopic and imaging data were collected.

**Results** One hundred and two patients with isolated TI on ileocolonoscopy were included. Positive findings on SBCE were found in 84(82.4%) patients, being ulcers the most common finding (76.5%). Endoscopic abnormalities proximal to terminal ileum were found in 36.3% of patients. After SBCE, 63.7% of patients had a final diagnosis, Crohn's disease (CD) was the most common (34.3%), followed by NSAIDs enteropathy (12.7%). Elevated fecal calprotectin (p=0.001) was independently associated with positive SBCE findings. There was a tendency for high levels of erythrocyte sedimentation rate be associated with positive findings (p=0.07). However, the presence of symptoms, imaging abnormalities and other laboratory findings such as leukocytosis, anemia, and elevated C-reactive protein were not predictors of positive SBCE findings. At multivariate analysis, only elevated fecal calprotectin (OR6.0, IC 95%1.9-18.7;p=0.002) was a significant predictive factor for positive SBCE findings.

**Conclusions** SBCE revealed a high diagnostic yield in patients with isolated ileitis on ileocolonoscopy enabling a definite diagnosis in almost two thirds of patients. Approximately one-third of patients had findings proximal to terminal ileum and a similar percentage was diagnosed with CD. In patients with isolated ileitis on ileocolonoscopy, SBCE should be considered to evaluate small bowel lesions, particularly when there is an elevated fecal calprotectin, even when other clinical, imagiological or laboratorial abnormalities are absent.

Friday, April 24, 2020

Obesity treatment

15:30 – 16:00

ePoster Podium 6

### ePP232 FECAL MICROBIOTA TRANSPLANTATION FOR METABOLIC SYNDROME AND OBESITY: A SYTEMATIC REVIEW AND META-ANALYSIS BASED ON RANDOMIZED CLINICAL TRIALS

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**DOI** 10.1055/s-0040-1704624

**Aims** Obesity and metabolic syndrome are important health problems worldwide and they are related to development of atherosclerotic cardiovascular disease and non-alcoholic fatty liver disease (NAFLD) and consequently to their respective complications and morbidity/mortality. Gut microbiota has been related to many diseases including obesity and metabolic syndrome. Therapeutic approaches targeting dysbiosis and manipulation of gut microbiome have been recently developed such as prebiotics, probiotics, symbiotics, antibiotics and Fecal Microbiota Transplantation (FMT). This study aims to verify what is the role of FMT for obesity and metabolic syndrome.

**Methods** We searched MEDLINE, EMBASE, Central Cochrane, LILACS databases, as well as the gray literature, to identify RCTs comparing FMT vs placebo for metabolic syndrome/obese patients. We considered intervention FMT from lean donors by any route. We considered placebo either sham, saline, autologous FMT and placebo capsules.

**Results** A total of 14,893 records were identified. Five RCT were included for final analysis with a total of 130 patients. Two to six weeks after intervention, mean HbA1c was lower in FMT group (MD=-1,96 mmol/mol, CI [-3,17, -0,75], p=0,002), mean HOMA-IR was lower in FMT group (MD = -1,12, CI [-1,54, -0,7], p< 0,00001), mean HDL cholesterol was higher in FMT group (MD=0,08 mmol/l, CI [0,02, 0,15], p=0,01) and mean LDL cholesterol was lower in placebo group (MD=0,21 mmol/l, CI [0,06, 0,35], p=0,005). Mean fasting glucose, total cholesterol, triglycerides, weight and BMI did not differ between the two groups 2 to 6 weeks after intervention. There was no difference in weight loss, BMI reduction nor hip circumference reduction 12 weeks after intervention. No severe adverse event was reported.

**Conclusions** FMT is safe short term and may have a role for metabolic syndrome patients as adjuvant therapy, but there is not enough evidence to support its use in clinical practice. FMT did not show better results than placebo for obesity.

## ePP233 SHORT-TERM WEIGHT LOSS OF THE ENDOSCOPIC SLEEVE GASTROPLASTY FOR PRIMARY OBESITY

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**DOI** 10.1055/s-0040-1704625

**Aims** Endoscopic sleeve gastroplasty (ESG) with the Apollo Overstitch System (AOS) has been positioned as one of the reference treatments among endoscopic bariatric therapies. Our aim was to analyse its efficacy in our first 29 patients who reached at least 6 months of a multidisciplinary follow up schedule

**Methods: Outcomes** Evaluation of total body weight loss percentage (TBWL%) and final weight loss and BMI in 29 obese patients submitted to ESG performed by the same endoscopist (AJPG) who reached at least 6 months of follow up.

All patients signed the informed consent and were performed under antibiotic prophylaxis, CO<sub>2</sub> insufflation and general anesthesia in an inpatient basis. All procedures were done using the Apollo overstitch system attached to a double channel Olympus gastroscope after endoscopically ruling out contraindications.

**Results** A total number of 29 patients (24F) completed the 6 month schedule, with 11 nutritional counseling visits. Mean age 39.7 years old; initial mean BMI 35.3 kg/m<sup>2</sup>. 93.5% were discharged within the first 24 hours of admission.

TBWL% at 1, 3, 6 m = 9.3%, 16.1% and 20.3%, respectively

Final BMI = 28.0 kg/m<sup>2</sup>

### Conclusions

1. ESG showed a remarkable short-term efficacy in the first 29 cases of our series who completed the follow up, with a 6-months mean BMI decrease of 7.3 kg/m<sup>2</sup> and a TBWL% of 20.3%
2. While awaiting for longer follow up results, ESG seems a good alternative therapy for the treatment of obesity, even at the begin of the learning curve
3. Randomized controlled trials might help to confirm these promising results

## ePP234 USE OF INTRAGASTRIC BALLOON FOR OBESITY TREATMENT: SINGLE-CENTER EXPERIENCE

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**DOI** 10.1055/s-0040-1704626

**Aims** Obesity is a public health problem associated with high morbidity and mortality. New endoscopic therapies have emerged in recent years, with intragastric balloon (BIG) being the most popular option.

**Methods** Retrospective analysis of BIG placement in a single center between 2010 and 2018. Demographic, clinical, pre- and post-BIG weight and associated adverse events (AE) were evaluated, comparing super obese patients (BMI ≥50 kg/m<sup>2</sup>) vs non-super obese (BMI < 50 kg/m<sup>2</sup>) patients.

**Results** Included 89 patients, 67 females, with mean age of 45.8 ± 12.5 years. Super obese patients (n=54) had average weight and BMI scores of 154.3±21.3 kg and 57.7±5.6 kg/m<sup>2</sup>, respectively. Average weight effects of BIG were: body weight loss (BWL) 19kg, excess weight loss (EWL) 19kg, BMI loss 7.1kg/m<sup>2</sup>, % of body weight loss (%BWL) 12.4, and % of EWL (%EWL) 22.1. Mean length of stay of BIG was 226.1 ± 65.9 days.

Non-super obese patients (n=35) had average weight and BMI scores of 110.2 ±21.3kg and 40.2±6.7 kg/m<sup>2</sup>, respectively. Average weight effects of BIG were: BWL 14.6kg, EWL 14.6kg, BMI loss 5.7kg/m<sup>2</sup>, %BWL 13.4, %EWL 41.2. Mean length of stay of BIG was 216.1± 52.8days.

AE occurred in 6 super obese patients, mostly vomiting, requiring early BIG removal in 1 patient. In the non super-obese group, AE occurred in 9 cases, requiring early BIG removal in 2 patients.

**Conclusions** BIG placement is a valid therapeutic option for various degrees of obesity, allowing significant weight loss with few associated adverse effects.

Friday, April 24, 2020

15:30 – 16:00

CRC Screening 1

ePoster Podium 7

## ePP235 CLINICAL AND ENDOSCOPIC DIFFERENCES BETWEEN SESSILE SERRATED ADENOMA/POLYP WITH OR WITHOUT CYTOLOGIC DYSPLASIA AND HYPERPLASTIC POLYP

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**DOI** 10.1055/s-0040-1704627

**Aims** Sessile serrated adenoma/polyps (SSAPs) are known to develop cancer by the serrated neoplasia pathway. Endoscopic features of SSAPs are well presented in NICE and WASP classification, but SSAPs are often difficult to distinguish hyperplastic polyp (HP) and predict the accompanying dysplasia. We aimed to evaluate the clinical and endoscopic differences between SSAPs with or without cytologic dysplasia and HP.

**Methods** Among patients underwent endoscopic resection from January 2015 to June 2018 in PNUYH, patients with HP or SSAP (≥10 mm size) were enrolled. We retrospectively evaluated clinical and endoscopic, pathologic features in these patients.

**Results** A total of 175 polyps were assessed in 129 patients (116 HPs and 59 SSAPs). Concordance between endoscopic and pathologic diagnosis of SSAPs was 33.7% (59/175). SSAPs showed a significant difference in size (p< 0.0001), shape (p< 0.0001), diffuse nodular surface

(p< 0.012), focal nodular elevation (p< 0.023), depression (p< 0.012), ≥2 WASP criteria (p< 0.001), NICE type

(p< 0.002), Kudo pit pattern (p< 0.0001) compared to HPs. Thirty of 59 SSAPs (50.9%) had cytologic dysplasia at histopathology (21 low-grades, 8 high-

grades, 1 carcinoma in situ). SSA/P with dysplasia was significantly different in age (p< 0.0001), size (p< 0.0001), NICE type (p< 0.0001) and Kudo pit pattern

(p< 0.0001), but not location, morphology, surface patterns and ≥2 WASP criteria compared to SSAP without cytologic dysplasia. In multivariate analysis,

dysplasia was significantly associated with age (OR 1.123, p< 0.005) and size (OR 1.188, p< 0.008), shape

(OR 0.138, p< 0.05).

**Conclusions** Endoscopic diagnosis for SSAPs showed low accuracy. Dysplasia in SSAPs was frequently combined, especially old age and large size. Therefore, comprehensive endoscopic evaluation in case of suspected SSAPs is necessary and SSAPs with findings related with dysplasia should be completely resected.

## ePP236 POTENTIAL IMPACT OF THE PROPOSED BSG/ACPGBI/PHE POST-POLYPECTOMY AND POST-COLORECTAL CANCER RESECTION SURVEILLANCE GUIDELINES AT AN IRISH BOWELSCREEN CENTRE

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DOI 10.1055/s-0040-1704628

**Aims** The Irish BowelScreen program was instituted in 2012 as a cost-effective colorectal cancer surveillance programme. As the programme expands, surveillance procedures are also an expanding role of the programme in the setting of limited resources. Recent consensus guidelines were jointly commissioned by the British Society of Gastroenterology, the Association of Coloproctology of Great Britain and Ireland and Public Health England (BSG/ACPGBI/PHE) which take into consideration colorectal bowel screening data. We set out to investigate the potential impact of these guidelines if implemented at an experienced BowelScreen centre.

**Methods** We performed a retrospective analysis of patients discussed at the local BowelScreen histopathology multidisciplinary meetings (MDM) at the Mater Misericordiae University Hospital. Patients discussed at consecutive ten consecutive MDMs in 2019 were included in the analysis. Exclusion criteria included incomplete colonoscopy, incomplete polyp resection, endoscopic mucosal resection and patients discharged from BowelScreen were excluded from the analysis. MDM outcomes were analysed and a secondary outcome was retrospectively assigned using the colonoscopy and pathology reports discussed using the proposed guidelines.

**Results** Among the patient cohort, 124 received an outcome of Intermediate or High risk under current practice. One-year colonoscopy was recommended for 36 patients (high risk), with a three-year colonoscopy was recommended for the remaining 88 patients. The average time to surveillance was 2.4 years. Overall, under the proposed guidelines, 48% of patients who are currently classified as intermediate or high risk could potentially be de-escalated to low risk and avoid colonoscopy surveillance. Of those undergoing surveillance colonoscopy, the proposed time to endoscopy could be extended to an average of 3 years.

**Conclusions** The proposed BSG/ACPGBI/PHE guidelines place more emphasis on the clearance of pre-malignant lesions and prioritises surveillance to patients who remain at high risk following clearance. Implementing these guidelines in the BowelScreen programme has the potential for significant reduction in surveillance procedures.

## ePP237 LYNCH SYNDROME CASCADE TESTING; REFERRAL PATTERNS AND TESTING OF FIRST-DEGREE RELATIVES IN A FAMILY SCREENING CLINIC

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DOI 10.1055/s-0040-1704629

**Aims** To examine genetic testing/referral patterns in the first-degree relatives (FDRs) of Lynch Syndrome (LS) patients and assess if all high-risk patients are being captured.

**Methods** We examined the pedigrees of all LS patients to determine the number of FDRs referred, tested through the clinic, tested elsewhere, not tested or refused testing.

**Results** Lynch Syndrome is one of the commonest major genetic conditions worldwide and the commonest known genetic cause of colorectal cancer (CRC). Approximately 15,000 people in Ireland have LS, with 100 CRCs/year diagnosed. It is estimated 95% of people with LS are unaware they have it. As an autosomal dominant condition, 50% of patients' first-degree relatives are at

risk of inheritance. It is important that family members are offered appropriate screening and surveillance.

Number of LS patients included= 92. Number of distinct pedigrees= 32. Number of FDRs= 670. Mean number of FDRs per Patient: 7.28 (Range 2-17). Total number of FDRs referred to clinic: 265 (39.6% of total FDRs). Genetic tests of the FDRs referred (not including tested elsewhere); total=228, Gene + 169, Gene - 59. FDRs referred but not tested 27. Refused testing= 15.

**Conclusions** This study shows that over 60% of FDRs are not being referred on to clinic for further assessment. Although a proportion of these may be assessed elsewhere, it is likely that many are unaware of their risk. Strategies to increase public awareness will increase early detection of these cancers. A national database would support appropriate/efficient management of individuals at risk and optimise cascade testing.

Friday, April 24, 2020

15:30 – 16:00

Endoscopic management of perforation and defects

ePoster Podium 8

## ePP238V THE USE OF NOVEL MODIFIED ENDOSCOPIC VACUUM THERAPIES IN THE MANAGEMENT OF A TRANSMURAL RECTAL WALL DEFECT

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DOI 10.1055/s-0040-1704630

Endoscopic vacuum therapy(EVT) has become a safe and effective tool for intraluminal treatment of transmural gastrointestinal defects. A 29-year-old woman with familial adenomatous polyposis, status-post proctocolectomy two years prior, presented with daily fevers and rectal pain. CT scan demonstrated a leak at the ileorectal anastomosis. An end-ileostomy was performed, but there was ongoing concern for persistent leak. EVT was considered. The patient was successfully treated with a modified EVT system and was discharged from the hospital 28-days after the initial procedure. These novel cost-effective modified EVTs are feasible and appear to be as safe and effective as the traditional EVT.

## ePP239 GASTROINTESTINAL EXPOSED ENDOSCOPIC FULL-THICKNESS RESECTION (EO-EFTR) IN THE TIME OF ENDOSCOPIC SUTURING: A NEW START FOR NATURAL ORIFICE TRANS-LUMINAL ENDOSCOPIC SURGERY (NOTES) TECHNIQUES

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DOI 10.1055/s-0040-1704631

**Aims** Eo-EFTR without laparoscopic assistance is a minimally invasive NOTES technique that has shown promising efficacy and safety in the removal of gastrointestinal (GI) submucosal tumors (SMTs) arising from the muscularis propria (MP) and select epithelial tumors (ETs) unsuitable to conventional resection techniques. Wall defect closure was mainly achieved using standard through-the-scope endoclips or endoclips combined with endoloops. Given the chance of realizing an endosurgical full-thickness sutures, the OverStitch Endoscopic Suturing System (ESS) (Apollo Endosurgery, Austin, Texas, USA) can be used to

close wall defects with potentially higher safety and effectiveness. However, data are still limited. The aim of this study was to evaluate the efficacy, safety and feasibility of Eo-EFTR with defect closure by ESS for these lesions.

**Methods** This was a retrospective, observational cohort study of patients undergoing GI Eo-EFTR without laparoscopic assistance at a single tertiary-referral center.

**Results** Seven patients (M:F 6:1, age 56±14.5 years) were identified. Indications were: SMTs originating from MP of the stomach (n=2), duodenum (n=2), rectal submucosa (n=1), and rectal ETs (n=2). Mean lesion size was 25±9.9 mm (mean procedure time 164±41 minutes). Eo-EFTR were successfully performed in 6/7 patients. Defect closure with ESS was effective in all cases (6/6 patients). One case was converted into laparoscopic gastric wedge resection because technical unfeasibility. Histopathological examination showed neuroendocrine tumors (n=2), gastrointestinal stromal tumors (n=1), pancreatic heterotopia (n=2), adenoma (n=1) and invasive carcinoma (n=1). We observed a R0 resection in all cases for the exception of one ETs (previously treated by polypectomy) with invasive carcinoma. No major adverse events were observed. Post-procedure hospitalization stay was 4±1.3 days. No macroscopic recurrence was detected at 1-month endoscopic follow-up.

**Conclusions** GI Eo-EFTR with defect closure by ESS appears to be feasible, effective and safe in referral centres. Further studies are necessary to clarify the role of ESS for post-EFTR wall defect closure.

### ePP240 VACUUM THERAPY WITH ENDOLUMINAL SPONGE: TREATMENT OF UPPER GASTROINTESTINAL TRACT PERFORATIONS AND LEAKS. WHAT ARE THE BEST INDICATIONS?

**Authors** Bichard P<sup>1</sup>, Bastid C<sup>1</sup>, Drepper M<sup>2</sup>, Mönig S<sup>3</sup>, Frossard JL<sup>1</sup>

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DOI 10.1055/s-0040-1704632

**Aims** Perforations (spontaneous or iatrogenic) and anastomotic leakage of gastrointestinal tract are medico-surgical emergencies responsible for high morbidity and mortality. Endoluminal sponge vacuum therapy (EVT) is an established treatment for their management. We report here our experience.

**Methods** This single-center observational study was conducted from November 2016 to May 2019, we included all patients with upper GI tract perforation. A polyurethane sponge was endoscopically placed either in the perforated cavity lumen or endoluminal for perforations less than 1 cm in diameter. The sponge was attached to a nasally externalized drain with a continuous aspiration. The sponge was changed every 3-4 days. The primary endpoint was defined by the complete closure of the perforation (clinical success). Secondary outcomes were technical success, number of sponge changes, 3 months morbidity and mortality and length of hospital stay.

**Results** Ten patients were included (7 Men), mean age 55.2 y (22-75 y). Perforation was secondary to Boerhaave syndrome (n = 4), bariatric surgery (n = 2), anti-reflux surgery (n = 1), perforated duodenal ulcer (n = 1), cervical chronic fistula (n = 1), major oncological surgery (n = 1). Technical success rate was 100%. Clinical success rate was 60%: after an average 12.6 days treatment (11- 44 days). In esophageal perforations and eso-gastric anastomotic leaks, clinical success rate was 87.5%. The sponge was changed on average 4.5 times (2-10 times). Surgical treatment was required in 4 patients: 3 septic shocks and one failure after 3 sponge changes. No severe complication nor death were reported. The mean hospitalization length was 69.8 days (22-245 days).

**Conclusions** EVT appears as a safe endoscopic technique for management of perforations and anastomotic leakage of the upper gastrointestinal tract. It was effective in 2/3 of patients. EVT should be discussed in extended

indications. It should be proposed as first-line treatment in esogastric anastomotic perforations or leakages.

Saturday, April 25, 2020

09:30 – 10:00

Upper GI: Resection techniques 6

ePoster Podium 1

### ePP241 DUODENAL UNDERWATER ENDOSCOPIC MUCOSAL RESECTION IS SAFE AND EFFECTIVE FOR REMOVAL OF NON AMPULLARY DUODENAL TUMORS

**Authors** Kang D<sup>1</sup>, Kim S<sup>1</sup>, Kim HW<sup>1</sup>, Park S<sup>1</sup>, Lee JW<sup>1</sup>

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DOI 10.1055/s-0040-1704633

**Aims** Conventional endoscopic mucosal resection (EMR) and endoscopic submucosal dissection have been reported to be an effective therapeutic option in sporadic non ampullary duodenal tumors, but the rate of perforation is higher than that of other gastrointestinal lesion. A retrograde cohort study to investigate the effectiveness of underwater EMR (UW-EMR) was conducted in patients with nonampullary duodenal tumors.

**Methods** From Aug 2018 to Aug 2019, after medical chart and endoscopic report review, a total of 8 duodenal tumors were resected by UW-EMR. Location, size, pathology, complete resection rate, incidence of complications, length of procedures time and follow up months were evaluated. To evaluate local recurrence at the resection site, periodic follow-up endoscopic examination was undertaken in all of the patients. The first endoscopic examination was performed about 3~4 months after the endoscopic resection.

**Results** The mean age was 48.4 ± 9.36 years. The mean specimen size was 9.13 ± 4.53 mm. The 6 of 8 lesions were located in 2<sup>nd</sup> portion (75%), and 2 lesions in bulb (25%). In all patients, en-bloc resection was achieved. Histologic assessments of the removed specimens revealed as 6 adenomas(75%) and 2 NET (25%). 5 of 6 adenomas revealed as low grade dysplasia and another was high grade dysplasia. In one NET case, vertical margin was positive. No recurrence was observed during the mean follow up period of 3.7 ± 0.47 months. The mean procedural time was 6.44 ± 3.39 min. In all patients, no evidence of complication such as perforation or bleeding occurred.

**Conclusions** UW- EMR be considered safe and effective for the treatment of lesions located in duodenum.

### ePP243V DUODENAL FOLLICULAR LYMPHOMA ENDOSCOPIC SUBMUCOSAL RESECTION WITH BAND LIGATION

**Authors** Miguel I<sup>1</sup>, Pijoan E<sup>1</sup>, Puñal L<sup>2</sup>, Vargas A<sup>2</sup>, Torres G<sup>1</sup>, Alburquerque M<sup>2</sup>, Torres N<sup>1</sup>, Guerrero L<sup>1</sup>, Planella M<sup>1</sup>, Gonzalez-Huix F<sup>1,2</sup>

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DOI 10.1055/s-0040-1704634

69-year-old man who underwent gastroscopy for dyspepsia that founded a 1cm granular lesion in second duodenal portion, next to papilla. Biopsies diagnosed a low-grade follicular lymphoma. Extension study was performed which did not find local or distant spread. After assessment with haematology and general surgery, it was decided to perform an endoscopic submucosal resection with band ligation (Captivator system). In bloc resection was not possible, that's why we performed a piece-meal resection in 2 pieces. Previously, the lesion extend was marked-off with argon and submucosal infiltration was performed with glycerol-indigocarmin. 2 years follow-up, the patient is still in complete remission.

Saturday, April 25, 2020  
 ERCP: Malignant strictures

09:30 – 10:00  
 ePoster Podium 2

### ePP244 ELABORATION OF A PROGNOSTIC SCORE IN PATIENTS WITH MALIGNANT BILIARY OBSTRUCTION

**Authors** d'Aubigny AD<sup>1</sup>, Noel C<sup>1</sup>, Cariou M<sup>1</sup>, Cholet F<sup>1</sup>, Jezequel J<sup>1</sup>, Risson J-R<sup>1</sup>, Nonent M<sup>1</sup>, Hébert T<sup>1</sup>, Robaszekiewicz M<sup>1</sup>, Nousbaum J-B<sup>1</sup>

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DOI 10.1055/s-0040-1704635

**Aims** Endoscopic biliary drainage (EBD) and percutaneous transhepatic biliary drainage (PTBD) are the two minimally invasive procedures for inoperable malignant biliary obstruction. The medium-term survival of these patients after drainage is poorly documented in the literature. The goals of this study were: (a) to determine the clinical and biological factors associated with survival; and (b) to establish a prognostic score.

**Methods** All patients who had biliary drainage between April 1, 2014 and August 31, 2018 for inoperable malignant biliary obstruction were included. Clinical and biological baseline data were recorded retrospectively. The continuous variables of biological tests were analyzed by ROC curves. The survival curves were estimated using the Kaplan-Meier method and compared using the log-rank test.

**Results** 262 patients were included with a mean age of 73 years. Biliary tract obstruction was due to primary cancer in 203 patients (77.5%) and metastases in 59 patients (22.5%). 373 procedures were performed with an average of 1.23 procedures per patient: 244 EBD, 127 PTBD and 2 combined procedures. Intra-hospital morbidity was 18.2%. The overall complication rate was no different between EBD and PTBD. The median survival rate was 4.8 months and 30-day mortality was 14%. Six variables were independently associated with poor prognosis: performans status, metastatic obstruction, liver metastases, weight loss > 5% in the last three months, albumin ≤ 24g/L, total bilirubin ≥ 186μmol/L. A prognostic score was calculated from these six variables. The median survival time was 7.5 months when the score was ≤ 2 and 2.5 months when it was > 2 (p < 0.001).

**Conclusions** A prognostic score was established on the basis of six variables and it was associated with poor survival when the score > 2. It may be useful in multidisciplinary meetings to make a decision based on the expected benefits and the risks inherent to the biliary drainage.

### ePP245 NUMBER OF STENTS PREDICTS THE RISK OF ACUTE PANCREATITIS AND EARLY COMPLICATIONS IN HILAR BILIARY DRAINAGE: SUGGESTIONS FROM A LARGE SINGLE CENTER STUDY

**Authors** Mezzina N<sup>1,2</sup>, Caillol F<sup>2</sup>, Ratone JP<sup>2</sup>, Pesenti C<sup>2</sup>, Dell'Era A<sup>1</sup>, Winckler J<sup>2</sup>, Giovannini M<sup>2</sup>

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DOI 10.1055/s-0040-1704636

**Aims** In case of malignant hilar biliary stenosis, endoscopic retrograde cholangiography (ERCP), percutaneous-biliary drainage (PTBD) and endoscopic ultrasound biliary drainage (EUS-BD), can ensure a good biliary drainage, which is crucial for survival. The aim of this study was to evaluate the complications risk factors of these drainages.

**Methods** Retrospective study from a prospective registry of malignant biliary stenosis drained in a single center. The primary outcome was the postoperative complication rate during the first month after drainage, with a focus on acute pancreatitis.

**Results** 198 patients (121 males, mean age 69 years) with malignant hilar stenosis due to CCK (42%), metastatic colon cancer (24%), pancreatic cancer

(10%), other (24%) were included. Hilar stenosis was type II in 48 pts, IIIA in 32, IIIB in 9, IV in 109. The characteristics of endoscopic procedures are summarized in table 1. Postoperative complications occurred in 87 pts (44%), with pancreatitis in 21 pts (11%), cholangitis in 29 (15%) sepsis and bleeding in 11 (6%). At univariate logistic regression, stent number (1-2 vs ≥3 stents) was predictor of both overall early complication (39% vs 60%; OR 2.42 95% CI 1.25-4.71 p=0.009) and pancreatitis (8% vs 19%; OR 2.65, 95% CI 1.04-6.77, p=0.04).

► **Tab. 1** Characteristics of endoscopic procedures

Type of drainage, n (%)	ERCP: 128 (65%), PTBD: 6 (3%), EUS: 8 (4%), ERCP+PTBD: 24 (12%), ERCP+EUS: 18 (9%), PTBD+EUS: 6 (3%), ERCP+EUS+PTBD: 8 (4%)
Number of stent placed, n (%)	1: 52 (26%), 2: 98 (49%), 3: 36 (18%), 4: 11 (6%), 5: 1(1%)
Endoscopic sessions required, n (%)	1: 82%, 2:16%, 3:2%
Type of stent, n (%)	Plastic: 40 (20%); Metallic: 158 (80%); External drain: 32 (16%)

**Conclusions** In complex hilar biliary drainage, placing three or more stents seems to increase the risk of pancreatitis and overall postoperative complications.

### ePP246V ENDOSCOPIC RADIOFREQUENCY ABLATION FOR PALLIATIVE TREATMENT OF HILAR CHOLANGIOCARCINOMA

**Authors** Santos AL<sup>1</sup>, Vilas-Boas F<sup>1</sup>, Morais R<sup>1</sup>, Pereira P<sup>1</sup>, Macedo G<sup>1</sup>

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DOI 10.1055/s-0040-1704637

Endoscopic radiofrequency ablation (RFA) can be an option, in unresectable perihilar cholangiocarcinoma (PC), for preventing stent occlusion and increasing overall survival.

A 72-year-old-man was diagnosed with PC. Brush cytology obtained in the initial ERCP confirmed malignancy. Cholangioscopy showed a Bismuth type-I tumor but the patient was considered inoperable due to comorbidities and vascular involvement. Due to progressive worsening of jaundice, ERCP was repeated and RFA (HabibEndoHPB catheter, Boston Scientific) was performed guided by cholangiography and cholangioscopy. An uncovered self-expandable metal stent (Wallflex biliary, 8mm,12cm) was placed in trans papillary position. One month later an improvement of jaundice and cholestasis was seen

Saturday, April 25, 2020

Liver, adrenal and renal FNA/FNB

09:30 – 10:00

ePoster Podium 3

### ePP247 EUS FNB HAS SUPERIOR ACCURACY TO EUS FNA IN THE DIAGNOSTIC OF HEPATIC MASSES

**Authors** Gheorghiu M<sup>1</sup>, Seicean A<sup>1</sup>, Rusu I<sup>1</sup>, Sparchez Z<sup>1</sup>

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 DOI 10.1055/s-0040-1704638

**Aims** To show higher accuracy and immunohistochemistry availability of the Acquire-FNB needle versus the standard FNA needle

**Methods** The patient's database was collected prospectively from January 2018 to November 2019. We included patients aged between 18-80 years, with hepatic solid masses of unknown etiology, discovered by conventional

imaging, where percutaneous biopsy was limited by ascites or the location of the mass.

We used a linear ultrasound endoscope with a working channel (GF-UCT180-AL5, Olympus) attached to an ultrasound machine (Aloka F75). Ultrasound guided tissue sampling was done with the 22G-FNB (Acquire, Boston Scientific) and standard 22G-FNA (Olympus), in randomized order. We used 1 pass, dry suction, without needle preparation.

Final diagnosis was provided by any positive biopsy or suggestive imaging of the primary lesion in case of negative biopsies. Patients database recorded the final histology diagnosis of each FNA and FNB tissue acquisition, as matched pairs, their compatibility for immunohistochemistry testing, aggregated length and maximum fragment size of histology-core. We calculated the accuracy of each needle. T-Student test was used to compare the aggregated length of histology core.

**Results** We included 22 patients, mean age of 55.9 years, men:women=2:1. Mean mass size was 19 mm. Etiologies by frequency were: pancreas adenocarcinoma (32%), cholangiocarcinoma (27%), gallbladder carcinoma (18%), hepatocarcinoma (18%), and 1 hepatic abscess. Mean visible/microscopy aggregate histology core was 59±4.6/13.5±4.5 mm for FNB and 48±7.3/6.9 ±2.8 mm for FNA: t=1.9, p=0.09. FNB accuracy was 100% while FNA was 91%. Immunohistochemistry analysis was possible on 91% of FNB and 55% of FNA. In all patients, percutaneous hepatic biopsy was dismissed because of ascites (36%) or location of the mass near vessels (64%). No post-procedure complications were noted.

**Conclusions** The Acquire-FNB needle has superior diagnostic accuracy and immunohistochemistry availability than FNA in hepatic masses' biopsies, without observed complications.

## ePP248 ROLE OF ADRENAL GLANDS ENDOSCOPIC ULTRASOUND FINE-NEEDLE ASPIRATION BIOPSY ON NON-SMALL CELL LUNG CANCER STAGING

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DOI 10.1055/s-0040-1704639

**Aims** Endoscopic Ultrasound (EUS) is considered the most effective technology to visualize and to obtain samples from suspected mediastinal lymph nodes metastases in patients with suspected lung cancer. In these patients, the adrenal glands are predilection sites for distant metastases however, an enlarged adrenal gland is more likely to be benign than malignant. In this study we evaluated the use of EUS Fine-Needle Aspiration Biopsy (FNA/B) for the diagnosis of adrenal gland mass in lung cancer patients.

**Methods** We retrospectively reviewed the diagnostic performance of EUS-FNA/B in a cohort of patients with suspected lung cancer referred to our oncological center between January 2012 and September 2019. 20 patients were recruited for this study. We identified the left adrenal gland with a so-called 'seagull' shape, and we performed biopsy via trans-gastric puncture with 22 or 25-gauge needle. The right adrenal gland was in the side margin of the duodenal-pancreatic external frame, EUS-guided FNA/B was performed via trans-duodenal puncture using a 22-gauge needle.

**Results** All patient before underwent EUS FNA/B biopsy were classified as cIV stage, according to VIII edition of non-small cell lung cancer TNM. In 18 cases we performed the procedure on the left gland, in the other two cases on the right gland. In eight patients histological diagnosis showed NSCLC metastases on adrenal gland and confirmed the IV stage. In the others 12 patients histological nature of the adrenal gland mass was related to a incidentaloma and the pathological stage was changed. Adverse events were not reported.

**Conclusions** EUS-FNA/B is a safe, feasible and highly sensitive technique. Left adrenal gland is almost ever visible whereas, right adrenal gland in much difficult to see due to the position. In case of mediastinal lymph nodes and adrenal gland masses it is particularly indicated perform EUS-FNA/B biopsy for a complete and specific preoperative staging.

## ePP249 EUS GUIDED FINE NEEDLE ASPIRATION OF RENAL AND ADRENAL LESIONS. SINGLE CENTER RESTROSPECTIVE ANALYSIS

**Authors** Bazaga S<sup>1,2</sup>, Tejedor J<sup>3</sup>, Gallardo MA<sup>3</sup>, Garcia-Alonso FJ<sup>3</sup>, Carbajo A<sup>3</sup>, de Benito M<sup>3</sup>, Perez-Miranda M<sup>3</sup>, de la Serna C<sup>3</sup>

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DOI 10.1055/s-0040-1704640

**Aims** To describe the technique, adverse events and results of EUS-guided renal and adrenal fine needle aspiration (FNA) of radiologically indeterminate lesions.

**Methods** Retrospective case series of a prospective database including echoendoscopies from March 2014 to August 2018. Diagnosis, adverse events, and follow-up data were retrospectively collected. A biopsy was considered successful if it allowed a histological diagnosis. Malignant required confirmation in surgical specimens if available, although in non-surgical patients the cytological diagnosis was assumed; benign diagnoses required radiological stability during ≥12 months.

► **Tab.1** Diagnostics

N=36	Renal lesions (n=8)	Adrenal lesions (n=28)
Metastasis - Lung cancer - Pancreatic adenocarcinoma - Urinary bladder carcinoma - Unknow primary	0 0 0 1 (12.5%)	16 (57.1%) 1 (3.6%) 1 (3.6%) 6 (21.4%)
Renal neoplasia	4 (50%)	1 (3,6%)
Benign	3 (37,5%)	3 (10,7%)

**Results** We identified 36 patients with a mean age of 67 (SD: 10) years; 27 (75%) men. Eight (22.2%) were renal biopsies (5 right, 3 left) and 28 (77.8%) adrenal biopsies (4 (14.3%) right, 21 (75%) left, and 3 (10.7%) bilateral). 100% of the biopsies were diagnostic, without adverse events. Average size of the masses was 33 mm (ICR 25-47). The predominant endosonographic pattern was solid (97%) and hypoechogenic (69%). The majority of FNAs were performed through a transgastric access (77%) with 22G cytology needles (97,2% cases) with 3 and 4 needle passes in 83% of cases. Larger size (p = 0.05) and solid, hypoechogenic endosonographic pattern (p = 0.08) showed a tendency to be associated with a malignant etiology.

**Conclusions** EUS-guided FNA is an effective and safe tool in the diagnosis of renal/adrenal masses of uncertain origin.

Saturday, April 25, 2020

09:30 – 10:00

Advances in bariatric and biliopancreatic  
endoscopy

ePoster Podium 4

**ePP250 ENDOSCOPIC SLEEVE GASTROPLASTY WITH ENDOMINA DEVICE: THE ECONOMIC IMPACT ON OUR PUBLIC HOSPITAL****Authors** Masquin H<sup>1</sup>, Musquer N<sup>2</sup>, Riche V-P<sup>3</sup>, Louis C<sup>4</sup>, Sellal K-O<sup>1</sup>, Guile R<sup>5</sup>, Guillouche M<sup>6</sup>, Clouet J<sup>1</sup>, Coron E<sup>2</sup>**Institute** 1 Nantes University Hospital, Pharmacy, Nantes, France; 2 Nantes University Hospital, Institut des Maladies de l'Appareil Digestif, Nantes, France; 3 Nantes University Hospital, Direction de la Recherche DRCl, Nantes, France; 4 Nantes University Hospital, Chirurgie Cancérologique Digestive & Endocrinienne, Nantes, France; 5 Nantes University Hospital, Service d'Information Médicale, Nantes, France; 6 Nantes University Hospital, Endocrinologie, Diabétologie et Maladies Métaboliques, Nantes, France  
DOI 10.1055/s-0040-1704641**Aims** Endoscopic bariatric therapies have been developed to treat obesity but no recommendation and no reimbursement exist in France. In our hospital, innovation funding has been validated to used endoscopic sleeve gastroplasty (ESG) technique and 5 to 10 patients a year for two years can be involved. The economic impact of this strategy has to be considered before its regular use.**Methods** We estimated the hospital costs of the stays of patients undergoing either an ESG or surgery for a sleeve gastrectomy. Forward-looking micro-costing data in 2019 (staff costs, medical devices and sterilization) and data from a retrospective group of patients who benefited from surgery in 2018 in our hospital (average length of stay, labile blood products or specific drugs administration) and from a group of ESG procedure provided by the manufacturer (duration of the operation) were coupled with data from the French National Cost Study.**Results** Practitioners' feedbacks on these first procedures of ESG are positive and the first results are favorable. The weight loss in percentage of the total weight is 10% after one month (n=3), 15% after 3 months (n=2) and 24% after six months (n=2).

The cost of an ESG stay is estimated at 5945€ (for a one-night stay) and generates an important deficit for our hospital. It is more expensive than the cost of a surgical sleeve stay (4392€). The Endomina device exhibits the majority of the cost (76%).

**Conclusions** The cost for this new technique is currently higher than for surgery. Only patients with medical contraindication to surgery should benefit from it. Sustainability of this activity will depend on the evolution of procedures and the possible reimbursement of medical devices and medical action. This progression cannot take place without the will of manufacturers and medical societies.**ePP251 ENDOSCOPIC TREATMENT OF GASTROBRONCHIAL FISTULA AFTER SLEEVE GASTRECTOMY WITH INJECTION OF CYANOACRYLATE GLUE (WITH VIDEO)****Authors** Monino L<sup>1,2</sup>, Gonzalez J-M<sup>2</sup>, Bege T<sup>3</sup>, Gasmi M<sup>2</sup>, D'journo XB<sup>4</sup>, Berdat S<sup>3</sup>, Barthet M<sup>2</sup>**Institute** 1 Cliniques Universitaires Saint Luc, Université Catholique de Louvain, Endoscopy Unit, Bruxelles, Belgium; 2 Aix-Marseille Université, AP-HM, Hôpital Nord, Gastroenterology and Endoscopy Unit, Marseille, France; 3 Aix-Marseille Université, AP-HM, Hôpital Nord, Department of Digestive Surgery, Marseille, France; 4 Aix-Marseille Université, AP-HM, Hôpital Nord, Department of Thoracic Surgery, Marseille, France

DOI 10.1055/s-0040-1704642

**Aims** Gastrobronchial fistula (GBF) is a rare complication of bariatric surgery. Traditionally, GBF is managed surgically with or without pulmonary lobectomy. Endoscopic management of GBF consists of occluding the fistula by clips or esophageal prosthesis or in rare case by injecting glue. The aim was to evaluate the effectiveness of endoscopic treatment of GBF by injection of cyanoacrylate.**Methods** Retrospective monocentric study of consecutive cases of GBF after bariatric surgery referred for management. The endoscopic management consisted of two steps: first step consisted in treating the collection or abscess by internal drainage (double pig tail prosthesis) and irrigation/washing of the cavity with a nasocavitary drain. Then, a second step consisted by gluing the GBF using an injection of cyanoacrylate and lipiodol into the fistula pathway in order to occlude it. The main outcome was the absence of GBF at 6 months on imaging and/or upper endoscopy with fluoroscopy opacification.**Results** A total of 11 patients were treated for GBF after bariatric surgery between August 2009 and June 2019. All patients were women who had a laparotomy sleeve gastrectomy. The average age was 46.3 years (24-69). The development of GBF occurred, on average, within 10 months after sleeve gastrectomy. 8 patients were successfully treated without recurrence at 6 months (72%; 8/11) with disappearance of clinical signs. Of these, 4 patients received a single glue injection and 4 had up to three sessions of gluing before the fistula was completely occluded. Three patients were treated surgically after failure of endoscopic GBF gluing.**Conclusions** Cyanoacrylate injection seems to be a simple and promising technique in the treatment of GBF after sleeve gastrectomy. In case of success, it allows to avoid a surgical conversion to By-pass associated or not with a pulmonary lobectomy.**ePP252V ENDOSCOPIC MULTIMODAL EXTRA-GASTRIC PANCREATIC NECROSECTOMY: UNUSUAL AND MULTIPLE ACCESS ROUTES (WITH VIDEO CASES)****Authors** Gonzalez J-M<sup>1</sup>, Gasmi M<sup>1</sup>, Monino L<sup>1</sup>, Barthet M<sup>1</sup>**Institute** 1 Hôpital Nord, AP-HM, Aix Marseille Univ., Gastroenterology, Marseille, France

DOI 10.1055/s-0040-1704643

This video showed 4 patients from series of 6 managed for post SAP infected necrosis by EN using multiple accesses, including at least one extra-gastric route (percutaneous, transcolic or transjejunal). *The 1st access* (median 6 weeks [4-20]) were transgastric (3 patients), trans-duodenal (1pt), and trans-jejunal (1pt), created with LAMS in 4 cases and metal stent in 1 case. *The 2nd access* for EN (median of 13 weeks [4-22]) was percutaneous in 5 patients and transcolic through LAMS in one

All patients healed with a median of 3 sessions [3-8] of EN at a median of 31 months [12-36].

### ePP253 A SYSTEMATIC REVIEW AND META-ANALYSIS OF ENDOSCOPIC AND SURGICAL RESECTION FOR AMPULLARY LESIONS

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DOI 10.1055/s-0040-1704644

**Aims** Ampullary lesions (ALs) can be treated by endoscopic-ampullectomy (EA), surgical-ampullectomy (SA) or pancreaticoduodenectomy (PD). EA reveals high risk of incomplete resection and surgical interventions lead to substantial morbidity and mortality. To date, there are no prospective comparative trials. We performed a systematic review and meta-analysis to analyze complete resection (RO), adverse events (AEs) and recurrence between EA, SA and PD.

**Methods** Electronic databases (Medline, EMBASE, SCOPUS) were searched for publications analyzing ALs from 1990 to 2018. Studies that provided data for RO, AEs and/or recurrence were eligible. PRISMA guidelines were followed and papers were evaluated by Newcastle-Ottawa-Scale. RO, AEs and recurrence were pooled by means of a fixed and random-effects model. Proportions were transformed by Freeman-Tukey-Double-Arcsine-Proportion-model and compared by students' t-test.

**Results** We identified 59 independent studies. The pooled RO was 76.6% (CI:71.8%-81.4%, I<sup>2</sup>=91.38%, p< 0.001) for EA, 96.4% (CI:93.6%-99.2%, I<sup>2</sup>=37.8%, p=0.107) for SA and 98.9% (CI:98.0%-99.7%, I<sup>2</sup>=0%, p=0.531) for PD. AEs were 24.7% (CI:19.8%-29.6%, I<sup>2</sup>=86.4%, p< 0.001) for EA, 28.3% (CI:19.0%-37.7%, I<sup>2</sup>=76.8%, p< 0.001) for SA and 44.7% (CI:37.9%-51.4%, I<sup>2</sup>=0%, p=0.653) for PD. Recurrences were registered in EA in 13.0% (CI:10.2%-15.6%, I<sup>2</sup>=91.3%, p< 0.001), in SA in 9.4% (CI:4.8%-14%, I<sup>2</sup>=57.3%, p=0.007) and in PD in 14.2% (CI:9.5%-18.9%, I<sup>2</sup>=0%, p=0.330). Differences between proportions were significant in RO for EA compared to SA (p=0.007) and PD (p=0.022), for complications between EA and PD (P=0.049) and not for recurrence.

**Conclusions** Our data indicate an enhanced rate of complete resection in surgical interventions but accompanied with clearly higher risk of complications. Nevertheless, studies showed various sources of bias, limited quality and a significant homogeneity, particularly in EA studies. High quality studies are necessary to determine the standard in therapy for AL.

### ePP254V AMPULLECTOMY, STONE REMOVAL FOLLOWED BY SNARE POLYPECTOMY OF LOWER INTRADUCTAL ADENOMA AND ABLATION BY ARGON PLASMA COAGULATION

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DOI 10.1055/s-0040-1704645

Ampullary adenomas are pre cancerous lesions involving the papilla and are mainly asymptomatic.

A 70 year old male was diagnosed to have bile duct stones on MRCP, when presented with abdominal pain and altered LFT's. Ampullary adenoma was noted on ERCP. Ampullectomy was done. Balloon sphincteroplasty was done and 2 stones were extracted from the dilated duct. Lower ductal adenoma was noted and this was removed by snare polypectomy. Argon plasma coagulation was done for the remnant lesions. Nasoendoscope direct cholangioscopy was done to confirm there is no further extension of biliary adenoma. 3 months later, tiny remnants were ablated (APC).

### ePP255 USEFULNESS OF NEW-DESIGNED HEMOCLIP FOR CASES WITH ENDOSCOPIC PAPILLECTOMY

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DOI 10.1055/s-0040-1704646

**Aims** Endoscopic papillectomy (EP) is less invasive treatment for duodenal papillary tumor compared with surgical operation such as pancreaticoduodenectomy. However, EP has high risk of complications like hemorrhage, pancreatitis, and perforation. Therefore, intraoperative treatments such as hemostasis and closure of mucosal defect are important for prevention of complication after EP. Although closure by side-viewing endoscope was difficult due to poor maneuverability of clip, new-designed hemoclip was recently developed which could overcome the problem. The present study was aimed to evaluate new-designed hemoclip for EP by comparison with general clip.

**Methods** This is a retrospective single-center study of all patients who underwent EP during May 2016 to October 2019. Patients were divided into two groups; Group S which closure was performed by new clips (Sure clip, Micro-Tech, Nanjing, China) and Group O which closure was performed by general clips. We analyzed closure time, number of clips, and delayed complications after EP as clinical outcomes.

**Results** During the period, EP was performed 41 cases. In detail, 13 cases were included in Group S, while remaining 28 cases were in Group O. The median age in the study was 62 years old (39-82). The median diameter of tumor in each group were 13mm in Group S and 11.5mm in Group O, respectively (p=0.19). The median number of clips for closure was 3 which was not significantly different between Group S and Group O. The median of closure time in Group S was significantly shorter than that in Group O (5 minutes vs 12 minutes, P=0.006). Overall hemorrhage after EP was 5 cases (12%). In detail, 1 case (7.7%) in S group and that in O group was 4 cases (14%) which was not significantly different (p=1.00).

**Conclusions** New-designed hemoclip was suggested to be useful for endoscopic closure after EP.

### ePP256 NON-SPECIFIC UPPER GI MURAL THICKENING ON CT - IS IT JUST FROM PERISTALSIS?

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DOI 10.1055/s-0040-1704647

**Aims** British Society of Gastroenterology (BSG) guidance on the indications for diagnostic endoscopy include 'abnormal findings on CT imaging'. Non-specific upper GI mural thickening on CT is a common abnormal finding raising the suspicion of malignancy. The correlation between CT mural thickening in the upper GI tract and endoscopic diagnosis of malignancy is not clearly known.

**Methods** Retrospective single centre study of patients referred for gastroscopy with the indication of 'abnormal imaging' (n=147) from 2016 to 2018. CT reported 'mural thickening' was included for analysis. Statistics were performed using Welch's t-test.

**Results** 59 patients underwent gastroscopy for CT reported mural thickening: oesophageal 20 (34%), GOJ 9 (15%), gastric 23 (39%), pyloric 4 (7%), duodenal 5 (8%) and jejunal 1 (2%). Median time from CT to endoscopy 21 days (IQR 12 - 54). Median age 77 (IQR 62 - 83).

11 (19%) patients had a normal gastroscopy, 24 (41%) showed inflammatory changes (oesophagitis or gastritis), 20 (34%) had evidence of a hiatus hernia, and 5 (8%) had benign polyps.

5 (9%) had a histological diagnosis of gastric adenocarcinoma, 4 (7%) of Barrett's oesophagus and 1 (2%) of squamous dysplasia.

Mean haemoglobin for patients with malignancy 104 g/L vs 125 g/L for the overall study group (p=0.13, NS). Mean albumin for patients with malignancy 37.6 g/L vs 38.4 g/L for the overall study group (p=0.81, NS).

**Conclusions** Upper GI mural thickening on CT cannot be dismissed. Despite oesophagitis, gastritis and hiatus hernia making up most endoscopic diagnoses (75%), it correlated with malignancy, dysplasia or metaplasia in 10/59 (17%) patients in this study. Patients with malignancy could not be accurately differentiated by indication for imaging or by biochemical markers. There is good concordance in pathology detection at gastroscopy following findings of thickening on CT. We recommend gastroscopy is performed in every case when this abnormality is detected.

### ePP257 IT IS SO USEFUL TO KNOW GASTRIC CANCER RISK AT GASTRIC ENTRANCE (CARDIA) WITH THE PRESENCE OF AN EASY SIMPLE SIGN

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DOI 10.1055/s-0040-1704648

**Aims** We have confused with various newly endoscopic findings (patchy redness and map-like redness etc.) after H.pylori/HP eradication. On this time, we have found out a new other ultimate useful finding showing HP related gastritis at gastric cardia including present and post HP infection. Our aim of this study is to elucidate the possibility of judgement with only this cardiac endoscopic view about presence or absence with HP infection.

**Methods** We have found out so useful and specific cardiac image (Whale Shark Sign: WSS) closely related to HP infection six years ago. We have examined the presence of WSS on 5, 423 cases that have been able to overview on their endoscopic profiles. The 4,939 cases their serum HP antibody titers were measured from Jan. 2012 to Oct. 2019. A total of 3,837 patients (HP positive) were enrolled.

**Results** Mean age of patients was 51.2 years old. The positive predictive value (PPV) of WSS was surprisingly high (98.9%). According to this high PPV, we can think WSS positive cases are high risk of gastric cancer. This WSS mean that the presence of irregular gastric mucosal surface pattern and the presence of lymphoid hyperplasia, that showing HP infectious stomach. This lymphoid hyperplasia at gastric cardia were recognized small round whitish nodules on white light endoscopy. And this was more emphasized with image-enhanced endoscopy (Narrow Band Imaging: NBI), it looks like Whale Shark. It is so useful to know gastric cancer risk at gastric entrance (cardia) with the presence of an easy simple sign. This WSS sign is so simple and easy for every gastroenterologist.

**Conclusions** We have been able to judge the presence of HP infection with only cardiac endoscopic image (WSS). Since this sign is very easy and simple, everyone will be able to judge the presence of HP infection and gastric cancer risk.

### ePP258 INTEREST OF PREOPERATIVE UPPER GASTROINTESTINAL ENDOSCOPY BEFORE CHOLECYSTECTOMY IN PATIENTS WITH UNCOMPLICATED GALLSTONES

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DOI 10.1055/s-0040-1704649

**Aims** Uncomplicated gallstones is an indication for surgery when it is symptomatic. However, it is difficult in some cases to link the symptoms to the biliary origin without digestive exploration. The purpose of our study is to determine the interest of upper gastrointestinal endoscopy (UGE) before cholecystectomy in these patients.

**Methods** This is a retrospective study that collects all patients with uncomplicated gallstones who had UGE between January 2017 and June 2019. The different endoscopic and histological aspects were noted.

**Results** It consists of 47 patients divided into 36 women (76.6%) and 11 men (23.4%) with a mean age of 53.5 years (between 30 and 80 years). All patients had atypical epigastralgia. The other associated symptoms were: heartburn and regurgitation (16 patients, 34%), pain in the right hypochondrium (4 patients, 8.5%), bilious vomiting (3 patients, 6.4%) and dyspepsia (2 patients, 4.3%). UGE was normal in 15 patients (32%). The different endoscopic abnormalities found in the other patients were: congestive gastropathy (n = 19, 40.5%), congestive gastro-bulbitis (n = 4, 8.5%), nodular gastritis (n = 3.6, 4%), an active ulcer of the bulb (n = 2, 4.3%), erosive gastropathy, petechial gastropathy, congestive bulbitis and ulcerated bulbitis in one case each. Antro-fundic biopsies showed Helicobacter Pylori (HP) gastritis in 16 cases (34%). Gastritis was active in all cases with mild, moderate and severe activity in 2, 10 and 4 cases respectively. Fundic atrophy was present in 2 patients (4.3%). Three patients had intestinal metaplasia (6.4%).

**Conclusions** In our series, 68% of patients with uncomplicated gallstones had endoscopic abnormalities and 34% had HP gastritis. In these patients, it seems reasonable to treat them before considering cholecystectomy.

Thursday, April 23, 2020

Luminal EUS

15:00 – 15:30

ePoster Podium 3

### ePP259 CLINICAL FACTORS THAT INFLUENCE THE ACCURACY OF ENDOSCOPIC ULTRASONOGRAPHY IN EARLY GASTRIC CANCER

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DOI 10.1055/s-0040-1704650

**Aims** Assessment of a tumor stage of early gastric cancer (EGC) is critical in its treatment modality. Endoscopic ultrasonography (EUS) has been used as a reliable method for staging the depth of invasion. However, its diagnostic accuracy is associated with a number of potential variables. This study is to investigate factors that influence accuracy of EUS for staging the depth of invasion in EGC.

**Methods** Patients with EGC who underwent surgical and/or endoscopic treatment were studied retrospectively. A pathological review was performed on all resected tissues. Factors such as tumor size, tumor location, pathologic results, and experience of endoscopists were analyzed.

**Results** A total of 223 EGCs from 211 patients (mean-age 62.8 years, 66.1% male) were included from March 2016 to September 2019 at an academic hospital (Seoul St. Mary's hospital, Korea). The overall accuracy of EUS for staging

the depth of invasion was 64.7%. The diagnostic accuracy of EUS for tumor invasion depth was significantly affected by the size of tumor, its location, and ulceration. The diagnostic accuracy for lesions either of 2-3cm or >3cm was significantly higher than for those ≤2cm respectively. (odds ratio: 3.15; 95% CI: 1.48-6.69, p=0.003; odds ratio: 4.70; 95% CI: 2.24-9.86, p< 0.001) The diagnostic accuracy for lesions located in lower one third of the stomach was also higher than those either in upper or mid one third of the stomach (odds ratio: 3.12; 95% CI: 1.01-9.60, p=0.047). Besides, ulceration showed significantly higher diagnostic accuracy (odds ratio: 3.11; 95% CI: 1.67-5.79, p< 0.001). However, diagnostic accuracy of EUS for staging the depth of invasion was not associated with patients' pathologic results or experience of endoscopists. **Conclusions** Our results suggest that the size of tumor, its location, and ulceration yielded a high accuracy of EUS, all of which should be cautiously considered in the decision on the treatment strategy.

## ePP260 EUS IN DIAGNOSTICS OF INDOLENT AND AGGRESSIVE FORMS OF NONHODGKINS GASTRIC LYMPHOMAS

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**DOI** 10.1055/s-0040-1704651

**Aims** To establish endoscopic ultrasonic criteria of diagnostics indolent and aggressive forms of gastric NHL.

**Methods** For studying of possibilities of endosonography in diagnostics NHL of a stomach 46 patients have been analyzed. All patients after standard gastroscopy was carried out endoscopic ultrasound scanning with biopsy.

**Results** We are defined endosonography criteria nonhodgkins lymphomas of a stomach: The tumor starts in deep layers mucosa and submucosal layers, extends mainly on submucosal layer, it is marked multicentric defeats, echoic of the tumors is always lowered or heteroechoic with hypoechoic inclusions. We are defined endosonography criterias various morphoimmunological variants of NHL of a stomach which we have divided into three cores of type of displays: 1. I type - a tumour is visualised like heperechoic formations with plural hypoechoic small dots - 14 patients. 2. II type - a tumour is defined in the form of massive hypoechoic tumor infiltration - 26 patients. 3. III type - hyper-echoic formation within mucosa and submucosal layers with infringement of their differentiation (similar to postulcer scars) - 6 patients. We established that I type of changes on ours endosonography classifications is characteristic for indolent NHL; II type - in 73,1 % meets at aggressive NHL (diffuse B-cell lymphomas), and III type - is characteristic for indolent MALT lymphoma of a stomach.

**Conclusions** In 84,9 % at use EUS it is possible to assume authentically presence NHL of a stomach and in 94,7 % EUS will allow to exclude authentically pathological process in a stomach. Endosonography has allowed us to reveal changes in locoregional lymph nodes and to carry out differential diagnostics of the found out changes between hyperplastic and metastatic. In our research at 24 patients have been found out increased locoregional lymph nodes: In 16 cases metastatic character of increase, in 8 supervision - hyperplastic is ascertained.

## ePP261 THE USE OF 3D VIRTUAL REALITY IN ENDO-ULTRASONOGRAPHY FOR RECTAL ADENOCARCINOMA: A NEW CONCEPT, FOR A NEW SOFTWARE APPLICATION ([HTTPS://WWW.3D-EUS.FR](https://www.3d-eus.fr))

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**DOI** 10.1055/s-0040-1704652

**Aims** MRI and rectal Endo-ultrasonography are key to the locoregional staging of rectal adenocarcinoma. Endo-ultrasonography has been criticised for being imprecise and unsystematic, because of the machine or of the operator. Moreover EUS images can be difficult to interpret for other specialists and for patients, medical records are various and there is usually a lack of systematisation.

The aim of this application (3D-eus.app) was therefore to address these limitations by developing a new software application to display the results of the rectal endo-ultrasonography in 3D clear pictures, with a complete systematized medical record.

**Methods** The application runs on the practitioner's PC or Mac, independent of the ultrasonography computer. As the EUS is performed, results are recorded in the app by the nurse, capturing main data recommended by SFED for this procedure, producing a medical record with measures, utN classification and the localisation to sphincters and internal genital organs.

The feature of most interest to the practitioner is the navigation control, showing, the rectal carcinoma in the space. Then we find the 3, classic two D cuts, front, sagittal and transversal, that can be modified selected like in MRI.

**Results** The software is an aid to make EUS more systematic and to support interpretation through the clarity of the images. In our experience, patients are happy to understand what we do, what they have, and why they would have surgery (and where it would be) or radio chemotherapy.

**Conclusions** In conclusion, the 3D-eus app is a new computer program usable as an aid to EUS for rectal carcinoma wich provides an understandable personalised medical record with pictures. Its use could be extended through further development, to other organs, to student training, and as a support tool for multidisciplinary coordination meetings and in announcement consultation. Further study are needed.

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Saturday, April 25, 2020

09:30 – 10:00

Upper GI: Management of complications 3

ePoster Podium 8

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## ePP262V STEP-BY-STEP TECHNIQUE OF ENDOSCOPIC VACUUM THERAPY (ESOSPONGE) FOR THE TREATMENT OF ESOPHAGEAL PERFORATION IN BOHERAAVE SYNDROME

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**DOI** 10.1055/s-0040-1704653

A 52-year-old patient was referred for esophageal perforation after vomiting initially treated with surgery without success and thoracic drainage. Esophago-gastroscopy showed a 5-cm long rupture in the lower esophageal wall, resulting in a 5 × 5 cm purulent cavity. Under endoscopic and fluoroscopic guidance, 9 sessions of Esosponge placement (11 sponges) were performed, firstly applied inside the collection and finally inside the esophageal lumen due to reduction of the perforation's caliber. During 2 sessions double sponges were inserted simultaneously into the cavity. Final esophagogastroscopy and barium contrast radiography showed a small residual pseudodiverticulum. The patient returned to oral nutrition and fully recovered.

## ePP263 ESOPHAGEAL STENTING FOR ESOPHAGOGASTRIC CANCER PALLIATION: HOW TO PROSPECTIVELY EVALUATE QUALITY OF LIFE?

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DOI 10.1055/s-0040-1704654

**Aims** Esophageal stents have a well-established role in the palliation of esophageal and esophagogastric cancers. However, there is little prospective data on the impact of esophageal stenting in patients' quality of life (QoL). Our aim was to evaluate the feasibility of a web-based app to assess the impact of esophageal stenting in the QoL of patients with esophageal malignancy.

**Methods** Prospective study from August 2017 to October 2019. Three validated questionnaires (EORTC-QLQ-C30, QLQ-OES18 and QLQ-OG25) were incorporated in a smartphone app. Questionnaires were applied to esophagogastric cancer patients before stent placement (baseline) and at three moments after stenting (30, 90 and 180 days), directly through a smartphone app or during a nursing phone consultation. Answers were wirelessly transmitted.

**Results** Eighty esophageal or esophagogastric stents were placed in 72 patients, with an immediate success rate of 100% and no immediate adverse events. Ten patients died at 30 days. Sixty-eight patients (94%) answered the baseline QoL questionnaire, 23 at 30 days, 12 at 90 days and 4 at 180 days. We included 23 patients for QoL analysis at 30 days post-stenting: 23 for global health status (QLQ-30) and 15 for esophageal symptoms (QLQ-OES18). There was a significant improvement in swallowing saliva (mean score 44 vs 73,  $p=0.017$ ) and constipation (mean score 55 vs 86,  $p=0.015$ ) and a tendency for dysphagia improvement (37 vs 61,  $p=0.05$ ). There was a mean score improvement >10 points in global health status, although not statistically significant.

**Conclusions** QoL assessment is paramount to evaluate the effectiveness of endoscopic palliative techniques. In this study, prospective QoL evaluation of stent palliation for esophageal malignancy was feasible and consistent with an improvement in QoL. The main constraint was to abstain from involving health professionals during the follow-up.

## ePP264 ENDOSCOPIC INTERNAL DRAINAGE (EID) USING TRANSMURAL DOUBLE-PIG-TAIL STENTS (DPT) IN LEAKS AND SUTURE-LINE DEHISCENCE FOLLOWING UPPER GI TRACT SURGERY: SIMPLE SOLUTION TO A COMPLEX PROBLEM

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DOI 10.1055/s-0040-1704655

**Aims** Endoscopic management of GI postoperative leaks (POL) is challenging. Therapeutic endoscopy of POL includes intraluminal SEMS and endoscopic vacuum therapy (EVT) using bioactive sponge. Endoscopic internal drainage (EID) with double-pigtail (DPT) could be effective treatment. We report our experience with DPT-EID for leaks or suture-line dehiscence following upper GI tract surgery

**Methods** From May 2017 to June 2019, 10 patients (6 women; 55.3±11.5 years old) were treated at our endoscopic tertiary center. DPT drains (7-10F/5-

10cm) were placed through the suture line orifice with/without associated luminal balloon dilatation, EUS-guide drainage of collections or intraluminal SEMS. Clinical and technical success were determined. Treatment success definition: absence of contrast agent leakage on CT and endoscopy after removal of DPT.

**Results** Seven patients presented infra-diaphragmatic POL: 5 Laparoscopic sleeve gastrectomy (LSG), 1 gastric bypass and 1 gastro-jejunostomy (Whipple procedure); 3 supra-diaphragmatic POL: 2 esophagectomy and gastric pull-up and 1 Boerhaave syndrome. 70% were ASA III-IV and 30% required ICU admission. Nine patients (90%) were treated as first-line treatment. Technical and clinical success was achieved in 10 patients and 7/8 patients (87.5%), respectively. Additional endoscopic techniques were performed; balloon dilatation in LSG (4/5), EUS-guided drainage (3/10) and SEMS insertion (1/10). Clinical success was achieved after a median of 3 days (IQR 2-3) treatment with a range of 2-8 endoscopic procedures per patient. Complications: tracheo-esophageal fistula (procedure-related) and one death (non-related embolism). Seven patients were found to be healed at endoscopy after an average of 14 weeks (range 12-23), two patients are still under treatment and one patient died.

**Conclusions** DPT-EID is effective and safe. DPT-EID appears better tolerated than luminal SEMS and more efficient than ETV in the management of GI transmural defects. DPT drainage may be used as first-line or rescue treatment for POF with lower morbidity-mortality than surgery.

Saturday, April 25, 2020

10:00 – 10:30

EMR in colon 1

ePoster Podium 1

## ePP265 INTRAPROCEDURAL BLEEDING DURING PIECEMEAL UNDERWATER-EMR IN THE COLON

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DOI 10.1055/s-0040-1704656

**Aims** Underwater-Endoscopic mucosal resection (UWEMR) has been shown to be safe and effective for the treatment of colonic adenomas. However, most studies have been based on smaller lesions between 10 mm and 20 mm in size in which en bloc resection is usually feasible. For larger lesions, piecemeal-UWEMR can be performed but there may be concerns around reduction of visibility due to intraprocedural influx of even small amounts of blood into the intraluminal fluid. In this subgroup analysis of the Augsburg-Underwater-EMR trial, we demonstrate the effects of intraprocedural bleeding on completion and perforation rate for laterally spreading tumor (LST) lesions between 25 and 40 mm in size.

**Methods** A total of 43 colonic LST in 38 patients were resected with piecemeal-UWEMR (≥2 resected pieces). The median lesion size was 30 mm which was estimated intraprocedurally using a 15 mm or 25 mm snare. All resected lesions were Paris Is or IIa lesions without signs of malignancy. UWEMR involved air desufflation from the lumen and subsequent water insufflation before resection was commenced. Resection was done with a standard colonoscope and a 15 mm or 25 mm snare.

**Results** Intraprocedural bleeding was observed in 10 procedures (23%). UWEMR could be continued in eight procedures, however, only after bleeding had been controlled conventionally using hemoclips or a coagulation forceps. UWEMR had to be terminated and resection continued with conventional EMR in two procedures (4.7%). No perforation was observed in any of the cases.

**Conclusions** Intraprocedural bleeding during piecemeal-UWEMR can be controlled with conventional methods and does not lead to further complications. A crossover to conventional EMR due to intraprocedural bleeding is usually not necessary.

## ePP266 SNARE TIP SOFT COAGULATION OF THE MUCOSAL DEFECT MARGIN FOLLOWING COLONIC ENDOSCOPIC MUCOSAL RESECTION (EMR) REDUCES RECURRENCE IN A 'REAL LIFE' SETTING

**Authors** Arisha MA<sup>1</sup>, Koritni A<sup>1</sup>, Maza I<sup>1</sup>, Half E<sup>1</sup>, Awadie H<sup>2</sup>, Bana S<sup>2</sup>, Muaalem R<sup>2</sup>, Klein A<sup>1,2</sup>

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DOI 10.1055/s-0040-1704657

**Aims** EMR is the treatment of choice for Large (>20 mm) colonic lateral spreading lesions (LSL) with high success rates, good safety profile and multiple advantages compared with surgery. A recent randomized study from Australia, demonstrated that ablation of the post-EMR mucosal defect margin using snare tip soft coagulation (STSC) significantly reduced polyp recurrence at surveillance.

We aimed to determine the efficacy of this technique for reducing polyp recurrence in a 'real life' setting.

**Methods** Analysis of a prospectively collected database of LSL ≥ 20 mm was performed in two hospitals in Israel. Standard EMR technique was used in all cases emphasizing complete snare excision followed by thermal ablation of the entire defect margin. Surveillance colonoscopy was performed 4-6 month after resection. Recurrence was assessed endoscopically with High Definition White Light (HDWL), and Narrow Band Imaging (NBI). Normal appearing scars were randomly biopsied as were any scars suspicious for recurrence. The primary endpoint was lesion recurrence at first surveillance colonoscopy.

**Results** Over 36 months 334 LSL in 304 patients were removed by EMR. 275/334 (82.3%) were removed piecemeal. 288/334 (86%) lesions were treated with ablation of the margin. 200/334 (60%) completed first surveillance colonoscopy. Biopsies from post EMR scars were performed in 79 cases (random biopsies from normal appearing scars n=68; biopsied from suspected recurrence in n=11). In standard lesions (excluding previously attempted, fully circumferential, ICV, peri-appendix lesions) recurrence was suspected endoscopically and confirmed histologically in 6 cases (3%). Overall in the entire cohort, histologically confirmed recurrence occurred in 12 lesions (6%).

**Conclusions** Ablation of the mucosal defect margin following colonic EMR results in very low recurrence rates in a 'real life' setting, which is accurately identified endoscopically. STSC should be performed routinely following piecemeal colonic EMR

## ePP267V THE 'BUBBLE-SIGN' IS A USEFUL ADJUNCT IN PRECISE COLD SNARE POST-POLYPECTOMY DEFECT ASSESSMENT

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DOI 10.1055/s-0040-1704658

Cold snare polypectomy (CSP) is a safe and efficient technique for resection of colorectal polyps, especially those up to 10mm, but also for lesions larger than 10mm, with acceptable recurrence rates. Although CSP-related perforations are rare, Rodriguez-Sanchez et al recently demonstrated the 'bubble-sign' as a way to assess post-CSP defects for perforation.

One of the 'flaws' of CSP is incomplete resections. Blood oozing post-polypectomy often makes assessment of the defect difficult. Our video shows the 'bubble-sign' is useful for assessment of post-CSP defects for residual polyp, as it controls oozing via tamponade, whilst expanding the defect, allowing for clearer visualisation.

Saturday, April 25, 2020  
Esophageal dilation and stenting

11:00 – 11:30  
ePoster Podium 1

## ePP268 DO WE NEED X-RAY FOR ESOPHAGEAL STENTING ANYMORE?

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DOI 10.1055/s-0040-1704659

**Aims** Evaluate the features and safety of ultrathin endoscope (UTE)-guidance esophageal stenting without fluoroscopy, and compare with standard techniques using X-rays.

**Methods** The study involved 326 patients from 2010 to 2019 (247M/79F, a mean age of 69).

A stent was placed by standard technique using X-rays in 40 patients (group A).

284 patients underwent UTE-guided SEMS placement without fluoroscopy (group B).

We used UTE with a diameter of 4.7 mm. Partially covered SEMS's by one design from 80 mm to 140 mm in length were used.

**Results** In group A the endoscope diameter does not make it possible to pass through tight malignant stenosis. Risk of intraoperative complications increases, like damage of esophageal wall, the incorrect assessment of stenosis length. In case of strong stenosis it is required to perform preliminary bougienage or balloon dilation of the narrow lumen, that can also increase the risk of complications.

In B group enables pastights UCT-endoscope through malignant strictures, and assess their length precisely, if the lumen makes more than 4-5 mm. This technique does not necessitate utilizing X-ray for defining and marking proximal and distal tumor margins.

The guide wire under direct visualisation is left in the stomach, which ensures the safety of the delivery system insertion. We provide UTE through the stent 'waist' immediately after its expansion and assess the distal flange position.

**stenting timing** - A-25min, B-12min,

**X-ray duration (only A)** - 3min,

**technical errors**

**Wrong length of stent** - A 17,5% B-0%;

**necessary of stent reposition immediately after stenting** - A-7,5%; B-0,7%

**Conclusions** UTE-guided SEMS placement without X-ray improves the conditions for precise stent positioning. It provides an opportunity to select stents individually with a minimal risk of complications for a patient and allows to control the stent installation process, which affects the technical success of stenting.

## ePP269 ENDOSCOPIC DILATATION OF OESOPHAGEAL PEPTIC STRICTURES: PREDICTING FACTORS OF REFRACTORY STRICTURES ESOPHAGEAL

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DOI 10.1055/s-0040-1704660

**Aims** The aim of the work is to evaluate the factors predicting the occurrence of refractory oesophageal strictures.

**Methods** This is a 16-year retrospective study between January 2002 and March 2019, including all patients with clinical, endoscopic and/or radiological aspects in favor of peptic strictures of the esophagus. The dilatation was carried out by Savary-Gilliard bougie's with progressive diameters or hydrostatic balloons with variable diameter. Refractory strictures were requiring more than five sessions with short recurrence intervals.

**Results** Of the 123 patients who underwent endoscopic dilatation for peptic strictures of the esophagus, 13% had refractory strictures. The mean age was 53.5 years with predominance of male. The mean number of dilations was 6.25 [5; 11]. In all these patients we noted: chronic gastro esophageal reflux with a mean duration of evolution of 6.75 years [1; 17], regurgitations in 75% and pyrosis in 18.7%. The dysphagia was total in 25%. Endoscopy revealed peptic strictures associated with oesophagitis in 6.25%, hiatal hernia in 37, 5% and Barrett's esophageal in 6.25%. ¾ of our patients were dilated by bougie with progressive diameters. After 5 endoscopic dilations: Only 37.5% underwent surgery, one patient had benefited from esophageal prosthesis and the rest continued the endoscopic management. Refractory strictures was significantly associated with the duration of gastro esophageal reflux ( $p = 0.01$ ) and poor compliance of proton pump inhibitors ( $P = 0.005$ ).

**Conclusions** Refractory peptic strictures of the esophageal were present in 13% in our series. The duration of gastro esophageal reflux and the poor compliance of proton pump inhibitors are strongly associated with the occurrence of refractory peptic strictures of the esophageal.

### ePP270 COMBINED THERAPY IN THE MANAGEMENT OF COMPLEX BENIGN ESOPHAGEAL STRICTURES: FULLY COVERED SELF-EXPANDABLE METALLIC STENTS AND BIODEGRADABLE STENTS

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DOI 10.1055/s-0040-1704661

**Aims** To evaluate the safety and efficacy of fully covered self-expandable esophageal metallic stent (FCSEMS) and biodegradable stent in the management of complex esophageal strictures and postsurgical stenosis.

**Methods** Prospectively data from consecutive patients (May 2016 to April 2019) in a single-tertiary center from Ecuador. Safety was defined in terms on adverse events occurrence in accordance to the ASGE Lexicon. Efficacy was defined as an Atkinson Dysphagia Score (ADSS  $\leq 3$ ) or the ability to swallow liquid content after stent placement.

**Results** 36 patients were treated with esophageal stenting during the study period; however, 11 patients met inclusion criteria and were included for analysis, with a median age of 12 years (range: 5-63), 45% were female. Stents were placed for the management of complex caustic strictures (7/11) and post-surgical stenosis (4/11). The median number of stents placed was 1 (range: 1-5). All patients received a FCSEMS as first stenting therapy. Recurrence of symptoms after stent removal occurred in 5/11 (45%) patient, undergoing a second repeat stenting (3/5 with biodegradable stent and 2/5 with FCSEMS), 4 patients required a third stenting session (3/4 with biodegradable stent and ¼ with FCSEMS), 4 patients a fourth stenting session (2/4 biodegradable stent and 2/4 with FCSEMS) and 3 patients a fifth stenting session (1/3 biodegradable stent and 2/3 with a FCSEMS). The median initial ADSS was 3 (range 2-4). Efficacy: 9/11 (82%) achieved an ADSS  $\leq 2$  during follow-up with a median 1 ADSS after therapy (range: 0-4). Any patient experiences an adverse severe event; however, 5/11 (45%) patients experience stent migration treated with stent removal. The median days of follow-up was 505 days (range: 68-1056).

**Conclusions** Combined therapy with self-expandable esophageal metallic stent and biodegradable esophageal stents is a safe and effective therapy for the management of dysphagia in patient with complex benign esophageal strictures and postsurgical stenosis.

Saturday, April 25, 2020

11:00 – 11:30

ERCP: Chronic pancreatitis

ePoster Podium 2

### ePP272 BILIARY INTERVENTIONS IN PATIENTS WITH STERILE PANCREATIC AND PERIPANCREATIC NECROSIS INCREASE THE RISK FOR INFECTED COLLECTION

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DOI 10.1055/s-0040-1704662

**Aims** It is unclear if antecedent biliary interventions (BI) [ERCP, PHTC] performed for biliary obstruction pose risk of infecting evolving sterile pancreatic and or peripancreatic necrosis (PPN). We sought to determine if BIs increase the risk of infection in PPN patients.

**Methods** All patients with necrotizing pancreatitis in two academic centers (2009-2019) were identified from a prospectively maintained registry. Same admission cholecystectomy patients were excluded. Patients with a sterile necrosis who underwent BIs for biliary obstruction without cholangitis were compared with controls who did not undergo any BIs. Primary outcome of interest was rate of infected PPN post intervention. Analysis was adjusted for age, gender, BMI, AP severity, AP etiology, PPN type and size.

**Results** Among 959 PPN patients, 72 met inclusion criteria for BIs and were compared with 305 controls. On univariate analysis, BI patients were more likely to have index gallstone-AP (34.7% vs. 12.2%;  $p < 0.001$ ) and Post-ERCP AP (19.4% vs 2%;  $p < 0.001$ ). After adjusting for confounders, in multivariate analysis, the latter differences were not significant (table 1), but BIs patients were still 3 times more likely to have idiopathic AP as etiology (aOR 3.2;  $p = 0.037$ ). No differences in PPN type or size were found. BIs patients had 2.4 times higher risk for PPN infection (aOR 2.3;  $p = 0.010$ ), 5 times more likely to require PPN intervention/drainage, 4 times more likely to require a PPN re-intervention after initial drainage. In BIs patients, LOS was almost 2 extra days (20.1 vs 18.8 days;  $P = 0.73$ ). No differences in mortality, ICU requirement and antibiotic duration in both groups (12.4 vs. 11.7 days;  $P = 0.66$ ) were found between the two groups.

**Conclusions** BIs in sterile PPN increase the risk of infecting necrotic collections, leading to higher rates of collection intervention and reintervention. Biliary interventions should be avoided for asymptomatic biliary obstruction in patients with evolving PPN.

### ePP273 ENDOSCOPIC PANCREATIC DUCT STENTING IN MANAGEMENT OF CHRONIC PANCREATITIS

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DOI 10.1055/s-0040-1704663

**Aims** To determine the role of endoscopic treatment of chronic pancreatitis (CP), especially its duct complications (DC).

**Methods** Endoscopic procedures were performed in 133 cases of complicated CP from 1.01.1998 to 1.01.2017. Majority of patients were male (88 (66.2%)), female patients were treated in 45 (33.8%) cases. Mean age was 54.4±12.4 years. Obstructive lesions of main pancreatic duct (MPD) were identified in 65 (48.9%) patients, pancreatic strictures in 42, MPD-stones - in 8, combination of strictures and stones - in 15 cases, defects of MPD were found in 68 (51.1%) cases: pancreatic fistulas (PF) - in 52 patients and pancreatic pseudocysts (PC) in 16 patients.

It was supposed to perform a pancreatic duct stenting (PS) in 114 cases. In cases of PC without communication with MPD transmural stenting alone lead to regression of PC. On the contrary, connection between PC and MPD required a combined approach - transpapillary and transmural stenting.

**Results** PS was successful in 78 cases (68.4%). It was performed in 40 of 65 (61.5%) cases of MPD occlusion, in 34 of 52 (65.4%) cases of PF and in 4 of 5 (80%) - in cases of connection between MPD and PC.

Endoscopic interventions in cases of CP and its DC were final treatment in 75 (56.4%) cases (30 patients with obstruction of the MPD, 45 - with MPD defect). 4 (3%) cases of complications after endoscopic treatment included 2 cases of bleeding, 1 case of perforation, and 1 case of acute pancreatitis. All of complications required only conservative treatment. There were no fatal outcomes in observation.

**Conclusions** Endoscopic treatment of CP and its DC was possible in 68.4%. Endoscopic methods were the final tool in treatment of 46.1% of obstructive MPD lesions and in 66.2% of cases with defects of MPD. Endoscopic treatment guarantees a low level of complications (3%).

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Saturday, April 25, 2020

11:00 – 11:30

Ancillary techniques to enhance tissue diagnosis of pancreatic cancer

ePoster Podium 3

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### ePP274 ELASTOGRAPHY GUIDED FINE NEEDLE VERSUS STANDARD FINE NEEDLE ASPIRATION IN SOLID PANCREATIC LESIONS: A PROSPECTIVE STUDY

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DOI 10.1055/s-0040-1704664

**Aims** To assess if the E-EUS-FNA is superior to standard EUS-FNA in obtaining specific diagnosis in solid pancreatic masses and the factors that can lead to different diagnostic rate.

**Methods** This prospective study in one tertiary medical academic center included patients with the suspicion of pancreatic solid masses on transabdominal ultrasound or CT scan. The first pass was done during elastography assessment into the blue homogenous part of the lesion and the second pass during the standard EUS assessment by using the 22G standard FNA needle EUS-FNA(Expect, Boston Scientific). The visible core was collected and analysed separately. The final diagnosis was based on EUS-FNA or surgical specimen results and on following up for 12 months by imaging methods.

**Results** Fifty-one patients were analysed. The mean age was 64 years old and 74% of them were male. There were 85% head and isthmus pancreatic lesions, and more than 89% were stage T3 and T4. The majority of the lesions were blue homogenous on qualitative elastography assessment. The E-EUS-FNA pass and EUS-FNA had the accuracy of diagnosis of 94% and 91% respectively (p=NS) and the global accuracy of the two passes was 95%. No difference were seen for the results related to the location, size, tumor stage, chronic pancreatitis features or biliary plastic stent.

**Conclusions** The diagnostic rate of core obtained by using 22G FNA needles with standard EUS-FNA and guided E-EUS-FNA did not differ statistically.

### ePP275 COMPARISON OF DIAGNOSTIC GAINS BY NEXT-GENERATION PROFILING, CONVENTIONAL CYTOLOGY AND HISTOLOGY IN PATIENTS WITH LOCALLY ADVANCED PANCREATIC ADENOCARCINOMA FOLLOWING EUS-GUIDED BIOPSY

**Authors** Carrara S<sup>1</sup>, Laghi L<sup>1</sup>, Giulia S<sup>2</sup>, Di Leo M<sup>1</sup>, Lamonaca L<sup>1</sup>, Peano C<sup>1</sup>, Rahal D<sup>1</sup>, Bozzarelli S<sup>1</sup>, Anderloni A<sup>1</sup>, Fugazza A<sup>1</sup>, Auriemma F<sup>3</sup>, Duga S<sup>2</sup>, Repici A<sup>1,2</sup>

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DOI 10.1055/s-0040-1704665

**Aims** Endoscopic ultrasound (EUS)-guided biopsy is the method of choice for obtaining pancreatic tissue for pathological and molecular diagnosis. Next-generation sequencing (NGS) has been applied to EUS-guided biopsies and may select different molecular profiling. Our study aimed to compare side-by-side the diagnostic yield achievable by genetic identification of somatic mutations detected with NSG versus histological and cytological typing in advanced pancreatic carcinoma (LAPC), in samples acquired under EUS-guidance.

**Methods** This was a prospective observational cohort study conducted at Humanitas Research Hospital, registered on ClinicalTrials.gov (NCT03578939). The study included 33 patients referred for naive locally advanced pancreatic adenocarcinoma, who underwent EUS-guided tissue acquisition using a 22G Franseen needle. Material was obtained for both pathological diagnosis and storage in the biobank for DNA extraction and NSG analysis. Twenty-one genes were selected to be prioritized for computational analysis.

**Results** The final diagnosis was pancreatic ductal adenocarcinoma (PDAC) in all patients (100%). A macroscopic core was obtained in 30 patients (91%). In 3 lesions no cores adequate for histological analysis were obtained, but cytological analysis revealed tumoral cells from PDAC. Good quality DNA was extracted from 32 out of 33 samples (97%). Most samples (84%) carried at least two clearly pathogenic mutations in different genes. Detection of KRAS mutation allowed for molecular diagnosis of PDAC in 30/32 patients (93.75%).

**Conclusions** Franseen needles are good for both pathological and molecular diagnosis of PDAC. NGS applied to our sampling reached the best diagnostic gain, overcoming established cytological and pathological readings, if single approaches are considered.

### ePP276 FEASIBILITY AND OPTIMIZATION OF RNA EXTRACTION FROM EUS-ACQUIRED TISSUE IN PANCREATIC CANCER

**Authors** Archibugi L<sup>1</sup>, Testoni SGG<sup>1</sup>, Redegalli M<sup>2</sup>, Petrone MC<sup>1</sup>, Rossi G<sup>1</sup>, Falconi M<sup>3</sup>, Reni M<sup>4</sup>, Doglioni C<sup>2</sup>, Capurso G<sup>1</sup>, Arcidiacono PG<sup>1</sup>

**Institute** 1 San Raffaele Hospital, Pancreatobiliary and Endosonography Unit, Milan, Italy; 2 San Raffaele Hospital, Pathology Unit, Milan, Italy; 3 San Raffaele Hospital, Pancreas Surgery Unit, Milan, Italy; 4 San Raffaele Hospital, Oncology Unit, Milan, Italy

DOI 10.1055/s-0040-1704666

**Aims** Pancreatic cancer (PDAC) is the 2<sup>nd</sup> cause of cancer-related mortality, with transcriptome subtypes related to different prognosis and chemotherapy response.

Nevertheless, RNA extraction from pancreatic tissue is cumbersome for the RNase abundance and is performed mainly on surgical samples, representative of < 20% of cases. On the contrary, the majority of PDAC patients undergo EUS-guided tissue acquisition (EUS-TA), but RNA has been rarely extracted from EUS-TA with scanty results. The aim of our study was to determine the best conditions (needle type and conservation method) for RNA extraction from PDAC patients EUS-TA.

**Methods** PDAC cases underwent diagnostic EUS-TA, with collection of samples for RNA extraction. Needles used were 25G-Slimline(Boston Scientific) and

either 20G-ProCore(Cook Medical) or 25G-Acquire(Boston Scientific); conservation methods were either snap-frozen or RNALater. RNA concentration and quality (RNA Integrity Index; RIN) were analyzed and compared.

**Results** 32 samples from 16 PDAC patients were collected and underwent RNA extraction. Both the mean RNA concentration and RIN were higher in snap-frozen samples vs RNALater (1648 pg/ul vs 984 pg/ul;  $p=0.12$ ), (RIN 5 vs 2.9;  $p=0.001$ ). In 7 samples (32%) stored in RNALater no RNA was retrievable. Among the three tested needles, the highest RNA concentration and RIN were retrieved with 20G-ProCore Needle (4267 pg/ul, RIN 5.4 when snap-frozen; 1177 pg/ul, RIN 4.1 in RNALater). 6 samples underwent q-RT-PCR with technical success=100%.

**Conclusions** This is the first study investigating the best methodology for RNA extraction from EUT-TA, with results suggesting that sufficient amount of good quality RNA is obtainable from EUS-TA samples snap-frozen, with 20G FNB needle seeming superior to smaller needles. The analysis will be extended to more patients and conservation methods and analyses, and to ascertain also the composition and t cellularity through q-RT-PCR or single-cell RNAseq.

Saturday, April 25, 2020

11:00 – 11:30

Endoscopic management of defects in  
GI- endoscopy

ePoster Podium 4

### ePP277V CLOSURE OF AN OESOPHAGO-BRONCHIAL FISTULA BY AMPLATZER PROTHESIS

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DOI 10.1055/s-0040-1704667

The procedure of closing a confirmed oesophago-bronchial fistula (OBF) was performed using a gastroscopie and a bronchoscope in an intubated patient, under air insufflation. The OBF was cannulated using the gastroscopie with a cap. The Amplatzer Vascular Plug II 14 mm has been placed under double endoscopic control. Both extremities were released, under endoscopic control, successively in the trachea and in the esophagus. No adverse effects were identified. Since the procedure, the patient has had no new episodes of inhalation pneumopathy or cough. The opacification scanner confirmed the absence of reopening of the OBF and allowed a normal oral diet.

### ePP278V OVER-THE-SCOPE CLIP FOR THE TREATMENT OF A BILIARY STENT-INDUCED DUODENAL PERFORATION

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DOI 10.1055/s-0040-1704668

Duodenal perforation due to distal migration of plastic biliary stents is a rare ERCP complication. Endoscopic treatment options include through-the-scope and over-the-scope clips (OTSC). Surgery may be recommended, especially in cases of late (> 12 h) diagnosis or when there is contrast extravasation or intra-abdominal fluid collection. However, successful perforation closure using clips has been reported even in cases of late diagnosis. Herein, we demonstrate the successful application of a 12-mm OTSC (OVESCO, Tubingen, Germany) to treat a duodenal perforation. OTSC was applied late (> 12 h) and despite its technical success, patient's medical condition necessitated further surgical management (laparoscopy and peritoneal lavage).

### ePP279 V ENDOSCOPIC SIGMOIDORECTAL ANASTOMOSIS: AN EFFECTIVE NOVEL APPROACH TO RESTORING THE CONTINUITY OF THE DIGESTIVE TRACT USING A HOT AXIOS STENT

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DOI 10.1055/s-0040-1704669

We present an endoscopic rendez-vous approach with Hot Axios Stent for restoring the continuity of the digestive tract by creating a sigmoidorectal anastomosis. Surgical treatment impossible due to massive postoperative adhesions after anterior rectal resection, complicated by dehiscence of anastomosis managed by a double-barreled ileostomy. Rectal stump was reached simultaneously through the anus (EUS) and ileostomy (enteroscope). 200 ml of saline was injected into the stump through enteroscope for visualization in EUS. The stent was then deployed under EUS and fluoroscopy guidance followed by balloon dilatation (15 mm). Stent removal and ileostomy closure after 4 weeks. At 12th week stable anastomosis.

Saturday, April 25, 2020

11:00 – 11:30

IBD 1

ePoster Podium 5

### ePP280V CROHN'S DISEASE PRESENTING WITH SUBACUTE INTESTINAL OBSTRUCTION

**Authors** Zaghoul M<sup>1</sup>, Emara M<sup>1</sup>, Albateh H<sup>1</sup>, Amer I<sup>1</sup>, Mahrous A<sup>1</sup>, Ahmed M<sup>1</sup>

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DOI 10.1055/s-0040-1704670

Here we report a 35 years old male patient with bilateral lower limb vasculitis like rash, colicky abdominal pain, vomiting, and abdominal distension. the patient was diagnosed with subacute intestinal obstruction and managed conservatively. Ultrasound wasn't able to point out the cause of obstruction. CT scan showed multiple jejunal and ileal mural wall thickening. Colonoscopy was used to reach proximal jejunal loops that showed skip erythematous patches with shallow ulcers that was sampled. Pan colonoscopy was unremarkable. Ileal cannulation showed free distal terminal ileum, but with deep annulation marked ileal ulcers appeared with multiple aphthous ulcers. Histopathology revealed Crohn's disease.

### ePP281V FIBROTIC ANORECTAL STRICTURE COMPLICATING CROHN'S DISEASE IN A YOUNG WOMAN TREATED WITH BALLOON DILATION

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DOI 10.1055/s-0040-1704671

Anorectal stricture is a serious complication associated with Crohn's disease. Strictures are usually inflammatory (S1) or fibrotic (S2). There is no specific antifibrotic therapy. Bowel resection or stricturoplasty were the preferred treatment approach with serious adverse events occurring after operation. Today, a variety of endoscopic approaches for the treatment of strictures are being used such as balloon or bougies dilation with local steroid injection and needle-knife stricturotomy. We present a video case report of a 30-year-old

woman with S2 anorectal stricture, treated with balloon dilation with long lasting effect after four procedures without early or late complications.

## ePP282 IBD SURVEILLANCE ACROSS IRELAND; DYE-ING TO KNOW WHAT YOU DO

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**DOI** 10.1055/s-0040-1704672

**Aims** Establish current practice with regards to surveillance and the use of dye spray chromoendoscopy in the Irish IBD cohort.

**Methods** A survey was distributed to gastroenterology consultants and registrars working in Ireland.

Routine practice surrounding IBD surveillance, use of guidelines, performance of biopsies and use of chromoendoscopy was established.

**Results** Among the 49 respondents; 60% were male and 52% were consultant gastroenterologists.

Sixty percent had less than 10 years endoscopy experience, whereas 32.5% had 11–25 years.

Responses were identified from 15 hospital sites from secondary and tertiary referral centres across the east, west and north of Ireland.

For 49%, greater than 50% of their practice involved IBD. Among respondents, 71% typically surveil IBD patients (where appropriate).

During surveillance colonoscopy, 86% perform random biopsies whereas 14% don't.

The majority (57%) perform segmental biopsies; 30% serial biopsies every 10 cm and 13% right and left biopsies.

Ninety three percent perform targeted biopsies, typically when a visible mucosal abnormality or suspicious lesion is seen.

The majority (69%) follow ECCO guidelines, with 29% following the BSG and only 2% follow AGA. No respondents followed ASGE.

Twenty seven percent use white light endoscopy alone whereas 60% (n = 27) occasionally or sometimes do.

Only 5% always perform chromoendoscopy; 44% never do.

Solutions used for chromoendoscopy varied but the majority at 36% (n = 15) use indo-carmin 0.2%, however a large number of respondents were unsure of the concentration.

**Conclusions** Currently IBD surveillance in Ireland varies in practice. Improved education may enhance incorporation of guidelines into standard of care.

Saturday, April 25, 2020

11:00 – 11:30

Upper GI: Endoscopic diagnosis 3

ePoster Podium 6

## ePP283 DIAGNOSTIC ACCURACY OF ENDOFASTER IN DETECTION OF H. PYLORI INFECTION COMPARED TO GOLD STANDARD BIOPSY IN ROUTINE ENDOSCOPY

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**DOI** 10.1055/s-0040-1704673

**Aims** H. pylori (HP) infection remains a major risk factor for gastric cancer.

Biopsy is the gold standard diagnosis. Nevertheless, it is invasive and cost-consuming.

Hence, a novel diagnostic tool named EndoFaster-EF, by NISO Biomed, has been tested for diagnosis of HP and hypochlorhydria based on detection of ammonium and pH levels in gastric-juice in real-time during endoscopy.

**Primary aim:** to evaluate EF accuracy in diagnosis of HP infection vs gold-standard biopsy.

**Secondary aims:** EF feasibility; correlation between pH levels and histological atrophy/Intestinal Metaplasia (IM); cut in terms of biopsies potentially avoidable using EF.

**Methods** A consecutive series of 220 patients referred to undergo OGD was prospectively enrolled in a single Center.

During endoscopy, a Gastric-Juice-Analysis (GJA) on the aspirate was performed using EF.

HP was considered present for ammonium concentration  $\geq 74$  ppm.

Three groups of pts were identified based on pH levels: Group 1 (pH  $\leq 3$ ), Group 2 (hypochlorhydric:  $3 < \text{pH} < 4.5$ ) and Group 3 (severely hypochlorhydric:  $\geq 4.5$ ).

Updated Sydney System biopsy sampling was performed in all patients.

Additional targeted biopsies were performed if visible lesions were found.

EF accuracy in HP detection was calculated.

Correlation between pH and atrophy/IM was evaluated in patients not taking PPI in the previous 2 weeks.

**Results** 204/220 patients underwent a complete analysis (histology-HIS and GJA).

28 patients resulted EF + HIS +, 17 EF + HIS -, 5 EF-HIS +, and 154 EF-HIS -.

EF Sensitivity, specificity, PPV and NPV in HP detection were 85%, 90%, 62% and 97% respectively, accuracy being equal to 89% (p < 0.000001, CI 95%).

EF feasibility was 93%.

Of 111 PPI-off patients, atrophy was found in 12.6% of patients of Group 1 (n = 103; 92.8%), in 50% of patients of Group 2 (n = 2; 1.8%) and 66% of patients of Group 3 (n = 6; 5.4%).

Overall, biopsy sampling would have been avoided in 146/204 patients, with a cut of biopsies of 71.5% and 77.9% applying EF for detection of precancerous lesions and HP infection, respectively.

**Conclusions** EF resulted feasible and accurate in excluding HP infection (97% NPV), may select patients not deserving biopsy sampling, thus reducing useless biopsies.

## ePP284 DETECTION OF HIATAL HERNIAS: COMPARISON OF UPPER ENDOSCOPY AND HIGH-RESOLUTION MANOMETRY

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**DOI** 10.1055/s-0040-1704674

**Aims** The diagnosis of a hiatal hernia (HH) can be made by contrast enhanced X-ray examination and upper endoscopy. Data regarding the ability of high-resolution manometry (HRM) to identify HH remains limited. The aim of this study was to compare the diagnostic value of upper endoscopy and HRM in HH detection.

**Methods** 105 patients (56 women, age 18–84 years) with typical symptoms of gastroesophageal reflux disease (GERD) were evaluated using upper endoscopy and HRM. Endoscopic size of HH was measured between the distal margin of the esophageal palisade vessels and the diaphragm hiatus. Manometrical length of HH detected between the lower margin of the lower esophageal sphincter (LES) and pressure inversion point (PIP).

**Results** Upper endoscopy revealed HH in 90 (85.7%) GERD patients, which were subdivided in 3 groups (depending on endoscopic HH size). Group I (the maximum HH length is 4–6 cm) included 21 (20%) patients. Group II (the maximum HH length is 2–3.9 cm) 46 (43.8%) patients. Group III (0.5–1.9 cm) – 38 (36.2%). HRM detected separation between the LES and PIP only in 47 patients (44.7%). Moreover HH ( $\geq 2$  cm separation between the LES and PIP) [1] was confirmed just in 22 (20.9%) patients.

**Conclusions** Endoscopic detection of HH is not consistent with esophageal manometric diagnosis. Using upper endoscopy as the only diagnostic tool may lead to overdiagnosis. HRM is the more accurate and specific test for detecting HH than upper endoscopy.

## ePP285 SECOND-GENERATION MAGNETICALLY CONTROLLED CAPSULE GASTROSCOPY FOR BETTER DIAGNOSIS OF UPPER GASTROINTESTINAL TRACT: A RANDOMIZED CONTROLLED CLINICAL TRIAL

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DOI 10.1055/s-0040-1704675

**Aims** Compared to conventional endoscopy, magnetically controlled capsule gastroscopy (MCCG) can be further optimized in gastric examination time and complete visualization of upper gastrointestinal (UGI) mucosa. The second-generation MCCG (MCCG-2) was developed with higher image resolution and adaptive frame rate, and we aimed to evaluate its clinical availability for UGI examination in this study.

**Methods** Consecutive patients undergoing MCCG examination between May to June 2019 were prospectively enrolled and randomized to swallow the first-generation MCCG (MCCG-1) or MCCG-2 in a 1:1 ratio. The main outcomes included visualization of the esophagus and duodenum, operation related parameters, image quality, maneuverability, detection of lesions, as well as safety evaluation.

**Results** Eighty patients were enrolled. In MCCG-2 group, frames captured for esophageal mucosa and Z-line were 171.00 and 2.00, significantly increased from those in MCCG-1 group with 97.00 and 0.00 ( $P = 0.002$  and  $0.028$ ). The gastric examination time was shortened from  $7.78 \pm 0.97$  min to  $5.27 \pm 0.74$  min ( $P < 0.001$ ), with the total running time of capsule extended from 702.83 min to 1001.99 min ( $P < 0.001$ ). MCCG-2 also greatly improved the image quality ( $P < 0.001$ ) and maneuverability ( $P < 0.01$ ). No statistical difference existed in the detection of lesions between the two groups, and no adverse events occurred.

**Conclusions** MCCG-2 showed better performance in mucosal visualization, examination duration and maneuverability, making better diagnosis of UGI diseases a possibility.

Saturday, April 25, 2020

Rare diseases 1

11:00 – 11:30

ePoster Podium 7

## ePP286 THINK ABOUT KLIPPEL-TRENAUNAY SYNDROME IN RECURRENT RECTAL BLEEDING PRESENTATION – CASE REPORT

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DOI 10.1055/s-0040-1704676

**Aims** The aim of this paper was to draw attention to the possible rare causes of recurrent rectal bleeding.

**Methods** Case report.

**Results** A 67-year old woman presented to the emergency department with fatigue and rectal bleeding. She reported repeated rectal bleeding and blood transfusions during the lifetime. A physical examination marked port-wine stain covering on the right gluteus. The right leg was also larger in girth than her left leg and was covered with varicosities, digital rectal examination showed fresh blood. The initial laboratory yielded microcytic anemia (hemoglobin 49 g/L and MCV 74,1 fl). Colonoscopy revealed submucosal varicose veins from the sigmoid colon to the rectum. Besides that, a contrast abdominal CT scan showed enlarged venous vessels in the basin of the right common iliac

vein, that were around the urinary bladder, rectum, uterus, and vagina, which had tortuous flow and multitude of phleboliths. It also presented venous plexus in the right gluteal region in terms of subcutaneous varicosity. There was no presence of AV communications. The third day of hospitalization patient was presented with the dyspnea and high levels of D-dimer. Contrast chest CT scan was significant for bilateral segmental pulmonary embolism, Doppler ultrasonography was significant for unorganized thrombus masses in the distal part of the right superficial femoral vein and the right popliteal vein.

**Conclusions** Klippel-Trenaunay syndrome (KTS) is a rare congenital condition of unknown etiology. Clinical presentation may vary from being asymptomatic to developing potentially life-threatening complications, such as deep vein thrombosis (DVT), pulmonary embolism (PE), and recurrent bleeding. In our case KTS occurs in less common presentation; in an older patient, with recurrent rectal bleeding, together with PE and unfortunately with lethal outcome one month after admission.

## ePP287 PLASMABLASTIC PLASMACYTOMA OF THE RECTUM AND ANAL CANAL IN PATIENT WITH ULCERATIVE COLITIS

**Authors** Jankovic Katarina<sup>1</sup>, Rajic Sanja<sup>1</sup>, Lalošević Milica Stojkovic<sup>1</sup>, Dragasevic Sanja<sup>1</sup>, Lukic Snezana<sup>1</sup>, Djuranovic Srdjan<sup>1</sup>, Jovanovic Ivan<sup>1</sup>

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DOI 10.1055/s-0040-1704677

**Aims** Plasma cell tumor is a B-cell line immunoproliferative monoclonal disease. It rarely occurs in the gastrointestinal tract (GI). Our aim was to present a case of a patient with a prior history of ulcerative colitis (UC). Given its clinical presentation upon admission, the patient could easily be mistaken for disease relapse indicating the need for endoscopy along with further evaluation to establish a correct diagnosis and therefore appropriate treatment.

**Methods** An 88-year-old male patient was admitted to the Department for Gastroenterology for signs and symptoms suggestive of disease relapse. He was diagnosed with ulcerative colitis localized in rectosigmoid 5 years before. He reported diarrhea (approximately) 10 bowel movements/day, fecal incontinence, abdominal and backpain, weakness and weight loss. Examination revealed cachexia, tachycardia, and abdominal tenderness. We performed colonoscopy with standard tissue biopsies and immunohistochemistry which concluded extremely rare finding.

**Results** Colonoscopy was performed, revealing tumor-like, whitish and hard on biopsies mass located in the proximal part of the anal canal, rectum and rectosigmoid junction. Standard histopathology examination was suggestive of immunoproliferative disease requiring further evaluation. Immunohistochemistry revealed CD38 +, kappa +, lambda -, MUM-1 +, EBV-LMP -, CD20-, CD138-, Ki 67 + in 60% positive cells indicating plasmablastic plasmacytoma. His performance status rendered him from receiving further oncological therapy. His condition progressively worsened and he died one month after the diagnosis was established.

**Conclusions** Extramedullary plasmacytoma rarely affects GI tract and its occurrence in patients with UC has never been reported. Its existence could be sui generis or perhaps complicating long-standing history of inflammatory bowel disease. Nevertheless, clinicians should be aware of this rare entity even in patients with confirmed previous diagnosis affecting anorectum.

## ePP288 ENDOSCOPIC DIAGNOSIS OF HUMAN INTESTINAL SPIROCHETOSIS: A CASE SERIES

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DOI 10.1055/s-0040-1704678

**Aims:** Human intestinal spirochetosis (HIS) is defined by the presence of a layer of spirochetes attached by one end of the cell to the colorectal epithelium. *Brachyspira pilosicoli* and *Brachyspira aalborgi* are the etiologic agents of HIS. While many patients with HIS have no symptoms, some have symptoms such as chronic diarrhea and bloody stool. There is little known about pathogenicity of HIS, and awareness is still low. We investigated the characteristics of patients treated for HIS.

**Methods:** We retrospectively reviewed the clinicopathological features of 71 patients with HIS seen from January 2008 to December 2018. HIS was diagnosed in all patients by colonoscopic biopsy.

**Results:** There were 59 males and 12 females with an average age of 58 (30 ~ 79) years. There were no symptoms in 44 patients, and 27 had symptoms. The most common symptom was diarrhea. There were various endoscopic findings including normal mucosa, erythema, erosions, ulcers and intestinal spirochetes attached to a polyp. Bacterial cultures were performed in some cases. *B. pilosicoli* was identified and isolated in five patients and *B. aalborgi* in six. Drug susceptibility was performed using the E-test. Organisms were sensitive to metronidazole and tetracycline. Eradication therapy using metronidazole was given to 29 patients. Nine patients with no symptoms and other gastrointestinal diseases were excluded. Symptoms improved in 15/20 patients.

**Conclusions:** In this study, HIS has no characteristic endoscopic features. Not all patients with HIS have symptoms. However, in patients with symptoms, eradication therapy was effective. If there are no other causes of gastrointestinal symptoms, symptomatic patients with HIS should undergo eradication. We think that asymptomatic patients do not need treatment.

Saturday, April 25, 2020  
IBD 2

11:00–11:30  
ePoster Podium 8

### ePP289V UNEXPECTED FINDING DURING CROHN'S DISEASE FOLLOW-UP

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DOI 10.1055/s-0040-1704678

A 66 year-old caucasian male with gastric, ileal, pancolonic and rectal Crohn's disease diagnosed on July 2017, in treatment with Infliximab, underwent CT-enterography to evaluate intestinal inflammation on September 2019. CT-enterography showed a 4 cm hypodense mass in pancreatic body invading stomach and in contact with splenic vessels and two liver metastases, unrevealed 6 months earlier with CT-scan. Contrast-Enhanced-EUS was performed showing irregular mass perfusion. Sampling was obtained with EUS-FNB. Histology revealed a pancreatic squamous cell carcinoma. Gemcitabine + oxaliplatin regimen was started. This tumour has never been reported in literature in patients with Crohn's disease treated with Infliximab.

### ePP290 ISOLATED TERMINAL ILEITIS – WHEN CAPSULE ENDOSCOPY IS KEY FOR CROHN'S DISEASE DIAGNOSIS

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DOI 10.1055/s-0040-1704680

**Aims** Terminal ileitis (TI) is a common condition in clinical practice and may be associated with a wide variety of diseases, mostly Crohn's disease (CD). Data regarding predictors of CD diagnosis in isolated TI are lacking, particularly concerning small bowel capsule endoscopy (SBCE) findings.

**Aim** To evaluate predictive factors for CD diagnosis in patients with isolated TI detected during ileocolonoscopy, submitted to SBCE.

**Methods** Retrospective study including consecutive patients undergoing SBCE after diagnosis of TI without colonic mucosal abnormalities on ileocolonoscopy between January 2016 and September 2019. Demographic, clinical, biochemical, endoscopic and imaging data were collected. The diagnosis of CD was based on clinical evaluation, endoscopic, histological, radiological, and/or biochemical investigations.

**Results** One hundred and two patients with isolated ileitis on ileocolonoscopy were included. After performing SBCE, 34.3% of the patients had a diagnosis of CD. All CD diagnosed patients had positive SBCE findings. Extraintestinal manifestations ( $p = 0.003$ ), weight loss ( $p = 0.01$ ), abnormal imaging ( $p = 0.04$ ) and positive SBCE findings ( $p = 0.005$ ) were independently associated with CD diagnosis. Regarding SBCE, presence of proximal small-bowel disease ( $p = 0.02$ ), diffuse findings ( $p = 0.002$ ) and presence of moderate to severe inflammatory activity (Lewis Score  $\geq 790$ ) ( $p < 0.001$ ) were independently associated with CD diagnosis.

**Conclusions** SBCE is a valuable tool that should be systematically used in patients presenting with isolated TI, since it enabled CD diagnosis in approximately one-third of patients. A diagnosis of CD should be considered when a patient with TI shows extraintestinal manifestations, weight loss, abnormal imaging and positive SBCE findings, especially proximal involvement, diffuse findings and the presence of moderate to severe inflammatory activity.

### ePP291 RAMAN SPECTROSCOPY CAN DIFFERENTIATE MUCOSAL HEALING FROM NON-HEALING IN INFLAMMATORY BOWEL DISEASE

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DOI 10.1055/s-0040-1704681

**Aims** Mucosal healing is a key treatment target in IBD, and is defined in terms of mucosal and vascular architecture by the recent PICaSSO score. Despite endoscopic evidence of healing, patients still experience early relapse. Raman Spectroscopy describes the scattering of inelastic light giving spectra that is highly specific for individual molecules. Our aim was to establish if Raman Spectroscopy can differentiate between inflammation and mucosal healing.

**Methods** Biopsies were taken for ex vivo Raman Spectroscopy analysis alongside biopsies for histological analysis from IBD patients undergoing optical diagnosis endoscopic assessment. Mucosal healing was defined in UC as PICaSSO  $\leq 8$ , UCEIS  $\leq 1$  and RHI  $\leq 3$ . Healing in Crohn's was defined as SES-CD  $\leq 4$  and modified Riley 0.

We used artificial neural networks (Self-organising Maps) and supervised learning model to demonstrate spectral differences and build predictive modelling.

**Results** A total of 62 patients (31 UC 31 CD) were included. Spectral differences are seen between healing and non-healing (table 1). The trained neural network can differentiate mucosal healing from non-healing with a sensitivity, specificity, PPV, NPV and accuracy in UC of 94.8% (95%CI 90.4-97.6), 91.9% (95%CI 87.1-95.4), 91.7% (95%CI 87.1-94.7), 95.0% (95%CI 90.9-97.3) and 93.3% (95%CI 90.2-95.7) and 92.6% (95%CI 85.9-96.8), 68.3% (95%CI 62.1-

► **Tab. 1** Intensity of Raman Shifts seen in mucosal healing vs non-mucosal healing in UC and CD.

Raman Shift (cm-1)	Mucosal healing UC (Intensity)	Non-healing UC (Intensity) Cross-validation 0.94	Mucosal healing CD (Intensity)	Non-healing CD (Intensity) Cross-validation 0.86
1001	2.07	2.77	1.96	3.42
1249	0.77	1.23	1.04	1.35
1449	2.76	3.35	2.55	3.83
1656	1.35	1.50	0.91	2.04

74.0), 55.6% (95%CI 50.9-60.2), 95.6% (95%CI 91.7-97.7) and 75.6% (95%CI 70.9-80.0) in CD respectively.

**Conclusions** We have demonstrated that Raman Spectroscopy can accurately differentiate mucosal healing from non-healing in UC and CD and might be a future tool to direct IBD management.

Saturday, April 25, 2020

Upper GI strictures

11:30 – 12:00

ePoster Podium 1

### ePP292 RADIATION DOSE IS NOT ASSOCIATED WITH THE SEVERITY OF ANASTOMOTIC STENOSIS AFTER NEOADJUVANT CHEMORADIOTHERAPY AND SURGICAL RESECTION IN ESOPHAGEAL AND GASTROESOPHAGEAL JUNCTION CARCINOMA

**Authors** Verheij FS, Stam B, Voncken FEM, Koemans W, van der Kaaij RT, Verbeek WHM, Hartemink KJ, Cats A, Veenhof AAFA, van Sandick JW, van Leerdam Monique E, van Dieren JM, de Wijkerslooth TR

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**DOI** 10.1055/s-0040-1704682

**Aims** In the Netherlands, neoadjuvant chemoradiotherapy (nCRT) has become standard treatment for non-metastatic resectable esophageal cancer as it increases survival compared to surgery alone. Stenosis of the cervical anastomosis is a common postoperative complication after gastric tube reconstruction requiring endoscopic dilations. We hypothesized that radiation dose on the future anastomotic region (FAR) was related to the occurrence and severity of the anastomotic stenosis. We evaluated the incidence of stenosis and analyzed risk factors associated with severity of the stenosis.

**Methods** We performed a retrospective cohort study of all consecutive patients with esophageal or gastroesophageal junction carcinoma who underwent nCRT and esophageal resection with cervical anastomosis between 2010 and 2018. Severity of the stenosis was defined as number of dilations needed. Multivariable logistic regression analysis was used to identify patient and treatment related risk factors suspected to be associated with the severity of the anastomotic stenosis. The FAR was contoured in an average anatomy and

deformed onto each individual CT-scan to extract the radiation dose on the FAR.

**Results** Among 192 patients, 180 patients (94%) developed a stenosis requiring at least one endoscopic dilation and 34 patients (18%) had radiologic and/or clinical anastomotic leakage. The median number of dilations in these 180 patients was 6 (IQR 2 to 11 dilations). In the multivariable analysis anastomotic leakage ( $p=0.02$ ), T2/T3-stage (versus T4,  $p<0.01$ ), adenocarcinoma (versus squamous cell carcinoma,  $p=0.02$ ) and midesophageal tumor location (versus distal/junctional,  $p<0.05$ ) were significantly associated with a higher number of dilations. The radiation dose on the FAR did not influence severity of stenosis.

**Conclusions** In our cohort almost all patients developed an anastomotic stenosis requiring endoscopic dilation. Amongst all, anastomotic leakage was significantly associated with the severity of the stenosis whereas radiation dose was not. Prevention of anastomotic leakage seems important to lower the burden of a stenotic cervical anastomosis.

### ePP293 MANAGEMENT OF STRICTURES AFTER ENDOSCOPIC RESECTION FOR EARLY ESOPHAGEAL NEOPLASIA

**Authors** Ali EA, Belle A, Leblanc S, Dermine S, Palmieri Lola-Ja, Dhooge M, Prat F, Coriat R, Chaussade S, Barret M

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**DOI** 10.1055/s-0040-1704683

**Aims** Most available data on the management of post endoscopic resection strictures involve Japanese patients. Our study aims to describe the management of post endoscopic esophageal strictures following endoscopic submucosal dissection (ESD) or mucosal resection (EMR) for early esophageal cancers at a Western center.

**Methods** Consecutive patients with endoscopic resection (ESD or EMR) for early esophageal cancer followed by endoscopic dilatation between January 2010 and September 2019 were identified from a prospectively maintained database including all therapeutic endoscopy procedures at our tertiary referral center. The demographic, endoscopic and histological characteristics of these patients were collected, as well as treatment outcomes.

**Results** During the study period, 161 EMR and 248 ESD were performed for early esophageal neoplasms. Among these 409 procedures, 32 (7.8%) patients developed esophageal strictures requiring endoscopic treatment: 7/161 after EMR (4.3%) and 25/248 (10.1%) after ESD. The mean age of patients was  $66 \pm 10$  years. The indication for endoscopic resection was Barrett's neoplasia in 15/32 cases (46.9%) and squamous cell neoplasia in 17/32 cases (53.1%). The median length of hospital stay after endoscopic resection was one day ( $\pm 0.9$ ) and no severe adverse event was reported. The mean circumferential extent of the lesion was  $63 \pm 30\%$ , while the resection wound was  $90 \pm 10\%$  of the esophageal circumference. The median number of esophageal dilatation for post-resection stricture was 3 sessions ( $\pm 3$ ). 19% (6/32) patients only requested 1 dilatation. Finally, the endoscopic dilatations allowed after a mean  $23.1 \pm 20$  months follow-up (after the first dilatation)

a prolonged relief in dysphagia in 29/32 (90.6%) patients.

**Conclusions** Esophageal stricture after endoscopic resection for early neoplasia was an uncommon adverse event in our experience. After a median of 3 endoscopic dilatations, 90.6% of patients were permanently relieved of dysphagia. Effective preventive treatments for post-endoscopic esophageal stricture remain to be identified.

### ePP295 EFFICACY OF ENTEROSCOPY-ASSISTED ERCP IN LIVER TRANSPLANT PATIENTS WITH ROUX-EN-Y RECONSTRUCTION AND SUSPECTED BILE DUCT PATHOLOGY

**Authors** Moreels T<sup>1</sup>, Deprez P<sup>1</sup>, Dahlqvist G<sup>1</sup>, Delire B<sup>1</sup>, Coubeau L<sup>2</sup>, Ciccarelli O<sup>2</sup>, Riani EB<sup>2</sup>, Goffette P<sup>3</sup>, Sokal E<sup>4</sup>, Piessevaux H<sup>1</sup>

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DOI 10.1055/s-0040-1704684

**Aims** Feasibility of enteroscopy-assisted ERCP to evaluate/treat biliary complications in liver transplant patients with Roux-en-Y reconstruction.

**Methods** Between 2016 and 2019 enteroscopy-assisted ERCP procedures in liver transplant patients were analysed for indications, technical and clinical success and complications. ERCP was performed using 4 types of single-balloon enteroscopes (SBE).

**Results** 32 patients (25 males), mean age 42 ± 3y (range 16–81), underwent 51 enteroscopy-assisted ERCP procedures. Indications: suspicion anastomotic stricture (53%), cholangitis (31%), bile duct stones (10%), biliary leak (3%), sepsis (3%). Technical ERCP success rate per patient was 81.25% (26/32), with failure to reach the hepaticojejunal anastomosis in others. ERCP was normal in 10/26 (39%), confirmed the anastomotic stricture in 9/26 (35%), bile duct stones in 5/26 (19%) and biliary leak and indwelling metallic stent both in 1/26 (4%). Biliary interventions: balloon dilatation (6–9 mm), plastic stent insertion (4–7 Fr), stone extraction, bile duct biopsy and direct cholangioscopy in 1–6 ERCP procedures per patient (median 1). Minor adverse events (cholangitis) were seen in 4/32 (12,5%). Of all 51 ERCPs, 49% were easy, 27% were difficult or very difficult (8%) and 17% impossible. Technical success rate was highest with prototype XSIF-180JY SBE (100% for 14 procedures) and lowest with conventional SIF-Q180 SBE (50% for 6 procedures). Clinical success measured by biliary liver function tests: before start of ERCP, 1 day after and 30 days after last ERCP, with a significant decrease in gamma-GT serum levels (345 ± 90 U/L before, 257 ± 73 U/L after and 146 ± 27 U/L after 30 days, p = 0.023) and alkaline phosphatase levels (337 ± 70 U/L before, 343 ± 89 U/L after and 198 ± 53 U/L after 30 days, p = 0.044).

**Conclusions** Biliary endoscopic evaluation is feasible and safe using enteroscopy-assisted ERCP in liver transplant patients with Roux-en-Y reconstruction, allowing close inspection of hepaticojejunostomy and intrahepatic bile ducts. Endoscopic therapy leads to clinical improvement of liver function tests.

### ePP296 THE EFFICACY AND SAFETY OF ENDOSCOPIC TRANS-PAPILLARY GALLBLADDER STENTING TO REPLACE PERCUTANEOUS CHOLECYSTOSTOMY IN POOR SURGICAL CANDIDATES

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DOI 10.1055/s-0040-1704685

**Aims** Endoscopic trans-papillary gallbladder stenting (ETGBS) is a useful alternative to percutaneous cholecystostomy (PC) in patients with acute cholecystitis when cholecystectomy must be delayed or cannot be performed.

However, there are few data on the efficacy and safety of ETGBS replacement of PC in patients unfit for cholecystectomy.

**Methods** This single center retrospective study reviewed data of patients who attempted underwent ETGBS to replace PC between January 2017 and September 2019. Technical success, clinical success, adverse events, and stent patency were evaluated.

**Results** ETGBS was performed in 43 patients (24 men, mean age 80.7 ± 7.5 years) to replace PC due to high surgical risk. The technical success rate and clinical success rate was 97.6% (42/43) and 92.8% (39/42), respectively. There were three adverse events, post endoscopic retrograde cholangiography related acute pancreatitis in two cases and hematoma around cystic duct in one case. PC was removed after ETGBS in 40 patients at a median of 11.5 days (range, 1–73 days). Median stent patency was 362.5 days (Interquartile range 160.5–483.5 days).

**Conclusions** ETGBS as a secondary intervention for the purpose of internalizing gallbladder drainage in patients following placement of a PC is safe and effective, and technically feasible. Thus, switching to ETGBS may be considered as viable option in high surgical risk patient with PC.

### ePP297 ENDOBILIARY RADIOFREQUENCY ABLATION FOR REFRACTORY BENIGN STRICTURE: AN EUROPEAN PILOT STUDY

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DOI 10.1055/s-0040-1704686

**Aims** Endoscopic treatment of benign biliary stricture (BBS) remains challenging with 15% of recurrence after metallic or multiple plastic stenting. We experimented endobiliary radiofrequency ablation (ERFA) with the aim to eradicate biliary fibroplasia endoscopically. We report our first experience of ERFA in the management of refractory BBS.

**Methods** 10 patients with BBS (7 postoperative strictures, 2 chronic inflammatory strictures and 1 post stenting stricture) were treated from August 2014 to August 2019. All had previously unsuccessful endoscopic treatment with dilatations (1,75 [0–3]) and plastic or metallic stenting during a median of 18 months (9–48). Bipolar ERFA was delivered at power of 10 W for 90 seconds per stricture segment, followed by a 10 mm balloon dilatation without stent placement. Data were collected on technical success (ERFA delivery), clinical success (stricture resolution), adverse events and follow-up.

**Results** ERFA was performed in 10 patients (9 men) with a median age of 58 years (range 20–81). All patients had stricture resolution after ERFA. No severe adverse event occurred with only a case of short abdominal mild pain. The median follow-up is 34 months.

BBS resolution without the need for further stenting was achieved in 8 patients. The 2 patients with inflammatory stricture had BBS relapse after initial resolution at 10 and 12 months, one underwent surgery, the other metallic stenting for 9 months with no further relapse at 2 years.

**Conclusions** ERFA appears to be a safe and effective treatment for refractory BBS, especially for postoperative strictures. Further studies are warranted.

Saturday, April 25, 2020  
Pancreatic cancer diagnosis

11:30 – 12:00  
ePoster Podium 3

### ePP298 PROGNOSIS AND CLINICAL CHARACTERISTICS OF PANCREATIC CANCER PATIENTS DIAGNOSED WITH ENDOSCOPIC ULTRASOUND BUT INDETERMINATE ON CT: A MULTI-CENTER RETROSPECTIVE COHORT STUDY

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DOI 10.1055/s-0040-1704687

**Aims** Endoscopic ultrasound (EUS) has a high resolution and has shown its superiority to CT in the diagnosis of small pancreatic cancer. As a result, the role of EUS in the early detection of pancreatic cancer is attracting attention. The purpose of this study was to identify clinical and radiological characteristics of pancreatic cancer patients diagnosed with EUS but not found on CT.

**Methods** From January 2003 to April 2019, we had reviewed medical records of patients diagnosed with pancreatic cancer in 11 tertiary referral centers in Korea. The patients who's pancreatic mass were not clearly seen on CT but identified in EUS were included in this study.

We analyzed clinical characteristics and radiological features of enrolled patients, and survival analysis was performed using the Kaplan-Meier method.

**Results** A total of 83 patients were enrolled. All of them underwent EUS and tumors were identified in all cases. Mean age was 64.1 ( $\pm$  10.9) years old, 46 patients (55.4%) were male. The abnormal CT findings were as follows: main pancreatic duct dilatation ( $n$  = 61, 73.5%), double-duct sign ( $n$  = 10, 12%), common bile duct dilatation ( $n$  = 9, 10.8%), splenic infarction ( $n$  = 1, 1.2%), pancreatitis ( $n$  = 1, 1.2%). Mean size of pancreatic tumor was 15.2 mm ( $\pm$  4.8), and 90.4% was smaller than 2.0 cm. All but 4 patient underwent surgery. The final pathologic stages were as follows: stage IA ( $n$  = 31, 39.2%), stage IB ( $n$  = 8, 10.1%), stage IIA ( $n$  = 20, 25.3%), stage IIB ( $n$  = 17, 21.5%), stage III ( $n$  = 2, 2.5%), Stage IV ( $n$  = 1, 1.4%). The median follow-up duration was 22.7 months (IQR 13.1–52.8).

The 5-year survival rate was 50.6% (95% C.I 38.2–66.9%), which was much higher than the previously known pancreatic cancer survival rate.

**Conclusions** When CT findings are indeterminate for pancreatic cancer, EUS should be considered due to its highly sensitive for detection of pancreatic cancer, especially when the tumor is smaller than 2.0 cm.

### ePP299 POSITIVE PREDICTIVE VALUE OF MAIN PANCREATIC DUCT DILATION FOR MALIGNANCY PREDICTION IN SOLID PANCREATIC MASSES: A SINGLE-CENTER RETROSPECTIVE ANALYSIS

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DOI 10.1055/s-0040-1704688

**Aims** To evaluate the association between main pancreatic duct (MPD) dilation and malignancy occurrence in pancreatic solid lesions during endoscopic ultrasound (EUS).

**Methods** Retrospective data from consecutive patients (Jan/2016 to Dec/2018) with solid hypoechoic pancreatic lesions on EUS was prospectively analyzed. The MPD diameter were measured in all patients. All solid lesions were punctured via fine-needle aspiration for histological analysis. Malignancy was defined in accordance with histological, surgical specimen and/or 6-months follow up. MPD diameter cut-off value for malignancy was estimated using Youden's index. A sub-analysis with lesion localization, MPD diameter, EUS and EUS-guided fine-needle aspiration biopsy for determining sensitivity, specificity, positive and negative predictive values (PPV/NPV) for malignancy was calculated. Data was analyzed in Rv.3.6.0.

**Results** 119 patients with pancreatic hypoechoic lesions were included for analysis. The mean age was 64.7  $\pm$  14.4 years, and 59/119 (49.6%) female. Most lesions were in the head of the pancreas (91/119; 76.5%) or uncinate process (10/119; 8.4%), with a median size lesions of 34 mm (range: 10–70). According to histology, 96/119 (80.7%) subjects had malignant lesions, follow up confirmed malignancy in 101/114 (88.5%), with 5 patients lost during follow-up. The median pancreatic duct diameter was 4.0 mm (range: 1.2–13.0) in the malignant group and 4.2 mm (range: 1.3–7.0) in the non-malignant lesions ( $p$  = 1.000). For both head and overall pancreatic lesions, an MPD diameter cut-off value  $>$  5.2 mm as a marker of malignancy was estimated. According to our results, sensitivity, specificity, PPV and NPV for determining malignancy through MPD diameter  $>$  5,2 mm was: 25%, 89%, 95%, and 12%, respectively; overall EUS: 93%, 77%, 97% and 59%, respectively; for EUS-guided fine-needle aspiration biopsy: 95%, 100%, 100% and 72%, respectively.

**Conclusions** A dilated MPD diameter  $>$  5.2 mm in the context of solid pancreatic masses represents a useful indirect parameter for suspected malignancy.

### ePP300 INTEROBSERVER AGREEMENT BETWEEN TUTOR AND FELLOW AFTER 6 MONTHS OF TRAINING IN ENDOSCOPIC ULTRASOUND

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**Aims** Learning curve in Endoscopic Ultrasound (EUS) is extremely variable between operators and competence cannot be assessed just by the number of procedures performed. Interobserver agreement between trainees and tutors could be a reliable first step parameter to evaluate acquired skills during the training.

Aim of the study was to evaluate interobserver agreement between a fellow and his tutor assessing anatomical structures and final diagnosis during video sequences of biliopancreatic EUS.

**Methods** At the end of a 6-month training period, 60 consecutive videos were prospectively recorded by two operators. A third independent operator randomly selected 40 cases out of the 60 produced. All the videos were finally evaluated, according to a report form that contained quality indicators of EUS procedure as well as diagnostic hypothesis developed by the visualization of the exam. All procedures were conducted under conscious sedation, with a linear-array echo-endoscope (Pentax EG-3870UTK) and patients were examined in the left lateral position. During the EUS training, the fellow attended about 500 procedures and performed about 250 scans. Data were statistically analyzed assessing Fleiss' kappa.

**Results** Of the selected videos, 15 were recorded by the trainee and 25 by the tutor. The statistical analysis showed an almost perfect agreement regarding the diagnostic hypothesis ( $\kappa$  = 0.881  $p$  < 0.001), although the agreement on the quality of the video was only moderate ( $\kappa$  = 0.439  $p$  = 0.002). The

agreement on diagnosis remained high even by dividing the videos according to the operator who had recorded them ( $\kappa = 0.917$  vs  $0.858$ ).

**Conclusions** At our knowledge, this is the first reported experience of inter-observer agreement assessment for evaluation of training competence. With a reported good diagnostic agreement between tutor and the trainee after 6 months of training, so it could be considered a reliable method to assess the level of competence in EUS.

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Saturday, April 25, 2020  
How to maximize detection and reporting in colonoscopy?

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11:30 – 12:00  
ePoster Podium 4

### ePP302 COMPARISON OF CAP ASSISTED COLONOSCOPY IN TOTAL WATER IMMERSION AND GAS ENVIRONMENT

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**DOI** 10.1055/s-0040-1704690

**Aims** Compare underwater colonoscopy using distal cap with cap assisted colonoscopy in a gaseous environment for high resolution endoscopes.

**Methods** Was performed prospective analysis of 232 screening colonoscopies performed during 2018 and early 2019. All studies were performed in one single center by the same endoscopist.

Patients were randomized into 2 groups: experimental group, 118 patients – procedure performed in total water immersion, coupled with the use of distal cap (TWCA – total water cap assisted colonoscopy); control group, 114 patients – procedure in the gas atmosphere (carbon dioxide) using distal cap (CA – CO<sub>2</sub> cap assisted colonoscopy). Average quality of bowel preparation estimated by BBPS was in the two groups – 8.9 points.

**Results** Analysis of the results was conducted by indicators as polyp detection rate (PDR), adenoma detection rate (ADR), serrated adenoma detection rate (SADR), advanced adenoma detection rate (AADR). In terms of ADR and PDR revealed significant differences between the control and experimental groups: PDR – 88,1% vs. 71,6% ( $p = 0,008$ ) – ARR = 14,5% (CI 4,3–24,4%)  $p = 0,05$ ; ADR – 61,8% vs. 38,5% ( $p < 0,0001$ ) – ARR = 23,3% (CI 10,4–35,1%)  $p = 0,05$ . In terms of SADR – 28,8% vs. 24,5% ( $p = 0,562$ ), AADR – 8,5% vs. 7,8% ( $p = 0,936$ ).

**Conclusions** TWCA colonoscopy has the advantage in detection of polyps. Statistically significant benefits identified in the detection of tubular adenomas and polyps in general. The tendency to improve the performance of detecting serrated adenomas needs further study in larger samples. No significant difference in finding advanced adenomas were detected, which seems logical, since the visibility of large lesions is easier in any environment.

### ePP303 IS THE ADENOMA DETECTION RATE AN IMPORTANT INDICATOR IN THE DETECTION OF OTHER NON-NEOPLASTIC FINDINGS?

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**DOI** 10.1055/s-0040-1704691

**Aims** Adenoma detection rate (ADR) is the proportion of screening colonoscopy patients who are found to have at least one adenoma. ADR has been inversely associated with the risk of CRC and death. However little is known about the correlation of the adenoma detection rate and the detection of other non-neoplastic findings. The aim of this study was to evaluate if ADR is associated with a higher detection of non-neoplastic findings.

**Methods** We retrospectively analyzed patients undergoing colonoscopy by three endoscopists at our center (A, B, C). Angiodysplasia, diverticula, nonspecific inflammation, erosions or ulcers or subepithelial lesions were considered non-neoplastic findings.

**Results** A total of 229 colonoscopies were analyzed. The mean age was  $64 \pm 13.1$  years-old. 54.6% were male ( $n = 125$ ). The median ASA score was 2 (IQR: 1–3). The mean indication was post-polypectomy surveillance 25.8% ( $n = 59$ ), followed by CRC surveillance 27.1% ( $n = 62$ ) and screening for CRC 20.5% ( $n = 47$ ). The indication for colonoscopy was significantly different between groups ( $p = 0.04$ ): CRC surveillance was higher in endoscopist B (31.9%,  $n = 23$ ) and C (36.5%,  $n = 23$ ), and post-polypectomy surveillance was higher in endoscopist A (35.1%,  $n = 33$ ). An excellent bowel cleansing was higher in colonoscopies performed by endoscopist A (A: 59.6% vs. B: 48.6% vs. C: 19%,  $p < 0.01$ ). The global ADR was 36.2% ( $n = 83$ ) and was not significantly different between endoscopists (A: 42.6% vs. B: 36.1% vs. C: 27%,  $p = 0.14$ ). The ADR was not associated with higher detection rate of non-neoplastic findings (31.3% vs 30.1%,  $p = 0.88$ ), even when concerning each endoscopist (A: 27.5% vs 33.3%,  $p = 0.65$ ; B: 38.5% vs 23.9%,  $p = 0.28$  e C: 29.4% vs 32.6%,  $p = 0.81$ ).

**Conclusions** In our study, ADR was not associated with a better detection of other non-neoplastic findings in the total sample and by endoscopist.

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Saturday, April 25, 2020  
IBD 3

11:30 – 12:00  
ePoster Podium 5

### ePP304 PERFORMANCE OF RUTGEERTS SCORE FOR RECURRENCE OF CROHN'S DISEASE IN PATIENTS WITH ILEOCECAL RESECTION

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**DOI** 10.1055/s-0040-1704692

**Aims** Our study aimed to assess the risk of recurrence after an ileocecal resection and to appreciate the performance of *Rutgeerts score* on the management of operated Crohn's disease.

**Methods** We retrospectively recorded 155 patients with ileocecal resection who benefited from a colonoscopy 6 to 12 months on postsurgery.

**Results** Of a total of 560 Crohns disease patients, 155 (28%) underwent ileocecal resection followed by colonoscopy after about 6 to 12 months, with an average follow-up of 6 years  $\pm$  3 years. These are 82 men and 73 women with a sex ratio (H/F) of 1.13. The median time between surgery and endoscopy was 8 months (4–12 months). All patients were regularly followed and 73 patients (47%) were placed on postoperative medical treatment before colonoscopy.

These included 5ASA in 12 patients, Azathioprine in 47, and Anti TNF $\alpha$  in 14 patients. Therapeutic abstention was decided in 50 patients (33%). Colonoscopy showed a Rutgeerts score i0 in 27 patients (17%); i1 in 14 patients (9%); i2 in 57 patients (37%); i3 in 40 patients (25%) and i4 in 14 patients (11%). Forty-five percent of patients had a score  $> i2$  and these patients benefited from a therapeutic escalation after endoscopic relapse diagnosis: Immunosuppressive drugs were indicated in 50% of our patients; anti-TNF alpha was indicated in 30% of our patients and finally, a combo therapy was indicated in 20% of our patients. In our cohort, clinical recurrence was significantly associated with endoscopic recurrence ( $p = 0.008$ ).

**Conclusions** Post-ileocecal resection *endoscopic assessment using Rutgeerts score* represents a predictive factor of the postoperative recurrence, allows the adjustment of therapeutic attitude according to the severity of the lesions, avoids clinical recurrence and prevents complications.

## ePP305 ENDOSCOPIC RECURRENCE AFTER ILEOCAECAL RESECTION FOR CROHN'S DISEASE RELATING TO MICROSCOPIC INFLAMMATION AT RESECTION MARGINS

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DOI 10.1055/s-0040-1704693

**Aims** An early postoperative endoscopic recurrence of Crohn's disease after ileocaecal resection remains unclear concerning its pathogenesis and risk factors. In our study, we evaluated the influence of histological inflammation at the resection margins on endoscopic recurrence.

**Methods** Patients with CD who underwent ileocaecal resection have been prospectively followed up in our study. The specimens were histologically analysed for inflammation at both of the resection margins (ileal and colonic). We evaluated whether histological results of the resection margins are correlated with endoscopic recurrence of CD based on colonoscopy 6 months after ileocaecal resection.

**Results** We have included 107 patients in our study. Six months after ileocaecal resection, 23 patients (21.5 %) had an endoscopic recurrence of CD. The histological signs of CD at the resection margins were associated with a higher endoscopic recurrence (56.5 % versus 4.8 %,  $p < 0.001$ ).

**Conclusions** Microscopic inflammation at the resection margins was significantly associated with a higher risk of early postoperative endoscopic recurrence after an ileocaecal resection for CD.

Saturday, April 25, 2020

11:30 – 12:00

Percutaneous Endoscopic Gastrostomy (PEG) ePoster Podium 6 and duodenal polyps

## ePP307 DUODENAL POLYPS – ARE WE SEEING SOMETHING THAT ISN'T THERE?

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DOI 10.1055/s-0040-1704694

**Aims** Duodenal polyps (DP) are found incidentally during diagnostic upper GI endoscopy. The proportion of DPs that are duodenal adenomas and have malignant potential is not clearly known due to their low incidence. We aimed to determine the endoscopic-histological correlation for DPs.

**Methods** Retrospective study at a tertiary London-based hospital Trust. Endoscopy software (Unisoft GI reporting tool) used to identify the last 200 patients to be diagnosed with a duodenal polyp in reverse chronological order from December 2018.

**Results** 200 patients had duodenal polyps diagnosed between February 2016 and December 2018 (median age 70 (IQR 59–77), Female 94 (47%). The size of the polyp was not described in 88 patients (44%), the median size in the remain 112 patients was 6 mm (IQR 4–10). 13 (6.5%) polyps were > 20 mm. Polyp morphology was described as sessile in 30 (15%), pedunculated in 11 (5.5%) and not described in 159 (79.5%). Pit pattern was described as hyperplastic in 6 (3%) and adenomatous in 20 (10%).

Biopsies of the polyp were taken in 189 patients (94.5%) and polypectomy was performed in 15 (7.5%). Of those resected, polyps were retrieved in 13

(86.7%). Only 7 of 20 polyps thought to be adenomas at endoscopy were confirmed on histology (35%).

**Conclusions** 3 out of 4 patients diagnosed with DPs do not have a description of the morphology or pit pattern in the report and less than half describe the size. Less than 10% of DPs undergo polypectomy. One third of patients have normal duodenal mucosa on histology.

There is significant variability of practice with regards to management of DPs. Better endoscopic descriptions are required for DPs which may in turn reduce the number of unnecessary histological samples being taken. Automated duodenal polyp characterisation on the endoscopy reporting tool may help in better documentation of DPs.

## ePP308 PERCUTANEOUS ENDOSCOPIC GASTROSTOMY (PEG). SUCCESSFUL PLACEMENT AND COMPLICATION RATES. A RETROSPECTIVE STUDY CONDUCTED AT A TERTIARY CENTER

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DOI 10.1055/s-0040-1704695

**Aims** Percutaneous Endoscopic Gastrostomy(PEG)is an endoscopic procedure aiming to create a stoma in order to facilitate the delivering of water and nutrients to the small intestine when oral feeding is impossible or contraindicated. The purpose of this study was to assess the effectiveness and safety of PEG formation in our center.

**Methods** This was a retrospective study on prospectively acquired data regarding the success and safety of PEG procedures in our center between January 2015 and December 2018. The study includes patients hospitalized for various medical conditions or admitted in order to place a PEG to restore intestinal nutrition. Detailed data from PEG placement were retrieved from the hospital's electronic recording system. The procedure was executed by experienced endoscopic staff(endoscopists and nurses)of our department assisted by specialized medical staff(ICU doctors,nurses,anesthesiologists,and surgeons)on a case to case base. The pull-through technique was used with a PEG diameter of 24Fr. Patients were excluded from this study when the outcome of the PEG endoscopic procedure was unknown after 7 days.

**Results** In total,203 PEGs were placed.145(71.4%)patients were men with median age 61.7 years and 58 were women(28.6%)with median age 65.3 years. The main reasons for PEG placement were:Neurological and neurodegenerative diseases(dementia,multiple sclerosis,stroke,motor neuron disease,etc)in 124/203(61.2%)cases;malignant diseases(neck,larynx,tongue,brain, hematological diseases,etc)in 34/203(16.7%)cases;head injuries (road accidents,falls)in 24/203(11.8%)cases;prolonged hospitalization in Intensive Care Units for various reasons(sepsis,aspiration,cardiac arrest, central nervous system infections,suicidal attempts,postoperative complications,burns,etc)in 21/203(10.3%)cases. The rate of successful PEG placement was 92.1%(187/203). Placement of PEG failed in 16 cases:Inability to locate a suitable insertion spot 12/16(75%)cases,desaturation of the patient during sedation 3/16(18.75%)cases,and due to a tracheo-esophageal fistula one(6.25%)patient. One patient died within 2 days after PEG placement. Serious complications occurred in 4 patients within 7 days after insertion. Aspiration pneumonia 3/203(1.5%)and bleeding 1/203(0.5%)patient. 11/203 patients(5.4%)experienced minor complications:trauma infection or leak of the stoma[4(2%)and3/203(1.5%)patients],unintentional PEG removal[3/203(1.5%)]and obstruction[1/203(0.5%)].

**Conclusions** PEG placement has high success and safety rates when performed with careful patient selection and close collaboration of specialised personnel.

## ePP309 TECHNIQUE OF PERCUTANEOUS RESCUE PEG PLACEMENT AFTER ACCIDENTAL DISLOCATION

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DOI 10.1055/s-0040-1704696

**Aims** Accidental dislocation of PEG tubes frequently occurs in patients with balloon type PEG tubes. Dislocation may have crucial impact in case of supplementation of nutrition and medication. Unfortunately a simple reinsertion of a new PEG tube is frequently not achievable because of shrinking of the transabdominal orifice which can occur within hours. In addition placement of a new PEG may be altered in some individuals by changed anatomy or tumor progression.

We aimed to describe a simple and safe standardized method for the reinsertion of a PEG tube after dislocation.

**Methods** Retrospective single center analysis of treatment data of patients suffering from PEG dislocation who were treated with the following reinsertion technique.

After skin disinfection a wire is inserted into the ostium. In case of passage, the Abdominal wall around the orifice is anesthetized. Using a commercial available set for PEG placement with direct puncture (Cook Medical) the tract is then dilated in steps of 16 CH and 18 CH followed by insertion of a 18 CH peel away sheath. Through this sheath, a 16 CH PEG (Entuit Thrive, Cook Medical) is inserted and the balloon is blocked. All necessary supplies are sterile and included in the set. Antibiotic prophylaxis was not given.

**Results** In total 18 patients were treated as described. The time from dislocation until reinsertion was between 1 and 8 days. In all cases the stomach could be cannulated and all treatments were successful. Complications did not occur. In one case the method was successfully used to reinsert a jejunal feeding tube on ICU.

**Conclusions** The described technique is safe and simple to use for reinsertion of PEG tubes after dislocation. The system is certified and offers sterile working and as an advantage towards individual solutions for the situation of PEG dislocation.

Thursday, April 23, 2020

15:00 – 15:30

Quality and safety of GI- endoscopy

ePoster Podium 4

## ePP310 A NATIONAL SURVEY OF SAFETY ACROSS UK ENDOSCOPY SERVICES

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DOI 10.1055/s-0040-1704697

**Aims** To understand factors related to safety across UK endoscopy in line with the Joint Advisory Group on GI Endoscopy (JAG) 'Improving Safety and Reducing Error in Endoscopy' (ISREE) strategy.

**Methods** An expert panel devised questions across 7 themes, complementing JAG safety domains. These were incorporated into the biennial census of UK JAG-registered services in April 2019.

**Results** The response rate was 68.4%. Across March 2019, a total of 1535 patient safety incidents were reported (mean 4.80, SD 11.869). There was a significant difference in reporting dependent on incident type ( $\chi^2(7) = 308.1, p < 0.001$ ). Technical and training incidents were least likely to be reported.

There was no effect of region, service type or JAG accreditation status on reporting.

Anaesthetic-supported (AS) lists were unavailable to 27% of services. This varied amongst service type ( $\chi^2(4) = 67.86, p < .0005$ ) but not region ( $p = 0.13$ ). There was a significant difference between the current and desired number of AS lists ( $p < 0.001$ ).

The majority of acute services have a gastrointestinal bleed (GIB) service (82.2%) but provision is significantly different between regions ( $p < 0.001$ ). Accreditation ( $\chi^2(1) = 12.04, p < 0.01$ ) and AS lists ( $\chi^2(1) = 18.90, p < 0.01$ ) were strongly associated with having a GIB service.

Overall, 66.1% of services reported having an effective strategy for supporting underperformance. More endoscopists require support for technical skills than non-technical skills

( $Z = -5.35, p = 0.001$ ). Simulation provision was 49.1% across acute services, with significant regional differences ( $p = 0.001$ ).

Learning is shared following discussion of adverse events in 94.1% services. Patient feedback is used to support learning, training and quality improvement.

**Conclusions** This is the first survey of national endoscopy safety practice and highlights regional and service-specific variability. These results are important in guiding the ISREE strategy in supporting safer UK endoscopy.

## ePP311 GETTING THE JOB DONE: HOW TRAINEE INVOLVEMENT AFFECTS ERCP PROCEDURES – RESULTS FROM A PROSPECTIVE MULTICENTER OBSERVATIONAL TRIAL

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DOI 10.1055/s-0040-1704698

**Aims** The impact of trainee involvement on the outcome of complex endoscopic procedures such as ERCP remains unclear. We aimed to evaluate the degree of trainee involvement in the real-life practice of ERCP procedures in a teaching setting.

**Methods** We conducted a post-hoc subgroup analysis of data from a large international multicenter trial evaluating the impact of trainee involvement on procedure outcomes at ERCP. Data about the indication of the procedure, papilla anatomy, trainee involvement and procedure-related outcomes were retrieved from the database and analyzed using SPSS.

**Results** Twenty-one trainees from 6 European endoscopy centers were involved in 822 ERCP procedures (44.6% of all procedures in the study), including 565 native papilla cases. The most common indication was common bile duct stones (47%), followed by malignant strictures of the CBD (32.1%). Most procedures were graded as grade I according to the Schutz scale (81.7%). Overall, technical success was achieved in 92.5% of the cases and there were 121 (14.7%) adverse events. Trainees managed to complete 58.4% of the procedures without supervisor assistance, requiring variable degree of hands-on assistance in an additional 21.6% of the. In 20% of the cases, trainees were unable to cannulate the desired duct. Failure of the trainee to cannulate the desired duct was associated with a significant increase in the use of precut technique by the supervising endoscopist (35.8% vs. 11.7%,  $p < 0.001$ ) and an increase in the rate of procedure-related adverse events (38.8% vs. 8.9%,  $p < 0.001$ ).

**Conclusions** ERCP procedures in a teaching setting can be successfully carried out by trainees without any hands-on assistance in a significant percentage of the cases. However, cannulation of the desired duct remains the critical point of the procedure, with failed cannulation by the trainee leading to an increase in the need for precut techniques and an increase in procedure-related adverse events.

### ePP312 BSG EQIP UPPER GI HAEMOSTASIS COURSE QUALITY IMPROVEMENT PROJECT

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DOI 10.1055/s-0040-1704699

**Aims** The aim of this project was to assess the knowledge and skills of medical and paramedical staff in managing the Upper Gastro-intestinal bleeding (UGIB), pre- and post-UGIB haemostasis course and the benefits of conducting it.

**Methods** A one-day course in line with British Society of Gastroenterology's Endoscopy Quality Improvement Project initiative and in conjunction with Joint Advisory Group

was arranged at Sheffield Teaching Hospitals on 10<sup>th</sup> October, 2019 for all medical and para-medical including gastroenterology fraternity. The course included lectures on pre-endoscopic consideration, risk assessment, potential pathologies responsible for UGIB, management of variceal, non-variceal and atypical UGIB and endoscopy report writing. Subsequently, hands-on training on adrenaline injection, clip placement, variceal banding, thermal therapy, haemostatic powder (Hemospray), Sengstaken tube and Danis stent placement was also arranged via porcine or plastic models. Feedback questionnaires consisting of self-assessed pre and post course ratings related to knowledge, skills and behaviour relevant to UGIB were offered to all delegates. Wilcoxon signed-rank tests were used to compare the results.

**Results** The course was attended by 36 delegates hailing from different fields of specialization and seniority (both medical and paramedical) with an average endoscopy procedure count of 583. Out of which, ten were JAG certified in UGI endoscopy. Four were Gastroenterology consultants, one surgical consultant, eight were gastroenterology trainees, two medicine trainees, one surgical trainee, two junior doctors with remaining ones being nurses or nurse practitioners. Feedback datasheets were returned by 22 delegates. Significant improvements were reported post course in almost all areas, especially the hands-on and behavioural components (table 1).

**Conclusions** The confidence in managing UGIB independently of the delegates improved significantly with this one-day haemostasis course. Conducting such courses at regular intervals for all medical and paramedical staff especially the gastroenterology trainees, will help to improve management of UGIB, thus reducing the mortality and morbidity rate nationally.

Saturday, April 25, 2020

Rare diseases 2

11:30 – 12:00

ePoster Podium 8

### ePP314 INITIAL EXPERIENCE WITH PER-RECTAL ENDOSCOPIC MYOTOMY (PREM) FOR HIRSCHSPRUNG'S DISEASE: LONG-TERM OUTCOMES OF THE FIRST CASE SERIES OF A NOVEL THIRD SPACE ENDOSCOPIC PROCEDURE

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DOI 10.1055/s-0040-1704700

**Aims** Per-rectal endoscopic myotomy (PREM) has been recently described as a minimally invasive treatment for Hirschsprung's Disease (HD). This case-series reports safety and long-term outcomes after PREM.

**Methods** Retrospective analysis of prospectively maintained database of PREM for HD at single center over 4 years. HD was diagnosed & mapped using – barium enema, anorectal manometry (ARM) and sigmoidoscopic cap EMR biopsies. PREM was performed with myotomy extending beyond length of aganglionic segment. Abstracted parameters included demographics, clinical data including laxative use index (LUI = No of laxatives x times the standard dose + use of enema), procedure related parameters and follow-up data.

**Results** N = 8 (6 males, Mean age = 7.1 ± 5.2 years [1–24]). All had rectosigmoid HD. Mean aganglionic segment length-6.8 ± 3.0 cm (2–15). PREM technically succeeded in all. Mean myotomy length-11.3 ± 2.9 cm (8–20). Median procedure time-80 min (IQR 70–120). No immediate adverse events encountered. Mean time to first post-PREM bowel movement –2 days (1–3). Longest follow-up = 48 months; median = 15 months (IQR 2.5–30). All had improvement in stool frequency (1 in 4.5 ± 1.1 vs 1 in 1.2 ± 0.3 days [p = 0.0004, Wilcoxon signed-rank test]). Mean LUI reduction –6.62 (4–11) to 0.25 (0–2) (p = 0.0002). 6(75%) did not require laxative. No incontinence noted. Post-PREM high-resolution ARM in 3/8 revealed normal basal and squeeze pressures. First patient had mild anal stenosis 8 months post procedure-single session digital anal dilatation. No other delayed AE.

**Conclusions** PREM is safe and feasible procedure. Results of this case-series demonstrate excellent long-term clinical outcomes. PREM could be considered a minimally invasive therapeutic option for patients with HD. Studies with larger sample size are required to confirm these findings.

### ePP315 A PROSPECTIVE EVALUATION OF THE GOTHENBURG INTESTINAL TRANSPLANT ENDOSCOPY SCORE

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DOI 10.1055/s-0040-1704701

**Aims** Intestinal transplantation is a procedure aimed to reverse the life-threatening complications seen in patients with intestinal failure. However, the major factor that influences long-term survival and hinders a firm establishment of this procedure is the occurrence of rejection. Nevertheless, a grading system for its severity is still lacking. Therefore Gothenburg Intestinal Transplant Endoscopy Score (GITES) was developed by our team. GITES is a novel, five-stage score aiming to describe and categorize the endoscopic findings after intestinal transplantation. In theory, this system could result in a more objective evaluation of the visual findings and subsequently a faster diagnosis of rejection.

**Methods** We prospectively graded the endoscopic findings with GITES in 13 adult patients at one single center using white light high-definition endoscopy systems. The scoring was performed by the endoscopist at the time of endoscopy and later we correlated the results with histology.

**Results** Eighty-five ileoscopies were performed between January 2015 to February 2019. In 52 (61%) cases the endoscopic findings were normal. Twenty-three (69%) out of the 33 abnormal endoscopies revealed mild alterations represented by mild/moderate edema, erythema or blunted villi (GITES 1 and 2). Rejection was found in biopsies from 11 (14%) endoscopy sessions (4 mild & 7 moderate/severe) and in three specimens the biopsies revealed CMV enteritis. GITES above 1 (erythema, edematous villi) had 91% sensitivity and 94% specificity for rejection whereas positive (PPV) and negative predictive values (NPVs) were 78% and 98%, respectively. During moderate and severe rejection, GITES revealed 87% sensitivity and 94% specificity whereas positive (PPV) and negative predictive values (NPVs) were 78% and 98% respectively.

**Conclusions** These results suggest that evaluation of the endoscopic findings with GITES results in a satisfactory identification and stratification of rejection. A prospective, multicenter evaluation is needed.

Saturday, April 25, 2020

14:30 – 15:00

Upper GI: Endoscopic cancer treatment 1

ePoster Podium 1

### ePP316 ENDOSCOPIC SUBMUCOSAL DISSECTION FOR GASTRIC NEOPLASIA FOLLOWING ABSOLUTE AND EXPANDED INDICATION CRITERIA. OUTCOMES FROM A PROSPECTIVE WESTERN COHORT

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**DOI** 10.1055/s-0040-1704702

**Aims** To compare outcomes of gastric endoscopic submucosal dissection (ESD) following absolute (AC) and expanded criteria (EC) indication.

**Methods** All gastric lesions meeting AC or EC treated by ESD between January 2012 and November 2019 in a single tertiary center were included. Subepithelial lesions, non-neoplastic epithelial lesions and neoplastic epithelial lesions not meeting AC or EC were excluded.

**Results** 35 lesions in 34 patients were included. Lesions most frequently appeared in men (60%), mean age 70.3 (SD8.4). Predominant location was antrum (42.9%) followed by incisura (25.7%). Mean size was 25.2 mm (SD14.8).

AC comprised 29 (82.8%) of the indications. En-bloc resection rate was 96.6% for the AC and 100% for the EC ( $p = 0.656$ ). Complete resection rate was lower for the EC: 89.7% vs 66.7% ( $p = 0.151$ ). The curative resection rate was significantly higher for the AC group: 89.7% vs 33.3% ( $p = 0.001$ ). 3/29 cases in the AC group did not achieve the curative criteria: 1 HGD with lateral-margin affected and 2 pT1b well-differentiated adenocarcinoma with deep-margin involvement (one showed additional lymphovascular invasion). ESD was not curative for 4/6 cases from EC: 2 poorly-differentiated adenocarcinoma with size > 2 cm and 2 pT1b well-differentiated adenocarcinoma with deep-margin involvement.

Complication rate was 31.7% in the AC group vs 0% in EC with only 2 cases requiring surgical treatment.

The median follow-up for patients meeting curative criteria was 16.1 months (IQR = 30.7). No local or distant recurrences were identified in this cohort.

All patients meeting non-curative criteria underwent surgery. 1 (33.3%) patient in the AC group presented residual HGD whereas the other 2 showed no residual disease. For the EC group, all cases (4, 100%) showed a free-of-neoplasia surgical specimen.

**Conclusions** EC was associated with a significantly lower curative resection rate in our series. However this was not correlated with a higher recurrence rate or the presence of residual disease in the surgical specimen.

### ePP317 GASTRIC STROMAL TUMORS: A RETROSPECTIVE STUDY ABOUT 53 CASES

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**DOI** 10.1055/s-0040-1704703

**Aims** Gastric stromal tumors are the most common malignant mesenchymal tumors of the stomach that develop at the expense of the muscularis of the gastric wall. The aim of our study is to focus on the diagnosis and therapeutic

management of gastric stromal tumors and to show the benefit of long-term patient surveillance given the risk of recurrence.

**Methods** Retrospective study of a series of 53 cases of gastric stromal tumors diagnosed, treated and followed in the departments of Hepatology and Gastroenterology I and Visceral Surgery I of the Mohammed V Military Training Hospital of Rabat, in Morocco, on a period of 15 years, between April 2003 April 2018.

**Results** 53 patients including 39 men and 14 women with a mean age of 55 years. The circumstances of discovery were dominated by gastrointestinal bleeding noted in 52% cases and a palpable abdominal mass noted in 22%. The scanner has been the most used diagnostic tool in our series. The tumor sat preferentially in the lower third of the stomach with 39% of cases. The tumor size ranged from 0.5 to 34 cm with an average of 11 cm. 52% of cases had a high risk of malignancy. All patients were operated on. 51 patients (91%) underwent surgical resection for curative purposes. 2 patients could not be resected due to advanced locoregional invasion. 37 patients (60%) received adjuvant therapy with Imatinib. After an average follow-up of 35 months, one patient died as a result of the operation, 2 patients died from a cause other than TSG, 41 cases were in complete remission and 9 cases had locoregional recurrence.

**Conclusions** Complete surgical resection remains the treatment of choice for gastric stromal tumors for localized forms and Imatinib finds its place in metastatic forms. The monitoring of these tumors must be prolonged given the risk of recurrence.

### ePP318 PROGNOSTIC INFLUENCE OF ADDITIONAL SURGERY FOR GASTRIC CANCERS WITH SUBMUCOSAL INVASION CLASSIFIED INTO NON-CURATIVE RESECTION AFTER ENDOSCOPIC SUBMUCOSAL DISSECTION IN ELDERLY PATIENTS

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**DOI** 10.1055/s-0040-1704704

**Aims** In Japanese gastric cancer treatment guideline (2018), after endoscopic submucosal dissection (ESD), gastric cancer with submucosal invasion which histological findings reveal SM2 ( $\geq 500 \mu\text{m}$ ), lymphatic invasion, venous invasion, positive vertical margin, ulcerative finding, larger tumor size ( $\geq 3 \text{ cm}$ ), or undifferentiated type is classified into non-curative resection, eCuraC2. In eCuraC2, additional surgery with lymph node dissection is recommended, but additional surgery may be excessive, especially for elderly patients with comorbidities.

**Methods** One hundred eighteen lesions of 117 patients are classified into eCuraC2 with SM invasion at our hospital from April 2006 to March 2019. Those patients were divided into non-elderly group (< 75 years old) and elderly group ( $\geq 75$  years old). We retrospectively analyzed overall survival (OS), disease-free survival (DFS), and disease-specific survival (DSS) for radical surgery patients and no additional treatment patients in individual age groups.

**Results** Non-elderly group and elderly group were 76 and 41, respectively. OS, DFS, and DSS

(5 years) in all patients were 86.0%, 93.1%, and 97.7%, respectively. Regarding OS, radical surgery patients ( $n = 57$ ) and no additional treatment patients ( $n = 19$ ) in non-elderly group were 92.2% and 91.2%, respectively, and radical surgery patients ( $n = 23$ ) and no additional treatment patients ( $n = 18$ ) in elderly group were 74.2% and 79.6%, respectively. In radical surgery patients, non-elderly group had significantly better OS than elderly group ( $p = 0.03$ ), but in no additional treatment patients there was no significant difference between two age groups. Also, death from causes not related to gastric cancer occurred

in 6.6% (5/76) of the patients in non-elderly group, in contrast to 17.1% (4/41) in elderly group ( $p = 0.08$ ).

**Conclusions** In eCuraC2 of elderly patients, there was less gastric-cancer-related death, and other diseases were prognostically important in those patients. In eCuraC2 of elderly patients, no additional treatment is also considered depending on their comorbidities.

Saturday, April 25, 2020

14:30 – 15:00

Cholangioscopy: Stones

ePoster Podium 2

### ePP319V SINGLE-OPERATOR CHOLANGIOSCOPY-GUIDED ELECTROHYDRAULIC LITHOTRIPSY COMES TO RESCUE IN A DIFFICULT BILE DUCT STONE CASE

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DOI 10.1055/s-0040-1704705

A 27-year-old female patient presented with abdominal pain, vomiting and jaundice. She had been submitted to a subtotal cholecystectomy two years earlier. Laboratorial tests revealed an elevated total bilirubin (7.56 mg/dL, direct 6.79 mg/dL) and abdominal ultrasound showed a 10 mm common bile duct (CBD). An ERCP was performed, showing an impacted bile duct stone deforming the cystic duct insertion. After sphincterotomy, a stone removal using basket was not possible even using mechanical lithotripsy. An EPCR was repeated 4 weeks later, illustrating the same impacted stone. Single-operator cholangioscopy-guided electrohydraulic lithotripsy enabled bile duct stone clearance.

### ePP320 CHOLANGIOSCOPY IN COMMON BILE DUCT STONE DISEASE: TWO YEAR EXPERIENCE AT A NON-TERTIARY CENTER

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DOI 10.1055/s-0040-1704706

**Aims** Single operator cholangioscopy (SOC) has been use in our centre since 2016. The aim of this study was to assess the efficacy and safety of SOCP for common bile duct (CBD) stone disease in our high volume non-tertiary endoscopic retrograde cholangiopancreatography (ERCP) center.

**Methods** A prospectively maintained database was retrospectively interrogated for all subjects undergoing SOC from September 2016 to November 2018. Unique patient identification numbers were cross referenced with the endoscopy database and electronic record. Patient demographics, procedure indication, success rates and complication rates were recorded.

**Results** A total of 24 patients (Male = 10, 41.7% Female = 14, 58.3%) underwent 31 procedures. Median age was 74 years old (IQR 36–93). The median Charleston Comorbidity Index was 4 (IQR 0–7). 13 (54.2%) had at least one co-morbidity.

Median stone size was 18 mm (IQR10-30), 17(70.8%) had multiple stones.6 (25%) patients had SOC on their index ERCP. 9 (37.5%) had one previous ERCP with failed duct clearance. An equal number had 2 or more previous ERCPs with failed duct clearance.

Complete duct clearance was achieved in 17 (70.8%) patients. 12 (50%) had duct clearance after the first procedure, 4 (16.7%) after 2 procedures and 1 after 3 procedures. Of those without duct clearance, 5 were deemed too frail to continue with therapy, all of these had stones greater than 20 mm and all had had previous attempts at duct clearance with ERCP.

There were three (12.5%) procedure related adverse events. One patient had a desaturation event with Propofol sedation and there were two episodes of cholangitis.

**Conclusions** We report on an older age group of patients with an increased burden of co-morbidities undergoing SOC for stone disease. There were low rates of complete duct clearance limited mostly by frailty. Despite this there were low rates of complications associated with the procedure.

### ePP321V WHEN ENDOSCOPY PULLS CHESTNUTS OUT OF THE FIRE: A RARE CASE OF MIRIZZI´S SYNDROME TREATED WITH LASER LITHOTRIPSY BY DIRECT PERORAL CHOLANGIOSCOPY

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DOI 10.1055/s-0040-1704707

**Aim** We present a case of Mirizzi syndrome treated conservatively using laser lithotripsy by direct peroral cholangioscopy.

**Methods** An 82-year-old-man was admitted due to abdominal pain and jaundice. CT-scan showed a type III of Mirizzi´s syndrome.

**Results** Considering patient´s comorbidity and sugical risk we performed an ERCP failing stone extraction. We used the SpyGlass System in order to fragment the stone trough holmium laser lithotripsy by positioning the fiber in contact with the stone; all fragments were finally removed.

**Conclusions** Holmium laser lithotripsy trough the SpyGlass System can help to remove CBD impacted stone in selected patients with Mirizzi´s syndrome.

Saturday, April 25, 2020

14:30 – 15:00

FNA vs FNB for PANCREATIC CANCER

ePoster Podium 3

### ePP322 ENDOSCOPIC ULTRASOUND FINE NEEDLE BIOPSY SHOULD BE THE PREFERRED FIRST-LINE DIAGNOSTIC SAMPLING MODALITY FOR PANCREATIC MASS

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DOI 10.1055/s-0040-1704708

**Aims** Endoscopic ultrasound (EUS)-guided fine needle aspiration (FNA) is traditionally considered a first-line strategy for diagnosing pancreatic lesions; however, given less than ideal accuracy rates, fine needle biopsy (FNB) has been recently developed to yield histological tissue.

**Methods** This was a multi-center study to evaluate efficacy and safety of EUS-FNA and EUS-FNB for pancreatic lesions. Baseline characteristics including sensitivity, specificity, and accuracy, were evaluated. Rapid on-site evaluation (ROSE) diagnostic adequacy, cell-block accuracy, and adverse events were analyzed. Subgroup analyses comparing FNA versus FNB route of tissue acquisition and comparison between methods with or without ROSE were performed. Multivariable logistic regression was also performed.

**Results** A total of 574 patients (n = 194 FNA, n = 380 FNB) were included. Overall sensitivity, specificity, and accuracy of FNB versus FNA were similar [(89.09% versus 85.62%; $P = 0.229$ ), (98.04% versus 96.88%; $P = 0.387$ ), and 90.29% versus 87.50%; $P = 0.307$ ]. Number of passes for ROSE adequacy and cell-block accuracy were comparable for FNA versus FNB [(3.06 ± 1.62 versus 3.04 ± 1.88; $P = 0.11$ ) and (3.08 ± 1.63 versus 3.35 ± 2.02; $P = 0.137$ )]. FNA + ROSE was superior to FNA alone regarding sensitivity and accuracy [91.96% versus 70.83%; $P < 0.001$ ) and (91.80% versus 80.28%; $P = 0.020$ )]. Sensitivity of FNB + ROSE and FNB alone were superior to FNA alone [(92.17% versus 70.83%; $P < 0.001$ ) and (87.44% versus 70.83%; $P < 0.001$ )]. There was no

difference in sensitivity though improved accuracy between FNA + ROSE versus FNB alone [(91.96% versus 87.44%;  $P = 0.193$ ) and (91.80% versus 80.72%;  $P = 0.006$ )]. FNB + ROSE was more accurate than FNA + ROSE (93.13% versus 91.80%;  $P = 0.001$ ). Multivariate analysis showed ROSE was a significant predictor of accuracy [OR 2.60 (95% CI, 1.41–4.79)]. One adverse event occurred after FNB resulting in patient death.

**Conclusions** Sensitivity was similar between EUS-FNA + ROSE and EUS-FNB alone suggesting a decreased role for ROSE as a routine procedure. However, FNB + ROSE further increased diagnostic yield and may be useful in cases with previous indeterminate EUS-guided sampling.

## ePP323 STANDARD VERSUS CORE NEEDLE IN EUS-GUIDED SAMPLING OF PANCREATIC ADENOCARCINOMA: A SINGLE-CENTER EXPERIENCE

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DOI 10.1055/s-0040-1704709

**Aims** Fine needle biopsy (FNB) using core needles has been increasingly used in the last years, as an alternative to standard fine needle aspiration (FNA) for procurement of better tissue samples. We aimed to compare the diagnostic adequacy and diagnostic yield for pancreatic adenocarcinoma using standard versus core needle, in a center without in-site cytopathology.

**Methods** All patients with a diagnosis of pancreatic adenocarcinoma admitted in our clinic over a period of 18 months were enrolled. Endoscopic ultrasound (EUS) was performed using a Pentax-Hitachi linear probe and tissue sampling was done using either standard EchoTip needle or ProCore needle (Cook Medical). Final diagnosis was set by FNA/FNB, repeated FNA/FNB, surgery or long-term outcome. Diagnostic adequacy of samples and the diagnostic yield for malignancy was compared between the two groups – FNA versus FNB needle.

**Results** Altogether 64 patients were enrolled, median age 62.9 years, 62.5% males. FNB using the core needle was done in 23/58 (39.7%) of patients, while the other 64.1% were punctured using FNA needle. Mean tumor size was 33.8 mm in the FNA group, and 33.9 mm in the FNB group. More pancreatic head tumors were sampled using an FNA needle – 53.7% versus 43.5%. Also, more 22 G needles were used in the FNA group (48.8% vs. 30%). Diagnostic adequacy was achieved in 90.2% of FNA samples and 95% of FNB. Diagnostic yield for malignancy was slightly better for FNB – 91.3%, compared to FNA – 80.5%.

**Conclusions** In our study cohort, both needles had good diagnostic performance for pancreatic adenocarcinoma, but the core one proved to be slightly better.

## ePP324 PERFORMANCE OF EUS-FNA WITH A NEW FLEXIBLE 19 G NEEDLE FOR DIAGNOSING SOLID LESIONS OF THE HEAD AND UNCINATE PROCESS OF THE PANCREAS. PROSPECTIVE, MULTICENTER STUDY

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DOI 10.1055/s-0040-1704710

**Aims** Large bore needles aim to overcome the frequent unavailability of the rapid on site evaluation (ROSE) of the EUS-FNA samples. However, its rigidity causes a high failure of the technique in lesions of the head and uncinated process of the pancreas.

**Objective** To evaluate the technical and diagnostic success of a 19 G new nitinol needle with a multilayer coil sheath (EZ Shot 3 plus, Olympus) in solid lesions of the head and uncinated process of the pancreas.

**Methods** Prospective and multicenter study. A maximum of 5 passes with the study needle were allowed.

**Results** We included 75 patients (51% males) with lesions in the head ( $n = 68$ ; 91%) and uncinated process ( $n = 7$ ; 9%) (mean size:  $33 \pm 12$  mm; number of passes:  $1.8 \pm 0.9$ ). The technical success rate was 71/75 (94.7%) and the diagnosis success was 89.3% (67/75) and 94.4% (67/71) in a ITT and PP analysis, respectively. Final diagnoses were: adenocarcinoma ( $n = 59$ ), TNE ( $n = 5$ ), metastasis ( $n = 2$ ), lymphoma ( $n = 2$ ) and others ( $n = 7$ ). In the 8 cases without diagnosis with the needle, it was obtained with an alternative needle of 22 or 25 G ( $n = 4$ ), FNA of another lesion ( $n = 3$ ), follow up ( $n = 1$ ). A histological sample was obtained in 64/71 (90%) and immunohistochemistry was successfully performed in 11/13 lesions in which it was required. ROSE was performed in 40 (53%) cases with no differences between ROSE and non-ROSE groups regarding diagnostic success (87.5% vs 91%,  $p = 0.582$ ) or diagnoses at the first pass (70% vs 81%,  $p = 0.289$ ). The number of passes was lower in the ROSE group ( $1.4 \pm 0.9$  vs  $2.2 \pm 0.7$ ,  $p = 0.000$ ).

**Conclusions** The EZ Shot 3 plus has a high technical and diagnostic success in solid masses in the head and uncinated process of the pancreas. This new needle may be a good choice when on-site evaluation is not possible.

Saturday, April 25, 2020

14:30 – 15:00

Indications and detection at colonoscopy

ePoster Podium 4

## ePP325 NON-INVASIVE COLORECTAL NEOPLASMS REFERRED TO SURGERY: A PERFORMANCE KEY MEASURE FOR SCREENING PROGRAMS

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DOI 10.1055/s-0040-1704711

**Aims** A large proportion of neoplasms undergo curative endoscopic resection if second-look is performed before surgery. Operator competency and limited access to advanced resection techniques may have an unfavorable impact on colorectal cancer screening.

**Methods** Observational, multicenter study including all screening centers in a central Italy, and all patients referred to surgery due a colorectal cancer. Data were retrieved both from county registry and endoscopic charts. Primary outcome: noninvasive cancer rate (tumor not invading the submucosa on endoscopic or surgical specimens). Neoplasms were stratified at endoscopy by Paris and Borrmann classifications in superficial and deep. Secondary outcome: indefinite cancer histologic diagnosis on ER specimens (no data on submucosal invasion; indefinite T1 microstaging).

**Results** 468 neoplasms from 13 centers defined as superficial in 188 cases and deep in 280. Superficial neoplasms underwent ER (Sup-ER) in 92 (49%), and

biopsies in 96 (Sup-B) (51%). Sup-ER were smaller ( $P < 0.0001$ ), more pedunculated ( $P < 0.0001$ ), and in the left colon ( $P < 0.0001$ ) than Sup-B. ER was complete in 76 (83%): en bloc in 45 (59%), piecemeal in 31 (41%). Noninvasive cancer rate of Sup-B (40%) was higher than Sup-ER (20%,  $P < 0.01$ ); that of ulcer-negative Deep-B (20%) was higher than ulcer-positive (5%) and stricturing Deep-B (3%;  $P = 0.0002$ ). Indefinite cancer histologic diagnosis rate was higher in Sup-ER underwent incomplete resection (50% vs.20%;  $P = 0.012$ ). Center performance was different: noninvasive cancer rates ranged from 0% to 30% ( $P = 0.0581$ ), and Sup-B from 0% to 100% ( $P = 0.019$ ). Noninvasive cancer rate was  $< 10\%$  in 5 centers and  $> 20\%$  in 5.

**Conclusions** Noninvasive cancer rate among cases referred to surgery was 15%, but significantly heterogeneous among centers in superficial neoplasms not underwent ER, and deep neoplasms without invasive features (i.e. stricture or ulceration). Endoscopic characterization needs to be diffusely improved, and referral centers should interrogated before surgery and provide ESD when indicated.

### ePP326 SIGNIFICANT CORRELATION BETWEEN ADENOMA AND SERRATED LESIONS DETECTION RATES AT COLONOSCOPY

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**DOI** 10.1055/s-0040-1704712

**Aims** Our primary objective was to assess correlation between the adenoma detection rate (ADR) and sessile serrated lesion detection rate (SSL-DR). To evaluate whether endoscopist with high ADR are better at detecting SSLs.

**Methods** Retrospective study analysing electronic endoscopy database from an academic teaching hospital from January 1<sup>st</sup> to December 31<sup>st</sup>, 2018. Average-risk screening colonoscopies were analysed. Endoscopists were stratified by high and low ADRs ( $> / < 25\%$ ). SSL-DR defined as any serrated lesion of any size proximal to sigmoid colon divided by number of surveillance colonoscopies. Exclusion criteria: FAP/HNCC, IBD, diagnostic colonoscopy, patient  $< 50$  years of age, incomplete colonoscopy or failure due to poor prep. Endoscopists who performed  $< 20$  colonoscopies were excluded from the final analysis

**Results** 5,178 colonoscopies were performed, 4,348 of which were excluded from the analysis. 830 procedures by 22 endoscopists were analysed, comprising of 7 consultants and 15 trainees. The overall ADR, SSL-DR was 37% and 17% respectively. There was a statistically significant correlation between ADR and SSL-DR ( $r = 0.711$ ,  $n = 22$ ,  $p < 0.05$ ). Endoscopists with an ADR  $> 25\%$  had a significantly higher SSL-DR (19% vs 10%).

**Conclusions** Detection of SSLs at colonoscopy is important. Endoscopists with higher ADRs have higher SSL-DR. SSL-DR may have a use as a marker of endoscopist's performance.

► **Tab. 1** ADR/SSL Correlations

		ADR	SSL-DR
ADR	Pearson Correlation	1	.711
	Sig. (2-tailed)		.000
	N	22	22

### ePP327 AUDIT OF COLONOSCOPIES CARRIED OUT FOR THE INDICATION OF ABNORMAL RADIOLOGICAL IMAGING OVER A 4 YEAR PERIOD IN A LARGE TERTIARY REFERRAL CENTRE

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**DOI** 10.1055/s-0040-1704713

**Aims** A frequent indication for colonoscopy referral is abnormal findings on cross-sectional imaging or PET. Colonic abnormalities may also be incidentally detected in patients undergoing imaging for other reasons. Our aim was to determine the yield of endoscopy in the investigation of intestinal abnormalities detected on cross-sectional imaging.

**Methods** Colonoscopy reports from the 1<sup>st</sup> of July 2015 to the 1<sup>st</sup> of July 2019 which had 'abnormal imaging' listed as the indication were retrieved from the St James Hospital endoscopy database. 158 patients were identified from this initial search. Duplicates, patients with external imaging, and patients with incomplete colonoscopies were excluded resulting in a final study cohort of 134 patients. Comparison between sensitivity of different cross-sectional imaging modalities was made.

**Results** 39 patients underwent PET-CT and the remainder underwent either CT or MRI. 57% ( $n = 76$ ) of patients had an endoscopic abnormality correlate with abnormal imaging findings. Comparing imaging techniques, 74% (29/39) of PET-CT versus 48% (47/95) CT/MRI patients had an endoscopic-radiological correlate  $p = 0.01$ . 22 colorectal cancers were diagnosed (16%); 4 (18%) described as "colonic thickening" with the other 18 (82%) described as a 'mass/tumour/FDG-avid abnormality with lymph nodes or concerning features'. Where imaging demonstrated 'colitis/fat stranding ( $n = 19$ )', 84% ( $n = 16$ ) of patients had no correlating findings at colonoscopy. No patients with this CT finding had a colorectal cancer.

**Conclusions** Radiological abnormalities are moderately correlated with endoscopic findings. Endoscopy should generally be performed to investigate radiological abnormalities. There is a significantly higher yield for endoscopy performed to investigate PET-CT abnormalities compared abnormalities detected on standard cross-sectional imaging. Colitis on cross sectional imaging is poorly correlated with endoscopic findings.

Saturday, April 25, 2020

14:30 – 15:00

IBD 4

ePoster Podium 5

### ePP328 RECTAL INVOLVEMENT IN CROHN'S DISEASE PATIENTS WITH ANOPERINEAL MANIFESTATIONS

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**DOI** 10.1055/s-0040-1704714

**Aims** The aim of this study was to evaluate the macroscopic rectal involvement in patients with anoperineal manifestations.

**Methods** It is a prospective and descriptive study, including Inflammatory Bowel Disease (IBD) patients who were monitored in the gastro intestinal department of our university hospital, and who developed anoperineal manifestations. Epidemiological, clinical and endoscopic data of 164 patients were gathered.

**Results** In our cohort of 164 patients with Crohn's disease, 63 had anoperineal manifestations with a prevalence of 38.41 %, among which 64.1% were men; the mean age was 34.3, with ranges from 17 to 64 years old. The median of the disease duration was 8.33 years with a standard deviation of 5.16 years. 22 (35.9%) patients had anoperineal manifestations at the onset of disease while the 41 (65.07 %) remaining developed them later on.

The observed manifestations were fistulas, fissures, skin tags, and abscesses, with the following frequencies respectively 68.8 %, 21.9 %, 18.8 % and 15.6 %. 14 patients had more than one anoperineal lesion at a time with a maximum of 3 for 2 patients (fissure, fistula and skin tag for both).

Ileocoloscopy was performed for 62 patients, while 1 patient had a rectosigmoidoscopy as he was admitted for an acute severe colitis. Endoscopy showed rectal involvement in 28 cases (44.44%), macroscopic rectal mucosal congestion in 7 cases, erosions in 5 and both in 4 cases, while an ulcerative aspect was observed in 8 cases, an erythematous mucosal in 2 cases and an aphthous lesion in one case.

**Conclusions** The prevalence of anoperineal manifestations in Crohn's disease within our cohort is 38.41 %. The most frequent manifestation being fistulas with a frequency of 68.8%, macroscopic rectal involvement was observed in 44.44 % of cases.

### ePP329 PREDICTIVE FACTORS OF ENDOSCOPIC RECURRENCE AFTER ILEOCOLIC RESECTION FOR CROHN'S DISEASE

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DOI 10.1055/s-0040-1704715

**Aims** To evaluate the risk factors for endoscopic recurrence after bowel resection in Crohn's disease (CD).

**Methods** We conducted a retrospective and analytical study including all patients with Crohn's disease who had surgery over a period of 4 years, from 2014 to 2018. Endoscopic recurrence was defined by a Rutgeerts score > or equal to I2.

**Results** Our study included 55 patients (31 men and 24 women) . The mean age of our patients was 34.65 years [15–76] with an average age at surgery of 30, 8 years, the mean time between diagnosis of (CD) and surgery was 74.18 months . 11 patients were smokers (20%). According to the Montreal classification, the disease was ileal in 39 cases (70.9%), ileocolic in 15 cases (27.2%), and colic in 1 case (1.8%) .The phenotype of CD was strituring in 65.4 % of cases and penetrating in 30.9% of cases, with the presence of ano-perineal manifestations in 9 cases (16.3%) . 13 patients had an anterior resection (23.63%). The indication of surgery was urgent in 81.1% of cases, 15 patients (27.2%) received a corticosteroid therapy before the surgical procedure. Postoperative colonoscopy was performed before 1 year in 70% of cases and beyond 1 year in 30% of cases, the Rutgeerts score was < I2 in 18 patients (32.7%), and > or equal to I2 in 36 cases (65.4%). 43 patients (78.18%) have had medical treatment after surgery, The univariate analysis showed a statistically significant relationship between the presence of extra-intestinal manifestations and post-operative endoscopic recurrence (p: 0.03).

**Conclusions** Two-thirds of patients with CD will need surgery in their lifetime. Ileocecal resection does not cure the disease, but allows a satisfactory control of lesions and a more or less long remission time. The endoscopic recurrence rate in our study was of 65% mainly being related to the presence of extra-intestinal manifestations.

### ePP330 RAMAN SPECTROSCOPY DEMONSTRATES BIOMOLECULAR CHANGES AND PREDICTS RESPONSE TO BIOLOGICAL THERAPY IN INFLAMMATORY BOWEL DISEASE (IBD)

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DOI 10.1055/s-0040-1704716

**Aims** Biological therapy in IBD is increasing however, response rates remain modest. Raman Spectroscopy describes the scattering of inelastic light giving spectra that is highly specific for individual molecules revealing tissue biochemistry. Our aim was to establish spectral changes in IBD following biological therapy and whether Raman Spectroscopy can predict response.

**Methods** IBD patients undergoing endoscopic assessment pre- and 12 weeks post-biological therapy were recruited. Biopsies were taken for ex vivo Raman Spectroscopy analysis alongside biopsies for histological analysis. Response to treatment was defined as: endoscopic score (UCEIS ≤ 1/SES-CD ≤ 4) and histological healing (Nancy (0–1) in UC/modified Riley (0) in CD). We used artificial neural networks and supervised learning model to demonstrate spectral differences and build predictive modelling.

**Results** A total of 18 patients-7 UC/11 CD were included. Using data projection, there is clear separation between responder (3 UC/3 CD) and non-responders (4 UC/8 CD). Key spectral differences between pre- vs. post-biologic in responders are demonstrated using feature extraction (table). An increase at 1302 cm<sup>-1</sup> may indicate a potential biomarker of healing.

A machine learning algorithm is able to differentiate between responders from non-responders with a sensitivity, specificity, NPV and accuracy of 100.0% (95% CI 93.5–100.0), 92.3% (95%CI 83.0–97.5), 100.0% and 95.8% (95%CI 90.5–98.6) respectively in UC and CD.

**Conclusions** We demonstrated changes in response to biological therapy and a potential biomarker for mucosal healing using Raman Spectroscopy. Using this modelling there is a potential to predict response to biological therapy, however prospective validation will not need to take place before clinical application.

► **Tab. 1** Intensity of Raman Shifts seen in pre- vs. post-biological therapy in UC and CD

Raman Shift (cm-1)	Pre biologic UC (Intensity)	Post biologic UC (Intensity) Cross-validation 0.95	Pre biologic CD (Intensity)	Pre biologic CD (Intensity) Cross-validation 0.94
1001	2.99	2.74	3.57	2.79
1302	1.34	1.52	1.11	1.53
1449	3.51	3.52	3.69	3.29
1656	1.99	1.72	1.82	1.30

Saturday, April 25, 2020

14:30 – 15:00

Upper GI: Endoscopic cancer treatment 2

ePoster Podium 6

### ePP331 EXPERIENCE OF USING PYLORODUODENAL STENTING IN CANCER PATIENTS

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**DOI** 10.1055/s-0040-1704717

**Aims** With the progression of cancer, there is often a violation of patency in the stomach and duodenum. This leads to a loss of protein (hypoproteinemia) in the body, which in turn can lead to protein-free swelling on the legs and deterioration of the patient. Pyloroduodenal stenting can be a manipulation of choice.

**Methods** The study included 181 gastric outlets stenting in 156 patients for five years. After stenting systemic chemotherapy was planned without mention of curative surgery. There were 103 patients (66%) with distal stomach stenosis; 45 patients (28.9%) with pancreatic tumor involving the duodenum and 8 patients (5.1%) with tumor compression of the area from the outside. The stent was placed once in 136, twice – in 15, three times – in 5 cases. We used uncovered pyloroduodenal or colorectal stents for the primary stenting. The cause of repeated stenting was tumor ingrowth into the stent with secondary stenosis formation we met in 15 cases. In these cases, covered or partially covered stents of the same length or longer.

**Results** Technical success of primary stenting was in 100%, clinical success – in 137 cases of stenting (87.8%). The maximum period of observation was 19 months. Early complications were noted in 16 cases (10.3%), among them: migration of the stent – 12, pain syndrome – 2, pancreatitis – 1 and tumor perforation – 1. These complications were not the reason for emergency surgical interventions, some of them were stopped by conservative methods, or repeated endoscopic interventions were required.

**Conclusions** It is a safe option for the patients, who are not candidates for curative surgery.

### ePP332 ENDOSCOPIC SUBMUCOSAL DISSECTION (ESD) FOR GASTRIC LESIONS: A SINGLE ITALIAN CENTER EXPERIENCE

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**DOI** 10.1055/s-0040-1704718

**Aims** The aim of this study is to report the short- and long-term outcomes of a cohort of patients from a single Italian center who underwent gastric ESD.

**Methods** A retrospective analysis of a prospectively maintained registry of all gastric ESDs performed at Humanitas Research Hospital during a 10-year period (January 2010 – January 2019) was performed. Expanded indication criteria for gastric ESD were used.

**Results** During the study period, 158 consecutive gastric lesions were treated by ESD. On final pathology, 91 lesions were adenocarcinoma (57.4%) with a subclassification of pT1a: 56 (61.5%), pT1b: 31 (34.%) and pT2: 4 (4.4%). Thirty-eight lesions were diagnosed as high grade dysplasia (24.%), 23 were low grade dysplasia only (14.5.%) and 6 were non-adenomatous (3.8%). An en-bloc resection was achieved in 136 patients (86%). R0 resection was reported in 116 patients (73.4%), while 30 yielded a R1 resection (19%) and the remaining 12 procedures (7.6%) were classified as Rx. Twenty-two patients (14%) experienced a complication (11 early, 10 delayed, 1 both early and delayed). The most common complication was bleeding (17 patients, 10.7%) while 5 perforations (3%) were reported. All these complications were successfully treated endoscopically except 3 patients who required surgery. No deaths occurred related to the ESD procedure.

Overall, 23 patients (14.5%) underwent surgery because of non-curative resections. Thirteen patients (8.2) were lost at follow-up. Mean follow-up was 37.2 months (range 122–3). During follow-up, 6 local recurrences of adenoma with LGD at the previous ESD site were diagnosed while 2 patients developed a cancer in a site different from ESD and were referred to surgery.

**Conclusions** In a large western series of ESD for early gastric neoplasia ESD was associated with a significant proportion of curative resection and quite low rate of complications as well as disease recurrence.

### ePP333 SELF-COMPLETION ENDOSCOPIC SUBMUCOSAL DISSECTION USING ENDOSABER FOR SUPERFICIAL ESOPHAGEAL NEOPLASMS

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**DOI** 10.1055/s-0040-1704719

**Aims** Endoscopic submucosal dissection (ESD) is an effective local treatment for gastrointestinal tract tumors. We invented self-completion ESD (SESD) using a novel needle-type knife, the Endosaber, which can cut, coagulate, and inject. SESD eliminates the need for assistance or use of additional devices, such as injection needles and hemostatic forceps. This was the first study to evaluate the effectiveness of SESD in patients with superficial esophageal neoplasms.

**Methods** Patients with superficial esophageal neoplasms measuring ≤ 20 mm were enrolled and treated using SESD. A single operator, without an assistant, performed ESD for the superficial esophageal neoplasm using the Endosaber, without any additional device. The primary measured outcome was the completion rate of SESD. The secondary outcomes included procedure time, en-bloc and complete resection rates, and complication rates, including the incidence of perforation and delayed bleeding.

**Results** Ten patients with Ten lesions were enrolled. The median size of the resected lesions was 17 mm [interquartile range: 9.5–20]. All SESD procedures were completed, and its completion rate was 100%. The median procedure time was 26 minutes [18–25]. En-bloc and complete resection rates were 100% and 90%. Complication rate was 0%.

**Conclusions** SESD is effective for the treatment of superficial esophageal neoplasms. It reduces the number of devices and assistance required, allowing for a simple and cost-effective ESD procedure to remove superficial esophageal neoplasms.

Saturday, April 25, 2020

14:30 – 15:00

EUS-guided anastomoses

ePoster Podium 7

### ePP334 ENDOSCOPIC ULTRASOUND-GUIDED GASTRO-ENTERIC ANASTOMOSIS: A SYSTEMATIC REVIEW AND META-ANALYSIS

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**DOI** 10.1055/s-0040-1704720

**Aims** Endoscopic-ultrasound (EUS)-guided gastro-enteric anastomosis using lumen-apposing metal stents (LAMS) is emerging as an alternative, minimally-invasive therapy for treating gastric outlet obstruction (GOO), as well as restoring bowel continuity in patients with surgically altered anatomy. Literature on this subject is heterogeneous, with variable reporting of techniques and outcomes.

Our aim was to perform a meta-analysis of published data on EUS-guided enteric anastomosis, providing a pooled estimate of technical and clinical outcomes.

**Methods** The protocol was registered in PROSPERO (Reg. no. CRD42018111110). PubMed, Embase, Scopus, and Web of Science databases were searched until February 2019 for studies describing > 5 patients undergoing EUS-guided enteric anastomosis. Screening of titles/abstracts, full-text review, and data extraction was performed by two authors. Data regarding indication, technique, technical and clinical success, adverse events, follow-up were collected. PRISMA methodology was used. Pooled technical and clinical success and adverse events rates were calculated. Quality, publication bias, and heterogeneity were explored.

**Results** Twelve studies (290 patients) were included. Main procedure indication was GOO(62.4%). Direct puncture technique was the most frequent (68.2%). Pooled technical success rate was 93.5%[95% confidence interval (CI) 89.7–6.0%; $I^2$ :0%], while clinical success rate was 90.1%[95% CI 85.5–93.4%; $I^2$ :0%]. Pooled total adverse events rate was 11.7% [95% CI 8.2–16.6%; $I^2$ :0%]. When stratified for adverse event severity, mild/moderate pooled adverse event rate was 10.6% [95% CI 7–15.6%; $I^2$ :3.4%], while severe/fatal adverse event rate was 2.9% [95% CI 1.4–6.1%; $I^2$ :0%]. Mean procedure time was 63.5 ± 35.7 minutes, and mean length of hospital stay 4.9 ± 2.7 days. No publication bias or heterogeneity was found, although some included studies were graded low quality.

**Conclusions** EUS-guided enteric anastomosis, performed by expert endoscopists in referral centres, has a high rate of technical and clinical success. The procedure appears to be relatively safe, and a minimally invasive alternative to surgery in expert hands. Further prospective studies and technique standardisation are warranted to generalise these results.

### ePP335 DIRECT ENDOSCOPIC ULTRASOUND-GUIDED GASTROENTEROSTOMY WITH LUMEN-APPPOSING METAL STENTS: A RETROSPECTIVE BICENTER STUDY ON TECHNICAL FEASIBILITY AND CLINICAL OUTCOME

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DOI 10.1055/s-0040-1704721

**Aims** Endoscopic ultrasound-guided gastroenterostomy (EUS-GE) with lumen apposing metal stents (LAMS) appears to be a promising intervention in the management of gastroduodenal obstruction as a less invasive alternative to surgery. The aim of this study was to evaluate the feasibility, safety and clinical outcome of direct EUS-GE in patients of surgical high-risk or in a palliative setting.

**Methods** This retrospective bicenter study included patients who underwent direct EUS-GE with LAMS (April 2017 to November 2019) investigating feasibility, technical success (correctly placed LAMS), clinical outcome (successful oral nutrition) and procedure-associated complications. Direct EUS-GE was performed using the Hot-Axios-Stent (Boston Scientific; n = 1: 10 × 10 mm, n = 5: 15 × 10 mm, n = 5: 20 × 10 mm). For this, the intestinal target loop was filled with fluids and subsequently directly punctured with the stent delivery system followed by stent release under endosonographic control.

**Results** A total of 24 patients (50% men/50% women; mean age 67.2 years) underwent direct EUS-GE for gastroduodenal obstruction of malignant (n = 21), benign (n = 2) or unknown (n = 1) etiology.

The technical success rate of correctly placed LAMS was 100% (24/24). However, in 17 % of patients (4/24) the distal flange of the stent was unintendedly released in the peritoneal cavity due to loss of contact to the target loop while performing the first puncture but correct stent placement succeeded in a second attempt. 92% of the patients (22/24) benefited from the intervention by showing reduced nausea and vomiting and the ability of oral food intake.

**Conclusions** Direct EUS-GE with LAMS has a favorable risk-benefit-profile for patients with gastroduodenal obstruction showing high technical success rates, manageable complications and rapid symptom relief.

### ePP336 EUS-DIRECTED TRANSGASTRIC INTERVENTION (EDGI) IN PATIENTS WITH SURGICALLY ALTERED ANATOMY: MONOCENTRIC EXPERIENCE

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DOI 10.1055/s-0040-1704722

**Aims** In patients with Roux-en-Y gastric bypass (RYGB), access to duodenum, biliopancreatic system or excluded stomach is challenging. We evaluated efficacy and safety of EUS-directed transgastric intervention (EDGI) to create a gastro-gastric or jejuno-gastric anastomosis in RYGB patients using lumen apposing metal stent (LAMS).

**Methods** Monocentric retrospective study of EDGI in RYGB patients between January 2018 and October 2019.

**Results** 9 patients (5 women; mean age 57 ± 6 years) underwent 10 EDGI with LAMS. Technical and clinical success rates were 100%. The indications for performing the EDGI procedure were: treatment of chronic pancreatitis (n = 3, multiple plastic stents), treatment of a biliary obstruction (n = 4; stone extraction in 3 and 1 choledochobulbostomy) and diagnostic procedure (one occult hemorrhage evaluation and one targeted duodenal biopsy). In one of these patients, a redo EDGI was performed due to a recurrence of lithiasis in pancreatic duct after ablation of LAMS (after one year of follow up). EDGI was performed in two steps (8/10; 80%): first step EUS-guided anastomosis and second step transgastric intervention spaced on average 12 ± 4 days. Two EDGI was performed in one step (2/10), one of them due to severe acute cholangitis. Average time of EUS-guided anastomosis was 53 ± 11 min. Two adverse events were encountered: 1 intraperitoneal LAMS placement and 1 LAMS dislodgment during the second step procedure.

**Conclusions** EDGI appears to be feasible and effective in RYGB patients to perform antegrade diagnostic and therapeutic endoscopic procedures through LAMS. Care should be taken to deal with possible adverse events.

Saturday, April 25, 2020

14:30 – 15:00

Innocent & guilty polyps

ePoster Podium 8

### ePP337 RISK OF LYMPH NODE METASTASIS IN PT1SM2 COLORECTAL CARCINOMA: RESULTS OF BICENTRIC RETROSPECTIVE STUDY

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DOI 10.1055/s-0040-1704723

**Aims**

**Primary:** Evaluate the recurrence-free survival rate in all patients and in pre-defined subgroups at 12 and 18 months.

**Secondary:** Measure the lymph node and/or metastatic invasion of operated colorectal adenocarcinoma pT1sm2, evaluate the rate of complete remission.

**Methods** Patients with endoscopic or surgical resection of colorectal adenocarcinoma pT1sm2 between 2012 and 2018 at Institut Paoli Calmettes (Marseille, France) and Hôpital Edouard Herriot (Lyon, France) were included. We chose to evaluate three groups:

**1st:** "supposedly good prognosis" group (SBP) included patient with endoscopic resection (ER) alone and all favorable pathological factors; patients with

primary surgery, pT1sm2 and the same criteria; patients with an ER and additional surgery with pT0N0.

**2nd:** supposedly effective endoscopic resection (SEER): ER alone and no pejorative criteria, ER with additional surgery with pT0N0 and negative deep margins. **3rd group:** Endoscopic resection alone with the 5 favorable pathological factors.

**Results** 69 patients were included with a median age of 68 years. The median follow-up was 18 months. 52 patients had the SBP group criteria, 12 had SEER and 6 had endoscopic resection alone. In the SBP group, the recurrence-free survival rate was 100% at 12 months and 96% compared to 85% and 75% for others patients (HR at 0.10 [0.01,0.93];  $p < 0.044$ ). Patients in the SEER group had a 100% and 80% survival rate without recurrence at 12 months and 18 months compared to 96 and 93% for others patients ( $p = 0.631$ ). The "endoscopic resection alone" group, the recurrence-free survival rate at 18 months was 75% compared to 93% for other patients ( $p = 0.409$ ). The complete remission rate was 100% for each group.

**Conclusions** Endoscopic resection of pT1sm2 adenocarcinoma without histological pejorative criteria might be a good candidate to avoid additional surgery. A longer follow-up and more patients are needed to confirm this approach.

### ePP338V A RARE FINDING IN AN ATYPICAL LOCATION: COLORECTAL XANTHOMAS

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DOI 10.1055/s-0040-1704724

Gastrointestinal xanthomas are accumulations of foam cells in the lamina propria, usually found in the gastric mucosa, although they can occur in other sections of the digestive tract.

A 59-year-old woman performed gastroscopy and colonoscopy for anemia. Gastroscopy showed a yellowish rough plate(1). On colonoscopy, from rectum (2), oval, yellowish, granular-looking plates(3) were observed, which extended throughout the colon(4), reaching the periappendicular mucosa(5). Biopsies confirmed the finding of xanthomas.

**Conclusions** Atypical presentation of xanthomas due to its location in the large intestine, its extension from the rectum to the cecum and the coexistence of gastric and colorectal location, not previously described.

### ePP339 EVALUATION OF ADENOMA- AND POLYP- DETECTION-RATES IN COLONOSCOPY OF INPATIENTS AND OUTPATIENT

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DOI 10.1055/s-0040-1704725

**Aims** Colonoscopy is the examination of choice for colorectal-cancer-screening and diagnostics of lower gastrointestinal tract. Beside of withdrawal time, cecal intubation and high resolution endoscopy, the adenoma-detection-rate (ADR) and polyp-detection-rate (PDR) demonstrate important quality metrics in colonoscopy. However, ADR and PDR only were evaluated in outpatients and colorectal cancer screening. The significance of ADR and PDR for inpatients has not been evaluated so far.

**Methods** In this retrospective monocentric study ADR and PDR were evaluated in outpatients and inpatients between 2015 and 2017. Indications, comorbidities, cecal and ileal intubation, complications and interventions were assessed. Fisher's exact test, Student's t-test and Chi-Square-test were used to identify dispersions between both groups.

**Results** We screened 3162 patients who underwent colonoscopy in our institution. We excluded 326 patients due to prior colorectal surgery. Finally, 1194

outpatients and 1642 inpatients were analyzed. Baseline characteristics were comparable. Main indication for colonoscopy was surveillance in outpatients and diagnostic for bleeding in inpatients. Both PDR (46.9% vs. 46.2%) and ADR (21.3% vs. 20.5%) revealed no significant differences between the cohorts. Outpatients and inpatients showed comparable rates of polyps per patient (1.30 vs. 1.39), but in inpatients more adenoma with low-grade (377 vs. 662) and high-grade dysplasia (40 vs. 91) as well as more colorectal carcinoma (5 vs. 34) were registered ( $p < 0.01$ ). Polyps in outpatients were smaller in size (6.6 mm vs. 11.9 mm,  $p < 0.001$ ) and both cecal and ileal intubation was more often achieved (92.7% vs. 88.6% and 60.0% vs. 48.9%,  $p < 0.01$ ). Perforation was a rare complication in both groups (0.4% vs. 0.1%, n.s.) but severe bleeding occurred more often in inpatients (1.3% vs. 3.1%,  $p < 0.01$ ).

**Conclusions** ADR und PDR can be used as colonoscopy quality metrics in both outpatients and inpatients and indicate a comparable detection of polyps and adenomas between both groups.

Saturday, April 25, 2020

15:00 – 15:30

Esophageal stenosis and motility disorders ePoster Podium 1

### ePP340 ORGANIC ESOPHAGEAL STENOSIS: ETIOLOGIES AND MANAGEMENT

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DOI 10.1055/s-0040-1704726

**Aims** Oesophageal stenosis is a frequent pathology confronted in endoscopy. The clinical presentation is mostly a progressive dysphagia with a negative impact on the quality of life. One of the main therapeutic approaches is endoscopic dilatation.

Our work aimed to identify the main etiologies of organic oesophageal stenosis in our context and report their management.

**Methods** It was a retrospective and descriptive study enrolling all cases of organic oesophageal stenosis in our department for 29 years. Functional oesophageal strictures were excluded.

**Results** The entire number of patients followed for organic esophageal stenosis and had at least one dilatation was 554. The mean age of patients was 46.2 years. The main cause for the consultation was dysphagia in 96.2%. Other clinical signs were odynophagia in 5.2%, and upper gastrointestinal bleeding in 2.16%. The median time from onset of symptoms to the first dilatation was nearly 2 years. The etiologies were the following: peptic stenosis in 38.62% of patients, Plummer-Vinson syndrome in 26.7% of patients, caustic stenosis in 11.2% of cases, post-surgical in 11.01% of cases, tumor stenosis in 9.56% of patients and post-radiation stenosis in 1.62% of patients. All our patients benefited from endoscopic dilatation. The dilatation was mainly performed using Savary Gilliard bougies in 91.8%. The immediate success of the procedure was noted in 95.2% of patients. The average duration of follow-up was approximately 3 years. The median number of dilatation sessions was 3.2 for all types of stenosis combined. We have used a metallic stent in 3.42% of the patients while 6.1% of the patients were operated. Complications of dilatation were very rare; we had only 2 cases of perforation.

**Conclusions** The main etiology of the organic stenosis was the peptic stenosis followed by Plummer-Vinson syndrome. The treatment was based primarily on endoscopic dilatation with bougies with an immediate success rate of 95.2%.

## ePP341 SCARRY ESOPHAGEAL STRICTURES AFTER CHEMICAL BURNS. ENDOSCOPIC DIAGNOSTICS AND TREATMENT

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DOI 10.1055/s-0040-1704727

**Aims** Estimate the reasons, treatment possibilities and prognosis of treatment of scarry esophageal strictures after chemical burns.

**Methods** We use the method of endoscopic-controlled guide-wire conducted bouging for esophageal stricture treatment. Anesthesiologic assistance is highly required for it. We perform in-patient short-course bouging series and time-related periodic bouging up to bouge size 13 mm to supply patient with swallowing function. First bouging normally starts after X-ray investigation. We apply safe guide-wire installed through instrumental channel to perform bouging.

**Results** Normally we perform average 300 bouging procedures yearly, started since 1998 year. It is about 400 patients passed through the treatment. The main reason of stricture was alkaline and acetic acid intake. The most effective tactics of bouging was intravenous anesthesiologic support. Best results were showed in case of early bouging 14–21 days after chemical burn. We analyzed 560 patients with chemical burns. 559 of them received step-by-step bouging with positive clinical effect. One patient was operated on with esophagectomy and coloplastics after 20 years of bouging – died because of surgical complications. Most of patients receive supportive bouging 1–5 times a year to avoid dysphagia. In 20 patients we performed endoscopic electrosurgical cutting of scars to increase the effect of bouging. For 20 years we had only two esophageal perforations requires surgery with 100% survival.

**Conclusions** Endoscopic bouging is rather safe and effective method to treat scarry chemical strictures with potentially low rate of significant complications. It requires a strategic and team related approach. It can be provided as in-patient and out-patient mode, depended on medical experience.

## ePP342 POEM PROCEDURE PERFORMED IN PATIENTS WITH ESOPHAGEAL MOTILITY DISORDERS NOT INCLUDED IN THE CHICAGO CLASSIFICATION – EXPANDING POEM INDICATIONS

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DOI 10.1055/s-0040-1704728

**Aims** To present our experience in POEM for patients with esophageal motility disorders (EMD) not included in the Chicago Classification (CC).

**Methods** Case series from a national prospective database June 2016 to November 2019.

**Results** Patients 1 & 2: 48 y male and 52 y female. Dysphagia and chest pain. Previous interventions: patient 2 had Botox injection and endoscopic dilatation before POEM. Manometry: normal peristaltic segment in upper esophageal body (S2) but rapidly propagated vs compartmentalized pressure in distal esophageal body (S3). Normal distal latency (DL) and normal lower esophageal sphincter (LES) relaxation. POEM: 11 and 13 cm esophageal body + 2 cm gastric manometry-guided myotomy. Both asymptomatic 28 and 7 months after POEM. No esophagitis was found. One of the patients had abnormal pH testing (7.2%).

Patient 3: 68 y male. Dysphagia and chest pain. Endoscopy: “spiral staircase” esophagus. Manometry: post swallow persistently contracted segment with normal distal latency not fulfilling Jackhammer Esophagus (JE) criteria with normal LES relaxation. POEM: 12 cm esophageal body + 2 cm gastric myotomy performed. Asymptomatic 25 months post procedure.

Patient 4: 56 y male. Dysphagia and chest pain. Previous interventions: LHM performed in 2011. Manometry: premature contractile segment in upper esophageal body with aboral compartmentalized pressure preceding a surgically abolished distal segment. Normal LES relaxation. POEM: 10 cm esophageal body exclusive myotomy. Asymptomatic 14 months after procedure.

Patient 5: 78 y female. Dysphagia. Previous interventions: three dilations performed. Manometry: 11 cms simultaneously contractile mid and distal esophageal segment. Abnormal LES relaxation. POEM: 15 cms esophageal body + 2 cm gastric myotomy. Asymptomatic 1 month after procedure

**Conclusions** POEM guided through manometry is a state-of-the-art technique with promising results that allows treatment of EMD undefined by the CC. Thus, guidance of HRM can expand POEM indications. This short series is a pilot study preceding a multicenter evaluation.

Saturday, April 25, 2020

ERCP: Challenging anatomy

15:00 – 15:30

ePoster Podium 2

## ePP343 A SECOND ATTEMPT OF CBD CANNULATION AFTER ERCP FAILURE: A SYSTEMATIC REVIEW AND POOLED ANALYSIS

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DOI 10.1055/s-0040-1704729

**Aims** ERCP initially fails in 10% to 20% of patients of difficult anatomy/inability to cannulate the papilla. In such instances, the indication for repeating biliary intervention should be carefully reconsidered. We assess the efficacy and safety of the second attempt after first ERCP failure.

**Methods** we searched multiple databases (Embase, PUBMED; Cochrane) to identify 9 studies for a total of 540 patients, reporting the efficacy and safety of a second attempt of ERCP after first failure. Outcomes were clinical success, adverse events. Pooled analysis was performed using a proportion with MedCalc software

**Results** Second attempt had successful cannulation rate of 84.79% (PR) (95% CI 81.5–87.7) with significant heterogeneity I<sup>2</sup> 81%, and a pooled rate of adverse events of 5% (PR) 95%CI 2.42–8.6%.

**Conclusions** According to our results second attempt is an effective and safe treatment in case of cannulation failure. However, we should be taking account the endoscopist expertise and case volume. Further studies are needed to define the role of second attempt in case of difficult cannulation

## ePP344V NEW UNDERWATER CAP-ASSISTED TECHNIQUE FOR ENDOSCOPIC RETROGRADE CHOLANGIOPANCREATOGRAPHY (ERCP) IN A PATIENT WITH SURGICALLY ALTERED ANATOMY

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DOI 10.1055/s-0040-1704730

**Background** ERCP-rate in surgically-altered-anatomy (SAA) patients has increased. Given the difficulty to reach the papilla/the complicated angulation, treating SAA-patients is challenging. The used approaches are transmural-accesses (EUS-guided) and transluminal-access (enteroscope-mediated). ERCP-success-rate in SAA patients is low.

**Methods:** A 76 y.o. man with previous partial-gastrectomy with Roux-en-Y reconstruction, complained epigastric-burning-pain. At the cholangio-MRI: intra-hepatic bile-ducts dilation with a biliary-duct-stone.

**Results** ERCP was performed with a 160 cm-pediatric (CAP-assisted) colonoscope (11.5 mm, 3.2 mm) using the underwater-technique to overcome the structural-abnormalities.

**Conclusions:** Thanks to the underwater-technique we intubated an insidious surgically-altered-anatomy, reducing the friction of the intestinal-walls despite length/angles. The colonoscope allowed us to use ERCP-standard-devices and eased papilla-cannulation despite its orientation, thanks to the frontal-view. The use of a CAP-assisted-pediatric-colonoscopy with the underwater-technique should be considered as a promising approach that allows an easier/faster procedure.

### ePP345V ADVANCED CHOLANGIOSCOPY GUIDED LITHOTRIPSY IN A PATIENT WITH A BILLROTH II GASTRECTOMY – AN INNOVATIVE SOLUTION

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DOI 10.1055/s-0040-1704731

**Introduction** Endoscopic removal of large CBD stones in patients with Billroth II gastrectomy is difficult and complex.

**Aims & Methods** We present the video of a 73 year-old-man, with Billroth II sub-total gastrectomy, with a large CBD stone treated using spyglass-guided laser lithotripsy.

**Results** A therapeutic gastroscope was used, allowing the insertion of the Spyglass cholangioscope; holmium laser lithotripsy was performed with complete removal of the stone.

**Conclusion** This is one of the first descriptions of the use of Spyglass-assisted lithotripsy in a patient with a Billroth II gastrectomy, with several technical adaptations to ensure the success of the treatment.

Saturday, April 25, 2020

15:00 – 15:30

Treatment of diverse cystic lesions

ePoster Podium 3

### ePP346 ENDOSCOPIC DRAINAGE OF PANCREATIC AND PERI-PANCREATIC COLLECTIONS: A RETROSPECTIVE ANALYSIS

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DOI 10.1055/s-0040-1704732

**Aims** Pancreatic/peri-pancreatic fluid collections (PFC) are a common complication of acute or chronic pancreatitis. Symptomatic pseudocysts (PP) and encapsulated necrotic collections (WOPN) require treatment, being endoscopic drainage one of the therapeutic options. The aim of this study is evaluating the efficacy and safety of endoscopic drainage in the treatment of PP and WOPN.

**Methods** Retrospective analysis from 44 patients (male-27; mean age-58.2 ± 13.3 years) with symptomatic PFC, who underwent endoscopic drainage from 2006 to 2019. The procedure was performed under

echoendoscopic control in 22 patients, and by direct puncture of gastric or duodenal compression determined by the collection in the remaining ones. Technical success, clinical success and complication rate were evaluated. Moreover, potential factors associated with clinical failure were also accessed.

**Results** Over the period given, 21 patients with PP and 23 with WOPN were assigned to endoscopic drainage. Five patients had already undergone an unsuccessful percutaneous drainage, and other 3 had been surgically intervened with subsequent recurrence of PFC. The average size of the collections was 13.6 ± 6.5 cm and the average length of stay was 35.4 ± 30.8 days. Endoscopic drainage was technically successful in 90.9% of the cases and clinical resolution was achieved in 77.5% of them. Necrosectomy sessions were performed in 15 patients (68.2% of those with WOPN) and complications occurred in 17 patients (38.6%).

Despite being a small sample, the etiology seems to be related to the type of collection observed, and both lithiasis and previous performance of ERCP seem to be more associated with the onset of WOPN. Chronic pancreatitis seems to be more related to PP (p < 0.006).

**Conclusions** Endoscopic drainage of PFC is a slightly invasive procedure with a very acceptable clinical success rate. However, it might be associated with complications, some of them significant, and associated with technical failure. Surgery may be indispensable in this specific context.

### ePP347 ENDOSCOPIC ULTRASOUND-GUIDED DRAINAGE OF PELVIC ABSCESS WITH LUMEN-APPPOSING STENT

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DOI 10.1055/s-0040-1704733

**Aims** Endoscopic ultrasonography (EUS) is a well-established technique for transenteric drainage of abdominal collections that can replace surgical or percutaneous approach. In the same way, lumen-apposing stents have changed these patients management.

**Methods** Drainage of pelvic abscess with lumen-apposing stent (Hot-Axios).

**Results** 54-year-old patient diagnosed of acute colonic diverticulitis complicated with abdominal collections: two of them located in the right iliac fossa (50 mm both) were treated with percutaneous drainage (8Fr pig-tail); another (60 x 50 mm) located between the bladder and rectum which was drained EUS-guided. Collection with echogenic content was located 13 cm proximal to the anal canal. A Hot Axios stent (10 mm) was placed between collection and rectal lumen draining pus. Control abdominal CT 20 days after placing the stent showed complete collections resolution so Axios stent was removed at day 21th. The patient remains asymptomatic and surgical treatment has not been required.

**Conclusions** Pelvic abscess treatment has historically been surgical and/or percutaneous drainage. Recently, EUS-guided drainage of pelvic collections has proven to be effective and safe, that is why it should be considered as a valid alternative to conventional techniques.

### ePP348V GASTRIC DUPLICATION CYST MIMICKING LARGE CYSTIC LYMPHANGIOMA: VIDEO CASE

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DOI 10.1055/s-0040-1704734

A 28-years -old man, presented with epigastric pain during three months. Abdominal Ultrasound revealed a large cyst with echogenic component . Abdominal MRI confirmed the presence of a well limited cyst with high signal T2, located between the diaphragm and the spleen. Endoscopic ultrasound demonstrated a well-limited echogenic lesion of 7 cm with heterogeneous

content. It seems to be adjoining to the gastric wall and surrounded by a thick wall of 4 mm. it comes in close contact of diaphragmatic pillar, spleen and splenic hile .The patient underwent a resection of the cyst. Histological analysis showed a gastric duplication cyst.

**Saturday, April 25, 2020** **15:00 – 15:30**  
**Artificial Intelligence for colonoscopy and ePoster Podium 4**  
**small: Bowel endoscopy**

### ePP349 THE USE OF INTEGRATED 2D AND 3D BASED DEEP NEURAL NETWORK AS AN ADJUNCT DETECTION TOOL IN COLONOSCOPY

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**DOI** 10.1055/s-0040-1704735

**Aims** Deep convolution neural network (CNN) has been studied for identifying lesions in colonoscopy videos using colored 2D images. The benefit from using a 3D based CNN is unknown. The aim of this study is to assess the utility of an integrated CNN framework that utilizes color (2D) and depth (3D) information for automated lesion detection

**Methods** We used a 3D depth CNN trained through NYU- Depth V2 dataset (1449 images), to produce depth information for each colored image obtained from colonoscopy videos. A region-based CNN (R-CNN), focusing on region of interest (lesions), initialized with ImageNet and COCO weights for future extraction, was designed to take both color and depth information for lesion detection.

**Results** We used 612 de-identified colonoscope frames containing only lesions, extracted from 31 image sequence captured on 23 patients to train the R-CNN. The regions in colonoscope frames containing only lesions were annotated using VGV (Visual Geometry Group) Image Annotator. Sixty percent of images were augmented (scaled and rotated) during each training iteration to ensure CNN does not use the same image set for every step.

The 3D depth CNN trained framework was evaluated using 552 colonoscopy video frames of different image resolutions. The detection result and the performance with ImageNet and COCO weights is shown in the Table. An average performance on precision and sensitivity of 78.2% and 82.5%, respectively was achieved.

**Conclusions** The proposed CNN framework showed better results than colored based R-CNN. The results are encouraging and future work includes using accurate 3D training dataset obtained from similar imaging ranges to improve the 3D depth CNN performance

► **Tab. 1** Performance with ImageNet and COCO weights

Weights	Precision %	Sensitivity %
ImageNet	73.29	82.39
COCO	83.16	82.67

### ePP350 IMPROVING OPTICAL DIAGNOSIS OF COLORECTAL POLYPS USING COMPUTER-AIDED DIAGNOSIS (CADX)

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**DOI** 10.1055/s-0040-1704736

**Aims** Optical diagnosis is the endoscopic prediction of histopathology of colorectal polyps detected at colonoscopy. Optical diagnosis remains challenging with accuracies of 71-90% in the Dutch bowel cancer screening program, exposing patients to risks of incorrect diagnosis. We propose a new methodology to improve the diagnostic accuracy of optically diagnosing colorectal polyps by Computer-Aided Diagnosis (CADx).

**Methods** We prospectively compared the optical diagnosis of colorectal polyps made by CADx with experts from the international BLI-expert group and Dutch novices. The optical diagnosis was first made based on intuition, with a time limit of 30 seconds. After a washout period of four weeks, the same set of polyps was optically diagnosed based on a clinical classification model; BASIC (BLI Adenoma Serrated International Classification). CADx classified colorectal polyps by exploiting machine-learning algorithms.

**Results** Colorectal polyps of the following histopathology were included: hyperplastic polyp (n = 15), adenoma (n = 39), sessile serrated adenoma (n = 4) and adenocarcinoma (n = 2). Five experts, with a mean colonoscopy experience of 16.0 years and nine novices (mean 2.3 year) participated. The CADx algorithm was based on benign versus premalignant polyps. A subgroup analyses for experts and novices was performed to allow for an adequate comparison with CADx. The diagnostic accuracy of experts (81.0%) was significantly higher in comparison to novices (64.2%) based on BASIC and based on intuition (78.6% vs 63.8%). CADx had a significantly higher overall diagnostic accuracy of 93.8% (p < 0.001). Sensitivity (91.7% vs. 62.7% and 52.6%) and specificity (100.0% vs. 95.3% and 93.3%) were also significantly higher for CADx compared to both experts and novices.

**Conclusions** The clinical classification model BASIC increased the diagnostic accuracy of experts and novices compared to intuitive optical diagnosis. CADx diagnosed colorectal polyps significantly better in comparison to experts and novices. These findings stress the need for further validation of CADx for future implementation into daily endoscopy practice.

### ePP351V ARTIFICIAL INTELLIGENCE ALLEVIATES THE TEDIOUS TASK OF READING SMALL BOWEL CAPSULE ENDOSCOPY RECORDINGS

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**DOI** 10.1055/s-0040-1704737

Artificial intelligence (AI) is a disruptive technology that has the potential of alleviating the tedious and time-consuming task of reading small bowel (SB) capsule

endoscopy (CE) videos. This videocase illustrates the concept of automated SB reading of CE recordings. Two SB-CE (Pillcam SB3, Medtronic, USA) recordings are presented, one with angiectasias, one with superficial ulcerations. All lesions identified by CE expert readers were detected, segmented and characterized as well by a neural network-based software (Augmented Endoscopy, France), with significant decreases of the reading times (30 vs 5 minutes).

Saturday, April 25, 2020

15:00–15:30

IBD 5

ePoster Podium 5

### ePP352 CONTRIBUTION OF COLONOSCOPY IN CHRONIC DIARRHOEA

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DOI 10.1055/s-0040-1704738

**Aims** Chronic diarrhoea is a frequent reason for gastroenterology consultations. Its etiologies are numerous and sometimes associated. Colonoscopy plays a fundamental role in the exploration of chronic diarrhoea. It is used to characterize colonic lesions and perform biopsies. The aim of our work is to study the place of endoscopy in the etiological assessment of chronic diarrhoea.

**Methods** This is a retrospective study of 410 cases conducted in the Gastroenterology II Department of the Mohamed V Military Training Hospital in Rabat from January 2008 to January 2016 were included all patients who present chronic diarrhea with colonoscopy.

**Results** The average age of our patients was 50 years, with a male prevalence of 70%. Diarrhoea was mucous in 26% of cases; glairo-bloody in 23% of cases; liquid in 51% of cases. The associated signs were abdominal pain in 54% of cases; Koenig's syndrome in 6% of cases; rectorragies in 8% of cases; anemic syndrome in 26% of cases; AEG in 12%; extra digestive manifestations in 5% of cases.

Colonoscopy was total in 95% of cases. The endoscopic aspects found are an aspect of inflammatory colitis in 43% of cases (28% Crohn; 15% RCH); colonic polyps in 12% of cases; colonic polyposis in 2% of cases; an ulcerous tumor process – budding in 4% of cases; colonoscopy was normal in 70% of cases. Catheterization of the ICD was performed in 70% of cases, abnormalities of the last ileal loop and ileo-caecal valve were found in 12.5% of cases.

**Conclusions** Colonoscopy plays a fundamental role in the diagnosis of chronic diarrhoea. The endoscopic aspects in our series are dominated by the normal and evocative aspect of the MICI.

### ePP353 HD-WLE COLONOSCOPY AND CHROMOENDOSCOPY IN THE DETECTION OF DYSPLASIA IN LONG-STANDING ULCERATIVE COLITIS

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DOI 10.1055/s-0040-1704739

**Aims** Improving approaches to the endoscopic diagnosis of ulcerative colitis (UC)-associated dysplasia includes improvement in the detection of dysplasia and labour intensity reduction of the diagnosis process. In this regard, the study aimed to determine the effectiveness of HD-WLE colonoscopy and chromoendoscopy in the detection of dysplasia in long-standing UC.

**Methods** A single-centre prospective study (November 2017-June 2019) involving 140 treated patients with an average duration of UC about 16 years (8–44) conducted. All patients underwent HD-WLE colonoscopy, chromoendoscopy (indigo carmine), targeted biopsy, the subsequent histological study. We analyzed the endoscopic data (Paris classification, SCENIC, Kudo's pit

pattern), and the histological data (Ridell's classification), evaluated the effectiveness of endoscopic diagnostic.

**Results** HD-WLE colonoscopy revealed dysplasia in 27 patients (19.29%): 20 (74.07%) – 1 lesion, 7 (25.93%) – 2 lesions. A total of 34 lesions with signs of dysplasia were detected. Concomitant colon cancer diagnosed in 2 (7.41%) cases. Chromoendoscopy verified dysplasia in the same 34 cases. The histological examination revealed: low-grade dysplasia in 20 (58.82%) cases, indefinite for dysplasia – 7 (20.59%), sporadic adenomas – 7 (20.59%), and there were no cases of high-grade dysplasia. In 2 (100%) cases colon cancer was confirmed (adenocarcinoma). Cases of histologically indefinite for dysplasia were excluded from further analysis. Comparative analysis showed the same rate of true-positive and false-positive results for both HD-WLE colonoscopy and chromoendoscopy, and the effectiveness of both methods in the detection of dysplasia was amount to 74%.

**Conclusions** Our study shows similar effectiveness for HD-WLE colonoscopy and chromoendoscopy in detection of dysplasia in long-standing UC. So, in choosing an approach for endoscopic diagnosis of long-standing UC-associated dysplasia, preference may give to the reduction in the time of endoscopic examination with HD-WLE colonoscopy. Therefore, we emphasize the need to continue research aimed at improving the labour-intensive endoscopic process of identifying UC-associated dysplasia.

### ePP354 POUCHOSCOPY AS A USEFUL TOOL FOR THE DIAGNOSIS AND TREATMENT OF PATIENTS WITH IPAA

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DOI 10.1055/s-0040-1704740

**Aims** Pouchoscopy is a useful tool for the study of patients operated with total colectomy and ileal pouch anal anastomosis (IPAA). It can be used either for the diagnosis of pouchitis in combination with clinical presentation and histology or for endoscopic interventions if post surgery complications appear.

**Methods** We present retrospectively data from pouchoscopies in patients operated with IPAA over a follow up period of 15 years. The main indications of endoscopy were diarrhea with/no blood, increased bowel frequency, incomplete evacuation, anal pain and nocturnal seepage. The pouchoscopy was performed through flexible sigmoidoscope or gastro-scope after suitable preparation and following data were collected: time since temporary loop closure, endoscopic findings (pouchitis, stricture, abscess). The offered treatment was either conservative (antibiotics, anti-inflammatory drugs, antidiarrheals, probiotics) or interventional (digital/ballon/bougie dilatation).

**Results** A total of 110 pouchoscopies were performed in 90 patients. The endoscopic findings were 45 cases with pouchitis, 38 with pouch outlet strictures, 15 with inlet pouch strictures and 21 with pouch related fistulas. We present the management and outcome of each case.

**Conclusions** Pouchoscopy remains the basic instrument for diagnosis of post IPAA pouch related complications. In combination with radiology imaging it can result in a safe therapeutic tool for the solution ileal pouch disorders eliminating the number of surgical interventions in this particular group of patients.

### ePP355 MANAGEMENT OF LARGE COLORECTAL POLYPS AT AN ELECTIVE ENDOSCOPY SITE – OUTCOMES FROM A DEDICATED POLYP MULTIDISCIPLINARY MEETING

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**DOI** 10.1055/s-0040-1704741

**Aims** The British Society of Gastroenterology (BSG) guidelines provide a framework for the management of large (> 2 cm) non-pedunculated colorectal polyps (LNPCPs). This includes a recommendation to have access to a polyp multidisciplinary meeting (MDM). We aimed to evaluate patients diagnosed with large colorectal polyps at an elective (‘cold’) endoscopy unit.

**Methods** Single centre retrospective study at an elective London-based hospital, serving a population of 500 000, during a two-year period (January 2017 – December 2018). Complexity was assessed by the SMSA score.

**Results** 97 patients with colorectal polyps > 2 cm identified. Median age 71 years (IQR 61–78), Male 52/97 (54%).

Most polyps were non-pedunculated (LNPCPs) [69/97 (71%)]. Median size and SMSA score 30 mm (IQR 25–40) and 3 (IQR 3–4), respectively. Commonest sites were sigmoid colon [23/97 (24%)], ascending colon [18/97 (19%)], caecum [17/97 (19%)] and rectum [14/97 (14%)].

The majority of polyps were discussed at polyp MDM, 65/97 (67%). 43/65 (66%) were referred for endoscopic mucosal resection (EMR), 11/65 (17%) surgical resection [8/11 (73%) adenocarcinoma], 4/65 (6%) for endoscopic submucosal dissection (ESD) and 4/65 (6%) deemed not fit for polypectomy.

75/97 (77%) underwent EMR; 32/75 (43%) en-bloc. Most EMRs were by specialist endoscopists [62/75 (83%)]. Sedation used in 68/75 (91%) cases with age appropriate doses of fentanyl and midazolam. All polyps were retrieved and all patients had a follow up management plan documented post procedure. Post polypectomy bleeding (PPB) occurred in 2/75 (3%) patients. The 30-day mortality and perforation rates were zero.

**Conclusions** Over seventy percent of large polyps detected were LNPCPs and two-thirds of large polyps were discussed in a dedicated polyp MDM. This enabled informed consensus decision making with appropriate triage to endoscopic resection by a specialist endoscopist, surgery or conservative management. We conclude that large polyp resections can safely be undertaken by experienced endoscopists in a structured elective setting.

### ePP356 TREATMENT OUTCOME OF UNDERWATER ENDOSCOPIC MUCOSAL RESECTION OF COLON POLYPS IN A SINGLE INSTITUTION

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**DOI** 10.1055/s-0040-1704742

**Aims** Underwater endoscopic mucosal resection (UEMR) is emerging new technique to removal colon polyps. We aimed to elucidate efficacy and safety of UEMR to removal of various type of colon polyps

**Methods** Sixty-six colon polyps on twenty-six patients who underwent UEMR at Chonnam National University Hospital from January 2019 to August 2019 were analyzed retrospectively.

**Results** Ten patients (38.5%) were female, with a mean age of 61.6 years. The mean polyp variable per patient was 2.54 (range 1–20). The average size of the polyps is 9.1 mm (range 5–30). Sessile type (86.4%) was most common type followed by semi-pedunculated type (9.1%) and pedunculated type (4.5%). Sigmoid colon (36.4%) was most common polyp location followed by transverse colon (22.7%). The average procedure time per polyp is 191 ± 257 seconds. Coagrasper (7.6%), argon plasma coagulation (3.5%) and hemoclip (4.5%) were used in some cases. Most common histologic diagnosis was low grade

dysplasia (72.7%). En-bloc ablation was achieved at 90.9%. And R0 ablation was achieved at 86.5% (45/52). Immediate bleeding was observed at 10.6% per polyp. No delayed bleeding or perforation was observed. In one case, pneumonia occurred during hospitalization.

**Conclusions** UEMR is a safe and effective way to remove various types of colon polyps. Further evaluation is needed to compare the effectiveness and safety with conventional endoscopic mucosal resection.

### ePP357 EFFECTIVENESS OF ENDOSCOPIC RESECTION FOR COLORECTAL LESIONS > 20 MM

**Authors** Pita I<sup>1</sup>, Ferreira L<sup>2</sup>, Castro R<sup>1</sup>, Marques-Sá I<sup>1</sup>, Pinto C<sup>1</sup>, Bastos P<sup>1</sup>, Brandão C<sup>1</sup>, Cardoso E<sup>1</sup>, Lage J<sup>1</sup>, Libânio D<sup>1</sup>, Pimentel-Nunes P<sup>1</sup>, Pinto-Pais T<sup>1</sup>, Silva R<sup>1</sup>, Dinis-Ribeiro M<sup>1</sup>

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**DOI** 10.1055/s-0040-1704743

**Aims** Endoscopic removal of large colonic polyps is technically more demanding and should be attempted by experienced endoscopists. Furthermore, larger lesions have higher risk of invasive carcinoma, in which cases, *en bloc* resection is mandatory to ensure a “curative” endoscopic resection – this can be unfeasible with endoscopic mucosal resection(EMR) or polypectomy. An alternative method is endoscopic submucosal dissection(ESD), which is associated with longer learning curves, longer procedure times and higher complication rates. Our aim is to evaluate the effectiveness and safety of endoscopic resection techniques for the treatment of colonic lesions > 20 mm.

**Methods** All colonic lesions > 20 mm removed between 2013–2018 in a tertiary center were retrospectively included. Patients with previous colorectal malignancy or surgery were excluded.

**Results** We included 251 lesions > 20 mm removed by polypectomy/EMR: 97 (49%) pedunculated (lp) and 145(60%) non-pedunculated. Median lesion size was 25 mm (range 20–50 mm). *En bloc* resection was achieved in 88(90%) of lp lesions and in 47(32%) of non-pedunculated lesions. Complication rate was 3% (7 cases of delayed bleeding, all managed conservatively/endoscopically). Recurrence rate for fragmented EMR was 13%; ablation of the mucosectomy defect was associated with higher recurrence rate (18vs3%, p < 0.001). Twenty-seven lesions were malignant (12 pedunculated and 15 non-pedunculated). Two lp lesions were high-risk due to fragmented excision. All non-pedunculated malignant lesions were high-risk; in two of them the only criterium was piecemeal resection.

During the same period, 14 colorectal lesions were removed by ESD (43% hybrid ESD, 64% en bloc). There were 4 high-risk lesions; in 1 the only criterium was piecemeal resection. There was one case of perforation requiring temporary colostomy.

**Conclusions** In our series, EMR effectively treated 93% of lesions with acceptable complication and recurrence rates; only 2 lesions would have benefited from ESD (ie, 1 out 120). Of the lesions selected for ESD, surgery could have been spared in 1 (7%).

### ePP358 DIRECT ORAL ANTICOAGULANTS IN ACUTE UPPER GI BLEEDING – WHAT IS THE IMPACT ON ENDOSCOPY EFFICIENCY?

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**DOI** 10.1055/s-0040-1704744

**Aims** Acute upper GI bleeding (AUGIB) is a common medical emergency with 10% mortality. Direct oral anticoagulants (DOACs) are associated with an increased risk of AUGIB but the length of stay, re-bleed risk and mortality

following a bleed has not been fully ascertained. We aimed to compare the influence of DOACs on factors affecting endoscopy and post-endoscopy outcomes.

**Methods** Retrospective data collection of all emergency gastroscopies at a London-based endoscopy site between 6/9/2018 and 8/5/2019. Gastroscopies performed for non-AUGIB indications and patients who developed an AUGIB as an inpatient were excluded. An unpaired T- test was applied comparing patients on DOACs vs. those not taking a DOAC. Equal variances were assumed in both groups. A p value of < 0.05 was deemed significant.

**Results** 131 new admissions for AUGIB were identified during the study period. 18 (13.7%) were taking a DOAC at the time of bleed. Mean age of patients on a DOAC was 83.8 vs. 68.0 in those not taking a DOAC ( $p < 0.01$ ). Mean admission to scope time in the DOAC cohort was 109.3 vs 34.1 hours when not taking a DOAC ( $p < 0.009$ ). Patients taking a DOAC showed a trend towards a longer length of stay vs. those not taking a DOAC (1161.2 vs 376.5 hours,  $p = 0.06$ ).

**Conclusions** Over 10% of patients admitted with AUGIB were taking a DOAC. AUGIB patients that were taking a DOAC were a significantly older cohort. Taking a DOAC significantly increased the admission to scope time and resulted in a trend towards longer length of stay. Given the more widespread use of DOACs and prevalence in AUGIB patients, separate guidelines on the management of this sub-group may optimise peri-procedural efficiency.

### ePP360 MONOCENTRIC ITALIAN EXPERIENCE OF NON-ANESTHESIOLOGIST SEDATION ACCORDING TO ESGE RECOMMENDATION ON STAFF TRAINING AND PATIENT MANAGEMENT

**Authors** Manno M<sup>1</sup>, Deiana S<sup>1</sup>, Gabbani T<sup>1</sup>, Ottaviani L<sup>1</sup>, Vavassori S<sup>1</sup>, Gazzi M<sup>2</sup>, Pignatti A<sup>2</sup>, Becchi E<sup>2</sup>, Hassan C<sup>3</sup>, Soriani P<sup>1</sup>

**Institute** 1 Azienda USL Modena, Gastroenterology and Digestive Endoscopy, Carpi (MO), Italy; 2 Azienda USL Modena, Anesthesiology and Intensive Care Unit, Carpi (MO), Italy; 3 Nuovo Regina Margherita Hospital, Gastroenterology and Digestive Endoscopy, Roma, Italy

DOI 10.1055/s-0040-1704745

**Aims** Several scientific societies have approved the non-anaesthesiologist sedation (NAS) in GI endoscopy, considering it a safe procedure when administered by adequately trained personnel. No data are available on NAS safety after implementation in a digestive endoscopy service of the ESGE-ESGENA training program. This study is a picture of our real-life experience of NAS (also using propofol), after the implementation of that European training program. Primary endpoint was the occurrence of adverse events (AE). Secondary endpoints were EGDS and colonoscopy performances, evaluation of drugs dosages.

**Methods** From January 2017 to June 2018, data of all consecutive endoscopic procedures performed in our Digestive Endoscopy Unit were collected using an electronic-reporting system. Inclusion criteria were age  $\geq 18$  years and eligibility to NAS.

**Results** The entire staff (physicians and nurses) performed the ESGE-ESGENA recommended sedation training course. Of 12.132 patients, 10755 patients fulfilled inclusion criteria and were divided into 2 groups: midazolam + fentanyl group (n. 2284, 21.2%) and PBS (propofol-based sedation) group (n. 8471, 78.8%). No major adverse events (AE) occurred in both groups, even in elderly people ( $\geq 80$  years). All EGDS were complete. On a total of 6853 colonoscopies, total cecal intubation rate was 96.8%, significantly higher in the PBS group (97.5% vs 94.0%,  $p < 0.0001$ ). Midazolam mean dosage was significantly lower in the PBS group, both for EGDS and colonoscopy ( $p < 0.0001$ ). Fentanyl mean dosage was significantly lower in the PBS group during colonoscopy ( $p < 0.0001$ ).

**Conclusions** This Italian monocentric non-academic experience supports the efficacy and safety of NAS, when specific ESGE-ESGENA training program became part of staff curriculum. Moreover, PBS seems to improve performance and quality of endoscopic procedures.

IBD 6

Saturday, April 25, 2020

15:00–15:30

ePoster Podium 8

### ePP361 SURVEILLANCE WITH CHROMOENDOSCOPY TO DETECT NEW DYSPLASIA IN INFLAMMATORY BOWEL DISEASE

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DOI 10.1055/s-0040-1704746

**Aims** We aimed to assess our endoscopic results from follow-up chromoendoscopy in Inflammatory Bowel Disease (IBD) patients with previous diagnose of dysplasia.

**Methods** Retrospective data collection from IBD patients who have had dysplastic lesions in screening chromoendoscopy, performed in our hospital from January '13 to November '18.

Demographic and clinical data were collected, as well as endoscopic findings in basal chromoendoscopy and in the first follow-up.

**Results** 320 chromoendoscopies were performed and 41 patients show dysplastic lesions. 12 (30%) had already had dysplasia in previous colonoscopies.

In the initial chromoendoscopy, an average of 2.89 dysplastic lesions with an average size of 8 mm was detected and 76.9% were flat lesions (0-Ila/0-Ilb Paris). 80% were tubular adenomas low grade dysplasia (LGD), 2 cases of high grade dysplasia (HGD) and one adenocarcinoma.

25 follow-up chromoendoscopies have been performed and new dysplastic lesions were found in 39% (average of 3.25 lesions, < 10 mm). 50% were tubular adenomas LGD and 12.5% serrated adenomas LGD.

Our analysis shows that patients with 0-Ila lesions in baseline chromoendoscopy have more frequent dysplastic lesions afterwards compared to those with 0Is lesions (78.6%vs0%,  $p = 0.035$ ). Patients whose Boston was < 8 in baseline chromoendoscopy have a greater number of lesions in the next one (16vs8;  $p = 0.005$ ).

**Conclusions** Surveillance with chromoendoscopy in IBD patients with previous dysplastic lesions detects new dysplasia in 30% and LGD is the most frequent histology. In our sample, finding higher number of lesions, 0-Ila lesions or worse bowel cleaning in the first chromoendoscopy predicts having a higher number of lesions on the follow-up.

► **Tab. 1** Patients basal characteristics (N = 41)

Male	75,5%
Age	58 (23.8–77.4)
Type of IBD (Ulcerative Colitis)	84%
Median years of IBD diagnosis	16
Familiar history of CRC	26,7%

## ePP362 FEASIBILITY OF ENDOSCOPIC SUBMUCOSAL DISSECTION FOR SPORADIC NEOPLASMS IN PATIENTS WITH ULCERATIVE COLITIS

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**DOI** 10.1055/s-0040-1704747

**Aims** In patients with ulcerative colitis (UC), sporadic neoplasms (SN) can also occur in addition to UC-associated colorectal cancer/dysplasia (UCAC). Recently, endoscopic submucosal dissection (ESD) of SN for diagnostic purposes has been reported. However, here is no consensus regarding ESD. We retrospectively evaluated the feasibility of ESD for SN.

**Methods** The subjects were 25 patients with 28 lesions who met the following criteria: diagnosed with a UC associated lesion; were in the remission phase and had well-circumscribed, single lesions with no dysplasia in the periphery. The patients were preoperatively diagnosed as having SN, and had undergone ESD for reasons of difficulty in distinguishing UCAC/SN even on the basis of magnified endoscopic and biopsy findings, with the postoperative pathology results leading to the diagnosis of SN.

**Results** The mean age of the patients was 59.9 years, and the mean disease period was 16.9 years. The en bloc resection rate by ESD was 96.4%, R0 resection rate was 89.2%, the mean tumour diameter was 28.4 mm, and the mean procedure time was 58.3 min. The adverse events were perforation in 1 patient, and postoperative bleeding in 1 patient. The histopathological examinations after ESD revealed 13 cancer lesions and 15 adenoma lesions. All lesions suspected as SN were confirmed as SN. Although 2 of the 15 patients followed up after ESD (mean observation period, 36.4 months) showed metachronous lesions, both had SN.

**Conclusions** ESD for lesions with UC was feasible. ESD is recommended as an optimal treatment for en bloc excision and accurate pathological diagnosis, which is essential in determining the appropriate treatment strategy.

## ePP363 EFFICIENCY AND SAFETY OF ENDOSCOPIC BALLOON DILATION OF ILEOCOLONIC ANASTOMOTIC STRICTURES IN PATIENTS WITH CROHN'S DISEASE: A MULTICENTRIC RETROSPECTIVE STUDY

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**DOI** 10.1055/s-0040-1704748

**Aims** Ileocolonic resection is common in Crohn's disease (CD). However, stricture formation in the anastomosis is a frequent cause of morbidity and surgery. Endoscopic balloon dilation (EBD) is an established modality for non-surgical treatment of these strictures, however, summary data from the Czech Republic are lacking.

**Methods** All EBDs of CD anastomotic strictures performed in the 7 centers from the Czech Republic between January 2013 and May 2019 were included. Demographics, disease characteristics, concomitant medication and procedure

outcomes with associated complications were analyzed. Technical success was defined as an ability to pass the endoscope following the procedure.

**Results** In total, 615 procedures performed in 282 patients, 52.1% males, were included. Mean age was 41.9 ± 12.7 years and disease duration 14.5 ± 8.4 years. Single dilation was performed in 47.9% of patients, 52.1% requested repeated interventions (2–10, median 2). Cumulative probability of redilation at 6 months, 1 year and 3 years was 20.2% (95%CI 14.8–26.2%), 31.8% (95%CI 26.5–37.2%) and 59.4% (95%CI 55.5–63.0%), respectively. Cumulative probabilities of a need for reoperation were 4.4% (95%CI 0.5–16.9%), 8.2% (95%CI 2.3–19.3%) and 14.8% (95%CI 7.1–25.2%), respectively. Technical success was reached in 81.1% of procedures and relief of symptoms in 86.7%. Success of the procedure was dependent on age (OR 0.98; 95%CI 0.96–0.99), smoking (OR 0.57; 95%CI 0.32–0.98) and concomitant immunosuppression (OR 1.99; 95%CI 1.31–3.02). Complications occurred in 2.6% of the procedures. Reintervention until 6 months after the procedure was needed in 26.7% of cases, out of which repeated dilation in 21.3% and surgery in 5.4%. The technical success (OR 0.44; 95%CI 0.29–0.67) and repeated dilation (OR 1.57; 95%CI 1.09–2.27) were associated with the need for reintervention until 6 months.

**Conclusions** In a large multicentric Czech cohort, the EBD in CD anastomotic strictures was proven to be safe and effective with results comparable to the available international data.

Saturday, April 25, 2020

15:30–16:00

Barrett surveillance and esophageal cancer ePoster Podium 1 staging

## ePP364 COMPARING THE ACCURACY OF EUS AND CT IN STAGING OF ESOPHAGEAL CANCER

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**DOI** 10.1055/s-0040-1704749

**Aims** Endoscopic ultrasound (EUS) is a suitable device for staging of esophageal cancers. However, chest computed tomography (CT) has traditionally been the standard diagnostic modality for malignancies. This study aimed was to compare the accuracies of EUS and chest CT in T and N staging of esophageal cancers.

**Methods** We retrospectively analyzed 149 patients who had undergone EUS examination and 275 patients who had undergone chest CT before cancer surgery. The inclusion criteria were:

- 1) patients diagnosed with esophageal cancer on biopsy,
- 2) patients who had undergone EUS examination or chest CT before cancer surgery, and
- 3) patients who underwent cancer surgery at the Seoul National University Bundang Hospital from May 2003 to December 2018.

We determined the accuracy of T and N staging on EUS examination and chest CT with the biopsy specimens.

**Results** The overall accuracies of EUS examination and chest CT were 72.5% (108/149) and 68.7% (189/275), respectively, for T staging ( $p = 0.487$ ) and 64.4% (96/149) and 61.5% (169/275), respectively, for N staging, which was not statistically different ( $p = 0.596$ ). For the substaging, the accuracy of EUS examination was not statistically different than that of chest CT for the T, N stage.

**Conclusions** EUS examination is not superior to chest CT for diagnosing T stage in esophageal cancers, whereas chest CT is not superior to EUS examination for diagnosing N stage in esophageal cancers. EUS examination and chest CT are not satisfactory for diagnosing T, N stage in esophageal cancers. Further study is needed for accurate T, N stage diagnosis in esophageal cancer.

## ePP365 BARRETT'S SURVEILLANCE: IS A FULL GASTROSCOPY REQUIRED?

**Authors** Ghodeif A<sup>1</sup>, Afify S<sup>1</sup>, Mathew M<sup>1</sup>, Thoufeeq M<sup>1</sup>

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**DOI** 10.1055/s-0040-1704750

**Aims** To assess if a full gastroscopy would detect significant finding on repeated endoscopic examinations of patients undergoing Barrett's surveillance or it could be sufficient to focus on Barrett's examination with more dedicated time and examination techniques to the oesophageal pathology.

**Methods** we conducted retrospective analysis of 600 endoscopic procedures performed for Barrett's surveillance in the period from 2015–2017. We collected demographic data, endoscopic and histopathological findings.

**Results** Patient's comfort 86% were good while 11% were acceptable, 3% had poor or intolerated procedure.

In 93% of patients no dysplasia was found, low and indefinite grade of dysplasia was found in 4% of patients and 2% had high grade dysplasia. In 4% of cases, no biopsy was taken.

2.1% of procedures were incomplete. Majority of gastric and duodenal findings were normal or inflammatory with no neoplastic findings.

**Conclusions** 2% of our patients had high grade dysplasia on surveillance. a full gastroscopy didn't show any significant finding in the stomach or the duodenum. Benefit of a full gastroscopy in the context of barrett's surveillance should be explored by a doing a multicentre RCT.

► Tab. 1

Gastric	Normal 65%	Gastritis 19.5%	Polyps 11.6%	Other 05%
Duodenal	Normal 96%	Duo- denitis 01%	Not ex- amined 2%	Other 01%

## ePP366 IMPLICATION OF KI-67 IMMUNOHISTOCHEMISTRY FOR MANAGEMENT OF INTRAMUCOSAL NEOPLASIA IN BARRETT'S ESOPHAGUS

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**DOI** 10.1055/s-0040-1704751

**Aims** Histological assessment of intramucosal neoplasia in Barrett's esophagus is important for appropriate treatment. High-grade dysplasia, which is nearly identical to intramucosal non-invasive adenocarcinoma in Japan, and invasive adenocarcinoma are recommended to be treated immediately, although their histological criteria remain subjective and poor reproducibility has not been resolved. We aimed to clarify the potential of Ki-67 and p53 immunohistochemistry as an alternative method to conventional histological evaluation.

**Methods** We enrolled 39 superficial adenocarcinoma of Barrett's esophagus (24 intramucosal and 15 submucosal cancers) in 38 cases, resected endoscopically or surgically and diagnosed by Japanese GI pathologists from 2013 to 2014 at our institution. Endoscopic and clinicopathological features were evaluated, and immunohistochemistry for Ki-67 and p53 was performed to each representative section. Ki-67 staining pattern was categorized into two groups:

diffuse pattern (positive cells showed diffuse distribution including the surface epithelium) or localized pattern (positive cells were localized to the lower two-third of the crypts). p53 staining was categorized into two groups: normal (wild-type pattern) or abnormal (overexpressed or null pattern).

**Results** Ki-67 diffuse pattern was 67% (16/24) in intramucosal cancers, whereas 100% (15/15) in submucosal cancers. Intramucosal cancers with Ki-67 diffuse pattern showed higher frequencies of having poorly differentiated component and positive lymphovascular invasion than those with Ki-67 localized pattern (18.8% vs 0%; and 25.0% vs 0%). Abnormal expression of p53 was frequent in both groups (75% in localized pattern and 87.5% in diffuse pattern), that had no significant differences.

**Conclusions** Majority of intramucosal cancers had identical characteristics to submucosal cancers in terms of Ki-67 and p53 expression patterns. They may have invasive potential and need to be treated immediately, whereas those with Ki-67 localized pattern may have lower risk and observation can be considered. Ki-67 immunohistochemistry can be expected as an objective tool for management of intramucosal neoplasia in Barrett's esophagus.

Saturday, April 25, 2020

15:30–16:00

ERCP: Seeing is believing

ePoster Podium 2

## ePP367 ENDOSCOPIC TREATMENT OF COMPLICATIONS OF HYDATID CYSTS IN THE LIVERBROKEN IN THE BILE DUCTS: EXPERIENCE OF A MOROCCAN SERVICE

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**DOI** 10.1055/s-0040-1704752

**Aims** The hydatid cyst of the liver (KHF) is a parasitic disease due to the development of the larval form of the taenia of the dog *Echinococcus granulosus*. By its clinical latency, the Diagnosis is most often at the stage of complications. Fistulization of the cyst hydatid in the bile ducts is the most common complication. endoscopy is necessary because of the therapeutic problems and risks associated with surgery. The objective of our study was to evaluate and analyze the effectiveness of ERCP in the diagnosis and treatment of hydatid cysts of the liver broken in the pathways ducts.

**Methods** This is a 17-year retrospective and descriptive study, ranging from January 2002 to March 2019, focused on patients with fistulized KHF in the pathways Bile. ERCP and endoscopic biliary sphincterotomy were performed in all patients, 18 times preoperatively and 21 times postoperatively.

**Results** 50 patients with ruptured KHF in the biliary tract, 2.4% of the indications ERCP in our series were included. The average age of patients was 47, with male predominance in 65% of cases. KHF broken in the ways galls were complicated by persistent external biliary fistula post operatively in 34% of cases. Sphincterotomy was performed in all patients allowing removal of hydatid material by extraction balloon or Dormia basket. Nevertheless, 21.7% required naso-biliary drainage and 8.7% benefited from the placement of a biliary prosthesis. Overall success was 100% and no complication related to endoscopic treatment was objectified. The evolution was marked by the disappearance of jaundice after 5 to 12 days in average after endoscopic gesture and dryness of external biliary fistula after 10 to 12 days.

**Conclusions** The results of our study confirm the efficacy and safety of ERCP and the endoscopic sphincterotomy in biliary complications of echinococcosis hepatic. It makes it possible to shorten the post-operative stay and to avoid reoperation, often difficult and haemorrhagic

## ePP368V THE ROLE OF ENDOSCOPIC RETROGRADE CHOLANGIOPANCREATOGRAPHY AND CHOLANGIOSCOPY IN BILIARY OBSTRUCTION SECONDARY TO HYDATID CYST

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**DOI** 10.1055/s-0040-1704753

A 45 years old female presented with acute severe cholangitis. She had an occupational history of agricultural work in Eastern European Littoral area. Gallstones disease was suspected but radiological imaging demonstrated well-defined encapsulated cystic lesions within the liver with gross biliary dilatation suggesting active Hydatid disease. The patient was commenced on albendazole but the symptoms of biliary obstruction did not improve. The patient underwent endoscopic retrograde cholangiopancreatography (ERCP) and cholangioscopy. The video attached demonstrates the findings in the ERCP and cholangioscopy.

## ePP369 SPYBITE BIOPSY SYSTEM DURING CHOLANGIOSCOPY – LEARNING CURVE AND EXPERIENCES FROM A SINGLE CENTRE, TERTIARY HOSPITAL IN THE UNITED KINGDOM

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**DOI** 10.1055/s-0040-1704754

**Aims** Previous small studies have suggested that SpyBite may be superior to cytology brushings and standard forceps biopsies. However, the utility for establishing a biliary diagnosis and the learning process required for this procedure is still unclear. The objective of this study was to investigate the learning process for SpyBite biopsies in a tertiary centre cholangioscopy service.

**Methods** This was a single-centre observational study performed by retrospective examination of medical records and endoscopic data. All cases performed between October 2018 to February 2019 were reviewed, following introduction of the SpyBite biopsy system. Clinical data was independently recorded by two medically trained data collectors and then compared. Any discrepancies were resolved by discussion and re-checking medical notes. Given the low numbers of patients included in this sampling frame, descriptive rather than analytical statistics were used.

**Results** 15 cholangioscopy procedures were performed with SpyBite biopsies taken (14 patients, with 1 repeat case). The key performance indicator of establishing diagnosis vs non-definitive diagnosis from biopsies was assessed. An increased likelihood of diagnosis was observed after 6 procedures had been performed. Despite the small sample population, both groups were well matched for gender, age, co-morbidities and haematological/biochemical results prior to the procedure. There was a greater likelihood of having a final diagnosis of inflammatory biliary disease from initial non-diagnostic or non-biopsied procedures (71.4%), compared to higher yield of dysplasia or cancer in the biopsy-diagnostic group (75%).

**Conclusions** Increased diagnostic accuracy using endobiliary SpyBite biopsies appears to be achieved with additional caseload and biopsy numbers. This may suggest increased diagnosis with procedural performance, however the individual case mix of patients may also play a large role in determining the extent of this learning curve. We conclude that following initiation of the SpyBite biopsy system, there is a short but recognisable learning period even for experienced biliary endoscopists.

Saturday, April 25, 2020

CRC Screening 2

15:30–16:00

ePoster Podium 3

## ePP370 PERINEURAL INVASION PREDICTS POOR PROGNOSIS IN STAGE I-III COLORECTAL CANCER PATIENTS

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**DOI** 10.1055/s-0040-1704755

**Aims** Colorectal cancer (CRC) is one of the most common diagnosed cancer, and one of the major causes of cancer-related deaths worldwide. Current treatment guidelines mostly rely on TNM classification; however recent studies suggest that additional histopathological findings could affect the disease course. Clinical significance of perineural invasion (PNI) and lymphovascular invasion (LVI) in CRC patients is still controversial. Our aim was to determine whether PNI alone or associated with LVI have an effect on 5-year overall survival (OS) of CRC patients.

**Methods** From May 2014 till March 2015, 370 newly diagnosed CRC patients with stage I–III surgically treated at the Digestive Surgery Clinic, Clinical Center of Serbia were included. All patients had their diagnosis histologically confirmed in accordance with both TMN and Dukes classification. In addition, the patient's demographics, histopathological details including tumor differentiation were observed and their correlation with OS was investigated. Overall survival was determined using Kaplan-Meier method as well as Cox regression model.

**Results** LVI was identified in 124 patients (34%), whereas PNI was present in 52 patients (14%). Using Kaplan-Meier analysis, we have found that both LVI and PNI were associated with lower survival rates ( $P < 0.01$ ). Moreover when Cox multiple regression model was used, LVI, PNI, older age, higher BMI, poor differentiation, as well as depth of the tumor and right side localisation were significant factors predicting poor prognosis OS (HR = 2.73, 95%CI 1.54–4.83,  $P < 0.01$ ).

**Conclusions** PNI alone, as well as LVI were associated with poor prognosis in CRC patients, hence more aggressive therapy should be reserved for these patients after curative resection.

## ePP371 PROXIMAL AND DISTAL FINDINGS DURING COLORECTAL SCREENING PROGRAMME: MULTICENTER STUDY

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**DOI** 10.1055/s-0040-1704756

**Aims** Faecal immunochemical test (FIT) is used for colorectal cancer screening. The aim of this study is describe findings in the distal and proximal colon in a FIT colorectal screening programme and its relationship with FIT value.

**Methods** Multicenter Prospective study of 692 patients referred from the colorectal screening program with a positive FIT (October 2016 and October 2018).

**Results** 692 patients were included between 50 and 69 years old, 44 were excluded due to inadequate preparation and/or incomplete colonoscopy. 55.2% are males. Total ADR is 61.1%. The adenoma detection rate in right colon is 36% and

► **Tab. 1** Findings right colon and distal colon

	Right colon (n/%)	Distal colon (n/%)
Polyps	589	988
Low grade adenomas <10 mm	323 (54.8%)	383 (38.7%)
High grade adenomas (≥10 mm and/or vil-lous component)	103 (17.5%)	325 (32.9%)
Carcinoma	7 (1.18%)	17 (1.72%)
SSA without dysplasia ≥ 10 mm//SSA with dysplasia//TSA//SS without dysplasia <10mm	29 (4.9%)//3 (0.5%)//3 (0.5%)//30(5%)	10 (1.01%)//6 (0.62%)//1 (0.10%)//47 (4.75%)

in distal colon is 61%. The highest FIT values correlate with larger polyps in the sigma and rectum colon ( $p: 0.022$  and  $p: 0.007$ ), however there are no differences in the number of polyps per section and the FIT values. CRC is diagnosed at 3.46% of the 692 patients included; being located in the distal colon in 70% of cases.

**Conclusions** In colo-rectal screening programme with positive FIT: 1) Adenoma detection rate is higher in distal colon. 2) Advanced adenomatous lesions and CRC are most often found in the left colon. 3) It is observed that when FIT values are higher, polyp's size tend to have higher size in the left size of the colon and rectum sections.

### ePP372 THE CHANGE FROM GUAIAIC TO IMMUNOCHEMICAL FAECAL TEST LEADS TO INCREASED ADENOMA DETECTION RATES IN A REGIONAL COLORECTAL SCREENING PROGRAM

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DOI 10.1055/s-0040-1704757

**Aims** To compare the trends of adenoma and carcinoma detection rates in a regional colorectal screening program after the change from guaiac to faecal immunochemical test (FIT).

**Methods** Prospective cohort study of asymptomatic patients with positive faecal blood test that underwent a screening colonoscopy in a referral unit in Portugal Centre region. Two groups - Guaiac, in use until 2018; FIT in use since 2019. Recorded data from colonoscopies from 2018 and 2019, demographics, quality colonoscopy metrics, polyp (PDR), adenoma (ADR), advanced ADR and carcinoma detection rates. Statistical analysis with Qui<sup>2</sup> and *t*-test.

**Results** 767 patients, 384 in Guaiac and 383 in FIT group. The groups were similar regarding mean age (62.1 vs. 62.9 years,  $p=0.13$ ), sex (male: 50% vs. 55%,  $p=0.16$ ) and characteristics for possible inadequate bowel preparation. Comparing Guaiac vs. FIT, the PDR was 46.9% vs. 58.2% ( $p=0.002$ , OR 1.6, 95%CI 1.2-2.1), the mean polyp per procedure was 1.1 vs. 1.9 ( $p< 0.001$ ) and the ADR was 35.7% vs. 45.7% ( $p=0.005$ , OR 1.5, 95%CI 1.1-2); overall, per sex, ADR in female was 31% (26% vs. 37%) and 49.4% in men (45% vs. 53%). Still comparing Guaiac vs. FIT, the

advanced ADR was 14% vs. 24% ( $p< 0.001$ , OR 1.9, 95%CI 1.3-2.8), the carcinoma detection was 2.1% vs. 4.4%,  $p=0.07$ ); the mean lesion size increased (7mm vs. 8.7mm,  $p=0.001$ ) and the resection of >20mm lesions also increased (2.3% vs 5.4%,  $p=0.053$ ). No differences (Guaic vs. FIT) were found in bowel preparation (91.5% vs. 91.6%,  $p=0.9$ ), cecal intubation rate (98.1% vs. 95.3%,  $p=0.59$ ), withdrawal time (8.1 vs. 8.4 minutes,  $p=0.38$ ) and complications (0.5% vs. 1.1%,  $p=0.39$ ).

**Conclusions** The shift for a FIT-based program allows a better screening and an increase in health gain, by improving the lesions' detection and removal of premalignant lesions.

Saturday, April 25, 2020

15:30-16:00

Experimental endoscopy: From bench to bedside

ePoster

Podium 4

### ePP374 MAGNETITE NANOPARTICLES AS CONTRAST AGENTS FOR TERAHERTZ IMAGING ENDOSCOPY IN GASTROENTEROLOGY - IN VITRO SAFETY ESTIMATION

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DOI 10.1055/s-0040-1704758

**Aims** Terahertz (THz) spectroscopy and imaging is a relatively new arrived technology, with a plethora of possible applications in physics, chemistry, biology, materials science and medicine. In medicine, terahertz imaging could represent the future of noninvasive methods for early detection of different pathologies, with a special focus on oncology. The background for terahertz imaging is based on differences in water content and structural variations in tissues, normal and neoplastic structures displays obviously different THz absorption. An important aspect of terahertz imaging is also the identification and the development of new contrast agents to improve the accuracy and sensitivity of the method. The aim of study is the evaluation of the new developed nanoparticles as contrast agents by in vitro tests in order to assess the safety profile and the possible genotoxic impact.

**Methods** AGS (Human Gastric adenocarcinoma cell line) cells were cultivated in a DMEM medium, supplemented with 10% fetal bovine serum. After the cell cultures were initiated, the growth media was changed with a complete medium supplemented with the magnetite nanoparticles (functionalized either citric acid or carboxymethylcellulose) in different dilutions. Duration of treatment was of 24 hours and the cell viability was assessed by MTT test and genotoxicity by COMET assay

**Results** The impact on cell survival was dependent on type of functionalized nanoparticles, the concentration of the nanoparticles added to the medium, showing a low impact on cell viability at low doses. Investigation of genotoxicity also proved that magnetite nanoparticles had a low impact on genetic material integrity of AGS cell line.

**Conclusions** New developed magnetite based nanoparticles has been proved to be well tolerated, without any significant cytotoxic or genotoxic effects.

## ePP375 SALIVA STRESS BIOMARKERS CAN RELIABLY ESTIMATE ENDOSCOPY NOVICES' PERFORMANCE IN A HIGH-END SIMULATOR

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DOI 10.1055/s-0040-1704759

**Aims** The absence of a reliable detection method makes estimating endoscopists' mental stress difficult to quantify. Although several non-invasive stress measuring methods have been proposed, most studies have used only one or two stress estimation parameters and produced conflicting results. This study concomitantly measures the responses of all previously reported non-invasive stress indices and compares them to the video score (VS) achieved by novice endoscopists in a reproducibly stressful simulation environment.

**Methods** 25 male novice trainees were enrolled. After an orientation phase, they wore a wrist device that measures heart rate (HR), interbeat interval (IBI) duration, and electrodermal activity (EDA). A saliva specimen was collected for cortisol (sC), alpha-amylase (sAA), and secretory immunoglobulin A (sIgA) measurements (baseline phase, BL). Then the simulation exercise phase (E) started, with the subjects trained on a basic colonoscopy module (GI-Bronch Mentor). Immediately after, another saliva sample was collected. The whole experiment was videotaped. VS was calculated. The percentage  $(E-BL)_{diff}$  of each of the six parameters was calculated and compared with VS using Pearson's correlation coefficient as well as Akaike Information Criterion (AIC<sub>c</sub>) (► **Table 1**).

**Results** EDA<sub>diff</sub> showed the best correlation with VS, followed by IBI<sub>diff</sub> and HR<sub>diff</sub>. Among the saliva biomarkers, sAA<sub>diff</sub> showed the best correlation in comparison to sIgA<sub>diff</sub> and sC<sub>diff</sub>.

**Conclusions** In our simulation setting, sympathetic ANS stress parameters (EDA, IBI, HR, sAA) could best describe the novice trainees' performance, but sC and IgA could not.

► **Tab. 1** Mean ± SD and Range of each variable, their Pearson correlation coefficient (r) with VS and their corrected AIC<sub>c</sub> value.

Variable	Mean ± SD	Range (min, max)	r*	AIC <sub>c</sub>
EDA <sub>diff</sub>	795 ± 379	(275, 1532)	-0.663	107.69
IBI <sub>diff</sub>	1.74 ± 8.88	(-12.5, 14)	0.634	109.49
HR <sub>diff</sub>	-1.54 ± 8.67	(-15, 13)	-0.624	109.07
sAA <sub>diff</sub>	251 ± 124	(21, 445)	-0.605	110.31

Saturday, April 25, 2020

EMR in colon 3

15:30 – 16:00

ePoster Podium 5

## ePP376V INCISION AND SNARING: A SIMPLE TRICK TO GRASP FLAT AND SESSILE COLONICAL LESIONS

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DOI 10.1055/s-0040-1704760

Especially in presence of flat lesions the grasping of the lesions can be challenging. Hybrid technique solved this problem, but is also a time-consuming procedure. When sessile or flat lesion can be removed by EMR, a simple trick to grasp the lesion, after submucosal injection, consist into create an incision in the normal mucosa in the fold beyond the proximal edge of the lesion, where will be inserted the tip of the snare. After that the scope is withdrawn slowly, till the complete opening of the snare. Then the lesion can be grasped, deflating the bowel, and cut.

## ePP377V UNDERWATER ENDOSCOPIC MUCOSAL RESECTION OF A DUODENAL ADENOMA WHICH WAS NOT COMPLETELY RESECTED WITH ENDOLOOP-ASSISTED UNROOFING TECHNIQUE: A CASE REPORT

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DOI 10.1055/s-0040-1704761

**Rationale** Endoscopic resection of duodenal adenoma is challenging procedure due to high recurrence rate and considerable rate of adverse events.

**Diagnoses** The patient was diagnosed as having a 20 mm sized flat elevated duodenal adenoma at the superior duodenal angle.

**Interventions** Firstly, Endoscopic resection with endoloop-assisted unroofing technique was performed. Duodenoscopy revealed recurrence of duodenal adenoma. Secondly UEMR was performed after 3month later after first session endoscopic resection.

**Outcomes** Complete resection was achieved by UEMR. Follow up duodenoscopy revealed no recurrence.

**Lessons** UEMR is safe and effective method for resection of duodenal adenoma which is difficult to resection.

Saturday, April 25, 2020

EMR in colon 4

15:30 – 16:00

ePoster Podium 6

## ePP378 THE BLEEDING RISK OF COLONOSCOPIC POLYPECTOMY IN LIVER CIRRHOSIS PATIENTS

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DOI 10.1055/s-0040-1704762

**Aims** It is well known that liver cirrhosis patients have more bleeding tendency than general population Bleeding risk of colonoscopic polypectomy for liver cirrhosis patients is unclear. So we aimed to evaluate the risk factors of post-polypectomy bleeding in liver cirrhosis patients.

**Methods** We examine the medical record of all patients with liver cirrhosis who underwent colonoscopy at Bucheon St Mary's hospital between August 2011 to September 2019. We included 74 patients who underwent colonoscopic polypectomy and they were classified into two groups, bleeding (n=34) group and non-bleeding (n=40) group. We analyzed the risk factors associated with post-polypectomy bleeding

**Results** Among 74 patients, Child-Pugh class A was 63.5% (n=47), class B was 24.3% (n=18), and class C was 12.2% (n=9). Methods of polypectomy were endoscopic mucosal resection (EMR) (n=48) or biopsy (n=26). Two groups showed statistically significant differences in Child-Pugh score ( $p=0.003$ ), polyp size ( $p<0.001$ ) and remove method ( $p=0.016$ ). The post-polypectomy bleeding significantly increased with higher Child-Pugh score (OR=2.731;  $p=0.022$ ) and larger polyp size (OR=1.271;  $p=0.048$ ) in multivariate analysis.

**Conclusions** The risk of post-polypectomy bleeding increases in patients with liver cirrhosis. Child-Pugh class and polyp size are important risk factors. Therefore, while performing colonoscopic polypectomy, endoscopists should pay attention to liver cirrhosis patients with higher bleeding risk factors.

### ePP379 OUR EXPERIENCE IN EFTR OF COLORECTAL LESIONS USING THE FTRD

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**DOI** 10.1055/s-0040-1704763

**Aims** Full-thickness resection device (FTRD) is an over-the-scope system (Ovesco) which allows a single-step endoscopic full-thickness resection (EFTR). It is an emerging technique for the treatment of naive, residual or relapsing lesions, smaller than 25 mm. The aims of our study are to describe colorectal lesions resected by FTRD and evaluate its efficacy and safety.

**Methods** A descriptive retrospective study of first 5 consecutive patients treated by FTRD at University Hospital of Burgos from August-2018 to May-2019.

**Results** 5 procedures in 5 patients, all colonoscopies with deep sedation by endoscopists. Mean age  $66.4 \pm 7.5$  years, 60% male. Indication of FTRD was adenoma recurrence in 3 patients (with high grade dysplasia from naive lesions of 40, 20 and 9 mm) and incomplete polypectomy in 2 patients (intramucosal adenocarcinoma from serrated polyp of 15 mm and adenoma with low grade dysplasia of 10 mm). 2 lesions were located in the right colon, 1 in transverse, 1 in left and 1 in rectum. Technical success was achieved in 100%. Mean size of the resected fragment was  $23 \pm 5.7$  mm, all of them were R0 (radical resection). EFTR-specimens showed residual lesion in 3 patients, mean size of 6.3 mm; 2 patients without residual lesion. First colonoscopy review (3 months): 4 patients without adenoma, a patient is still waiting. Mean follow-up of  $214 \pm 62$  days. All patients received antibiotic prophylaxis (amoxicillin-clavulanic). Mean hospital stay was 4 days. Early complications (< 7 days): 1 bleeding after releasing the Ovesco solved with hemoclip and 1 postpolypectomy syndrome with subocclusive syndrome resolved in 48 hours. No major complications were detected.

**Conclusions** FTRD is an effective technique for the resection of colorectal lesions with a low complication rate that is why it could be an alternative to surgery management in selected cases even in hospital without previous experience.

### ePP380 STRING-HEMOCLIPS FUSION: AN EFFECTIVE WAY FOR CLOSURE OF A LARGE MUCOSAL DEFECT AFTER EMR/ESD

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**DOI** 10.1055/s-0040-1704764

**Aims** Large endoscopic submucosal resection (EMR) and dissection (ESD) remain technically challenging and are associated with high risks of severe adverse events (bleeding, delayed perforation); mainly if the patient is taking antithrombotic agents. Complete and strong closure of the post-EMR/ESD mucosal defect seems effective in preventing such events.

**Methods** We, thus, developed a technique that allows us to strongly suture and completely close a large mucosal defect by a string-hemoclip fusion procedure.

**Results** A large recto-sigmoid LST-G (approximately 50 mm in size) was resected by piecemeal EMR without complications, in a 79-year-old woman who was taking Clopidogrel up to five days before. A double-channel endoscope with a tip cap was used. First, a string was attached to the hemoclip which is placed in the lateral edge of the residual mucosal defect (at the tail). The second clip hooking the string is placed on the contra-edge. Successive clips are placed similarly in a zig-zag line. The mucosal edges are approximated by pulling the string with a biopsy forceps through the auxiliary channel of the endoscope. Finally, an endoscopic inspection was performed to visually confirm complete closure. The patient did not develop any adverse events and was discharged on day 2 after EMR. An endoscopic control 2.5 months after showed a healed mucosa.

**Conclusions** The string-hemoclip fusion procedure for closing a large mucosal defect after EMR was feasible, effective, and safe. An advantage of this method could be to get a stronger mucosal closure by a zigzag line fashion.

Saturday, April 25, 2020

15:30 – 16:00

EMR in colon 5

ePoster Podium 7

### ePP381 ENDOSCOPIC MANAGEMENT OF LARGE SYMPTOMATIC COLON LIPOMAS: A SYSTEMATIC REVIEW AND META-ANALYSIS

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**DOI** 10.1055/s-0040-1704765

**Aims** Various techniques have been described for endoscopic treatment of large symptomatic colon lipomas. One of these techniques, lipoma unroofing, relies on spontaneous intraluminal expulsion, occurring after simple partial snare resection. This approach might provide a safer, easier and more cost effective technique compared to dissection-based techniques, endoscopic mucosal resection (EMR) or loop-assisted resection (LAR). Our aim was to compare efficacy and safety of unroofing with these three endoscopic techniques.

**Methods** A systematic literary review was performed using an electronic database search. As most outcomes were binary in nature and several outcomes did not occur in some studies, routine calculation of standard errors in outcome probability was not possible. Therefore, original patient data were extracted, after which complete resolution rate and adverse events were compared.

**Results** Twenty six studies met selection criteria. In total, 96 lesions were identified (50% female, mean age 63 years, mean lesion size 45.0 mm). Four retrospective analyses, 21 case reports and 1 prospective study were included. Baseline characteristics did not differ significantly. Ten patients underwent unroofing (10.4%), whereas 26 patients (28.1%), 31 patients (32.3%) and 29 patients (30.2%) received dissection-based resection, EMR and LAR respectively. Complete resolution rates were 80%, 100% ( $p=0.086$ ), 100% ( $p=0.068$ ) and 89.7% ( $p=0.44$ ). While no adverse events were identified in the unroofing group, dissection-based resection, EMR and LAR led to adverse events in 7.7% ( $p=0.668$ ), 12.9% ( $p=0.421$ ) and 10.3% ( $p=0.552$ ) of cases.

**Conclusions** Dissection-based techniques, EMR and LAR did not provide a statistically significant increase in complete resection rate and more importantly, led to a higher percentage of adverse events. However, before unroofing can be considered as the primary technique for treatment of large symptomatic colon lipomas, more data are needed to prove a significant benefit in safety. Until then, the most optimal treatment should depend on local expertise.

## ePP382 CONVENTIONAL ENDOSCOPIC MUCOSAL RESECTION VS. PRECUT-ENDOSCOPIC MUCOSAL RESECTION FOR LARGE ( $\geq 1$ CM) COLORECTAL LESIONS WITH ENDOSCOPIC FEATURES OF SESSILE SERRATED ADENOMA/POLYP

Authors Oh CK<sup>1</sup>, Lee BI<sup>1</sup>, Lee SH<sup>2</sup>, Kim SJ<sup>1</sup>, Lee HH<sup>1</sup>, Park JM<sup>1</sup>, Cho YS<sup>1</sup>, Lee IS<sup>1</sup>, Choi MG<sup>1</sup>

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DOI 10.1055/s-0040-1704766

**Aims** Interval colorectal cancers can result from an incompletely resected lesion. Sessile serrated adenomas/polyps (SSA/Ps) were more likely to be incompletely resected than conventional adenomas. Precut endoscopic mucosal resection (EMR-P) is a method for improving complete and *en bloc* resection rate of large gastrointestinal neoplasia.

**Methods** Retrospective analysis was performed for resection of large ( $\geq 1$  cm) colorectal lesions with endoscopic features of SSA/P (a pale or normal-colored flat lesion with indistinctive border, mucus cap, cloud-like surface, rim of debris, and dilated crypts) in Seoul St. Mary's Hospital from January 2014 to July 2019.

**Results** Among 615 eligible lesions with endoscopic features of SSA/P, 359 lesions in conventional endoscopic resection (EMR) group and 161 lesions in EMR-P group were included in the study. 95 lesions were excluded because of non-neoplastic histopathology, less-experienced operators, or missing data. The mean size of the lesions was  $12.8 \pm 3.8$  mm and  $15.6 \pm 4.4$  mm ( $P < 0.001$ ) and *en bloc* resection rate was 90.5% in EMR group and 91.9% in EMR-P group ( $P = 0.608$ ), respectively. R0 resection rate was significantly higher in EMR-P group compared to EMR group (89.4% vs. 64.3%,  $P < 0.001$ ) and median procedure time was significantly longer in the EMR-P group compared to EMR group ( $492.4 \pm 336.3$  sec vs.  $182.3 \pm 137.8$  sec,  $P < 0.001$ ). Two delayed perforations occurred in the EMR-P group. In univariate analysis, EMR-P, *en bloc* resection, morphology and right side lesions were significantly associated with R0 resection. In multivariate analysis, EMR-P, right side lesions were significantly associated with R0 resection. During the median follow-up of  $21.9 \pm 12.1$  months, 3 recurrences occurred in the EMR group only ( $P = 0.561$ ).

**Conclusions** EMR-P is superior to EMR for R0 resection of large colorectal lesions with endoscopic features of SSA/P although significantly longer procedure time is required for EMR-P.

## ePP383V UNDERWATER EN-BLOC EMR FOR NON-GRANULAR LST PSEUDO-DEPRESSED

Authors Uchima H, Hernandez JAC, Marin I, Caballero EN, Iborra I, Clos A, Luna D, Cañete F, Domenech E, De Vega VM

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DOI 10.1055/s-0040-1704767

Pseudodepressed NG LST have to be resected *en bloc* due to an elevated risk of deep submucosal invasion. We present the case of a 85 years old patient referred for endoscopic resection of a pseudodepressed NG LST of more than half of the circular wall of the ascending colon with previous biopsy showing high-grade dysplasia, and no endoscopic signs of deep submucosal invasion.

Herein (video) we show a modified technique with underwater EMR to allow *en bloc* resection, using a 25 mm rounded snare.

Patient was discharged the same day after 1 hour observation. Final histology showed high grade dysplasia.

Saturday, April 25, 2020

15:30 – 16:00

Upper GI: Stenting and variceal ligation and surveillance

ePoster Podium 8

## ePP384 CLINICAL OUTCOMES OF PALLIATIVE GASTRODUODENAL AND JEJUNAL STENTING IN PATIENTS WITH ADVANCED CANCER: RESULTS OF A TWO-CENTER RETROSPECTIVE STUDY

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DOI 10.1055/s-0040-1704768

**Aims** Palliative self-expandable metal stent [SEMS] placement for malignant gastrointestinal stenosis can be challenging in advanced cancer, especially in cases of total gastric involvement and combined duodenal and biliary obstruction. The study was aimed to evaluate early and long-term outcomes of gastroenteral stenting.

**Methods** 75 patients (median age – 72 years) presenting with gastroenteral obstruction at the period of 2004–2018 in a university surgical center and city oncological hospital were included in a retrospective study. Patients were unfit for surgery due to advanced primary, recurrent or metastatic gastric (57), pancreaticobiliary (16) or other (2) cancer with the stenosis at the level of stomach (gastric outlet – 42, multi-level obstruction – 7), duodenum (17), jejunum (3), and gastroenteral anastomosis (6). Adverse events and survival were analyzed.

**Results** 88 SEMS (uncovered – 67, covered – 21) were implanted. Technical and functional success was achieved in 74 patients (98.7%). In 13 patients gastroduodenal stenting was combined with biliary. Early complications were observed in 5 cases (6.7%): proximal migration of partially covered SEMS 3–5 days after their placement in the gastric outlet (2), obstructive jaundice (2), and bleeding (1). Jaundice occurred within 6 days after gastroduodenal uncovered SEMS placement in 2 patients with advanced gastric cancer without previous history of bile duct dilation and in 1 case was associated with acute cholangitis. 3 patients died within 11 days after the procedure, in-hospital mortality – 4%. Long-term complications included recurrence of obstructive symptoms (8) due to stent dysfunction 2–8 months after stenting. Median survival was 101 days.

**Conclusions** SEMS placement is an effective palliation for patients with malignant gastrointestinal obstruction, which in cases of total gastric cancer or after previous gastrectomy may be the only option to restore oral intake. Significant early complications include obstructive jaundice and cholangitis. Covered stents are associated with an increased risk of migration.

## ePP385 UNSEDATED ULTRATHIN ENDOSCOPY FOR VARICEAL SURVEILLANCE IN THE OUTPATIENT SETTING – EVIDENCE INTO PRACTICE

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DOI 10.1055/s-0040-1704769

**Aims** Risk of bleeding from oesophageal varices and the need for prophylaxis is determined by the endoscopic appearance of varices and therefore upper gastrointestinal (UGI) endoscopy is recommended by guidelines at diagnosis of cirrhosis and regular intervals thereafter. However, the point prevalence of varices is low (25%) meaning that the majority of these endoscopies are unnecessary. Recent advances in endoscope technology have resulted in the development of narrow diameter or ultrathin (< 6 mm)

endoscopes which have the advantage of being more tolerable than conventional UGI endoscopes. We hypothesised that unsedated ultrathin endoscopy for diagnosis of varices could be implemented in the outpatient setting and would be acceptable to patients.

**Methods** Patients with cirrhosis awaiting UGI endoscopy for variceal screening or surveillance were identified from the endoscopy waiting list. UGI endoscopy was performed by a single operator trans-orally using the EG Scan II disposable endoscope. Varices were graded using the Modified Paquet classification. Video recordings of endoscopic procedures were reviewed by assessors blinded to the endoscopy reports and clinical details and agreement was assessed using the kappa statistic.

**Results** 41 patients (80% male) have undergone unsedated ultrathin endoscopy. Median age was 59 (IQR 57–67). All procedures were successful and were tolerated well in 98% of cases. Median procedure time was 2 minutes (IQR 1–3). Varices were found in 40% (17% Grade 1 and 23% Grade 2). Patients with grade 2 varices were prescribed non-selective beta-blockers at the clinic appointment. Kappa statistic for the finding of any varices was 0.636  $p = 0.001$  and 0.8–1.0 for diagnosis of grade 2 varices  $p < 0.0001$ .

**Conclusions** Our pilot study confirms the feasibility, accuracy and safety of unsedated ultrathin endoscopy in the outpatient setting. This service appears to be acceptable and more convenient for patients and is likely to result in significant cost savings associated with variceal surveillance.

### ePP386 RISK FACTORS AND OUTCOMES ASSOCIATED WITH ENDOSCOPIC VARICEAL BAND LIGATION INDUCED ULCERS

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DOI 10.1055/s-0040-1704770

**Aims** The aim of this retrospective study was to highlight the risk factors and outcomes associated with endoscopic variceal band ligation (EVBL) induced ulcers.

**Methods** This retrospective study was performed in our institute; collecting data between 2015 and 2019. Patient demographics, serological results, endoscopic reports and medical notes were catalogued. Management of patients with EVBL induced ulcers and outcomes were recorded. Data was analysed with SPSS 26.

**Results** A total of 152 sessions of EVBL were performed on 92 patients. The mean Model of End-Stage Liver Disease (MELD) was 14.54. 11 cases (7.7%) of post EVBL ulceration were reported in 10 patients; with 2 of these cases proving fatal. Univariate analysis revealed that a Child Pugh Turcotte (CPT) score of C, MELD score of greater than 15, alcoholic liver disease (ALD) and the absence of non-selective beta blockers (NSBB) in their drug regimen were independent risk factors for developing EVBL ulceration. The OR was 16.25 (CI 1.4–183,  $p = 0.014$ ) for CPT score of C, 7.3 (CI 1.1–48.2,  $p = 0.019$ ) for MELD score greater than 15 and 5.5 (CI 1.8–16.6,  $p = 0.026$ ) if patients were not taking a NSBB.

**Conclusions** EVBL ulceration is a rare and potentially fatal complication. Our institute demonstrated a higher than globally reported EVBL-induced ulcer rate with an incidence of 7.7%. This was associated with a mortality rate of 18%. The incidence of EVBL ulceration was lower in patients taking a non-selective beta blocker. We observed a higher ulceration rate in patients with ALD cirrhosis, a CPT score of C and in patient's with a MELD score greater than 15.

## ESGE Days 2020 ePoster presentations

Thursday, April 23, 2020

09:00 – 17:00

Clinical endoscopic practice

ePoster area

### eP1 SETTING UP A FAECAL MICROBIOTA TRANSPLANTATION SERVICE: A QUALITY IMPROVEMENT PROJECT

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DOI 10.1055/s-0040-1704771

**Aims** Faecal Microbiota Transplantation (FMT) via colonoscopy is approved for use in patients with recurrent *C. Difficile* infection (rCDI). Rigorous donor screening is required to safeguard recipients from transmission of pathogens. Due to changes in EU legislation use of imported faecal matter for FMT was no longer feasible. To address local clinical FMT need, a QI project was undertaken to set up an FMT donor screening service and stool bank in a tertiary referral centre.

**Methods** To ensure quality and safety for both recipients and donors, a multidisciplinary team formulated local donor screening consensus guidelines, incorporating published guidelines in the literature. Potential donors undergo extensive faecal and blood testing to rule out presence of pathogens and infectious disease, including multi-drug resistant organisms. Stool delivery and processing steps are completed on the hospital campus on a compassionate basis by APC Microbiome Ireland and are stored in a stool bank on the hospital campus. Patients undergo transplant on site at the time of colonoscopy with close clinical follow up which encourages monitoring of treatment outcomes and long term side effects and safety of treatment.

**Results** To date 28 FMTs have been performed at our institution at the time of colonoscopy. We have successfully set up and are maintaining an endoscopic FMT service under the hospital governance framework to address on-going local clinical need. There have been no adverse events since commencing the project.

**Conclusions** The aim of the FMT service is to provide high-quality, appropriately screened faecal samples and FMT donations for treating patients with rCDI at colonoscopy. This project shows that establishing a high-quality, safe clinical service with adequate governance and safeguards is achievable at an individual hospital level.

### eP2 ANAPHYLAXIS IN ENDOSCOPY: LEARNING FROM ADVERSE EVENTS THROUGH IN-SITU SIMULATION

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DOI 10.1055/s-0040-1704772

**Aims** To develop a novel in-situ simulation (ISS) training programme to improve learning around adverse events in endoscopy. ISS allows staff to learn and practice skills in their own clinical environment and can contribute to improved team-working and patient outcomes [1, 2].

**Methods** Following a recent adverse event, a formal review highlighted the need to be aware of anaphylaxis and other uncommon adverse events in endoscopy. As a result, we developed an ISS programme to promote learning from and improve confidence in managing adverse events. We conducted a multidisciplinary high-fidelity session based on this case with 30 participants. Faculty included a simulated patient, consultant endoscopist, resuscitation officer and research fellow with a simulation interest. Outcomes included endoscopic non-technical skills (ENTS) confidence domains and self-reported learning points. Paired T-test was used to

compare pre and post-training confidence scores and thematic analysis used to analyse participant comments. Evaluative surveys were also collected.

**Results** Across all 12 ENTS domains the mean pre-training confidence score was 77.9 (median 76.8, SD 4.19) and post-training score was 85.8 (median 86.1, SD 2.69). Overall, there was a statistically significant improvement in confidence across all ENTS domains after training ( $p < 0.001$ ). When individual scores were compared, there was a significant improvement in 2 ENTS domains above all others: 'maintaining focus and concentration during difficult situations' and 'providing emotional and cognitive support to others'. Participants' learning outcomes were categorised into four major themes: 'non-technical skills', 'education', 'personal skills' and 'patient focus'. All participants felt that ISS training enhanced multi-disciplinary teamworking.

**Conclusions** Confidence in ENTS and learning improves with simulation training around adverse events. ISS is a versatile tool that can be useful to deliver structured training to endoscopy teams in the endoscopy unit. This has the potential to improve the quality and safety of endoscopy.

### eP3 IS ENDOSCOPIST DIRECTED SEDATION FOR ERCP WITH BALANCED PROPOFOL SOLUTION (BPS) PRACTICAL AND SAFE? A PROSPECTIVE STUDY FROM A TERTIARY CARE CENTRE IN INDIA

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DOI 10.1055/s-0040-1704773

**Aims** Endoscopist directed nurse administered sedation using propofol, midazolam and fentanyl for ERCP is being utilized worldwide. However, this is not usually employed in India by the endoscopists. The aim of this study was to assess the efficacy, acceptability and safety of this sedation in low to moderate risk patients undergoing ERCP.

**Methods** It was a prospective study involving 500 patients for any indication for ERCP. The sedation was given by the trained nurses.

**Results** Sedative dosages per patient were propofol = 90 mg  $\pm$  20 mg, Fentanyl 0.75 mg  $\pm$  0.25 mg (Range 0.25 to 1.00 mg), midazolam 2 mg  $\pm$  0.5 mg (range: 1–3 mg). 97% of patients achieved (Richmond agitation sedation score of  $\geq -3$  and 96.8% Gloucester comfort score of  $\leq 2$ ). 4.22% of the patients had mild adverse events(AE) and 2.11 % had moderate AE .2 (0.4%) patients required intubation and ICU admission. Mean recovery time was 15 .3 minutes. 98.3% of the endoscopists were satisfied with the sedation achieved. 31.2% of the patients remembered the procedure. 93% of the patients were satisfied with the type of sedation.

**Conclusions** Endoscopist directed nurse administered sedation for ERCP with BPS is easy, applicable, time saving, safe, efficient and acceptable to patients.

### eP4 CAN COLONOSCOPY BE RELATED WITH GASTROENTEROLOGIST ´S BURNOUT? A PRACTICAL STUDY

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DOI 10.1055/s-0040-1704774

**Aims** Burnout syndrome can affect several elements of a clinical team, compromising their health and leading to additional difficulties in current clinical activity.

**Methods** A descriptive, prospective observational study using a Google form, made available online to a comprehensive number of Gastroenterologists between 2/5/2019 and 4/13/2019. Copenhagen Burnout Inventory questionnaire validated for the Portuguese population was used to estimate burnout levels among the individuals.

**Results** 52 gastroenterologists answered the questionnaire (female 53.8%; mean age 44.9  $\pm$  7 years). Of these, 22 (42.3%) showed some levels of burnout syndrome (16 moderate burnout; 6 high burnout). 47 out of 52 doctors, performed colonoscopy on a regular basis. This endoscopic procedure proved to be a relevant variable in the development of higher Burnout scores ( $p < 0.032$ ): Md = 46.0 (13–93) vs. Md = 16 (0–54). Of the 52 individuals, 6 (11.5%) are/ were involved in forensic proceedings, which might lead to a higher prevalence of burnout (Med 71  $\pm$  12.5  $p < 0.007$ ).

In the individual analysis of the burnout scales, there are statistically significant differences regarding the personal ( $p < 0.011$ ) and work-related ( $p < 0.045$ ) burnout scores: Md = 46 (17–96) and Md = 50 (14–96) personal and work-related burnout score, respectively. The average number of weekly endoscopic examinations proved to be an important factor ( $p < 0.048$ ): Md = 35.00 (10–100) vs. Md = 20 (0–40). Of the 21 (40.4%) individuals who responded that they would change jobs, all of them perform colonoscopies.

**Conclusions** The prevalence of burnout in gastroenterologists is high and several factors seem to contribute to this problem, including colonoscopies, the high number of techniques per week as well as the involvement in forensic proceedings. It is extremely important to be aware of such problem and identify its associated factors in order to act preventively and develop coping strategies.

### eP5 A STEEP EARLY LEARNING CURVE FOR ENDOSCOPIC SUBMUCOSAL DISSECTION (ESD) IN THE LIVE PORCINE MODEL

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DOI 10.1055/s-0040-1704775

**Aims** Endoscopic Submucosal Dissection (ESD) is a demanding procedure requiring high level of expertise. ESD training programs incorporate procedures with live animal models. This study aimed to assess the early learning curve for performing ESD on live porcine models by endoscopists without any or limited previous ESD experience.

**Methods** In a live porcine model ESD workshop, number of resections, completeness of the resections, en bloc resections, adverse events, tutor intervention, type of knife, ESD time and size of resected specimens were recorded. ESD speed was calculated.

**Results** A total of 70 procedures were carried out by 17 trainees. The percentage of complete resections, en bloc resections and ESD speed increased from the first to the latest procedures (88,2% to 100%; 76,5% to 100%; 8,6 to 31,4 mm<sup>2</sup>/min, respectively). The number of procedures in which a trainee needed tutor intervention and the number of adverse events also decreased throughout de procedures (4 to 0 and 6 to 0, respectively).

During the workshop, when participants changed to a different type of knife, ESD speed slightly decreased (18,5 mm<sup>2</sup>/min to 17,0 mm<sup>2</sup>/min) and adverse events increased again (0 to 2).

**Conclusions** Through successive procedures, complete resections, en bloc resections and ESD speed improve whereas adverse events diminish,

supporting the role of the live porcine model in the early learning phase. Changing ESD knives has a momentarily negative impact on the learning curve.

## ep6V ENDOSCOPIC SUBMUCOSAL DISSECTION (ESD) IN THE WESTERN SETTING – IS TUNNELING TECHNIQUE THE WAY FORWARD ?

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**DOI** 10.1055/s-0040-1704776

Since the advent of Peroral Endoscopic Myotomy (POEMS), tunneling technique has become a popular way of performing ESD.

After initial distal dissection, proximal end of the lesion is approached, creating a submucosal tunnel. The tunnel wall is then collapsed to remove the lesion. Data from a tertiary referral centre is depicted in ► **Table 1**, demonstrating tunneling technique is a safe, effective and efficient way to perform ESD, specially in Western settings.

► **Tab. 1**

	Average size (cm square)	Mean duration (min)	En-bloc resection	Complications	
Oesophageal (N = 15)	17	99	100%	Bleeding- 0	Perforation- 0
Colorectal (N = 9)	36	221	100%	Bleeding- 0	Perforation- 0

## ep7 ENDOSCOPIC MANAGEMENT OF NON-DIMINUTIVE POLYPS: OBSERVATIONS FROM THE EUROPEAN COLONOSCOPY QUALITY INVESTIGATION QUESTIONNAIRE

**Authors** Amaro P<sup>1</sup>, Agrawal A<sup>2</sup>, Brink L<sup>3</sup>, Fischbach W<sup>4</sup>, Fuccio L<sup>5</sup>, Hüniger M<sup>6</sup>, Kinnunen U<sup>7</sup>, Koulaouzidis A<sup>8</sup>, Ono A<sup>9</sup>, Petruzzello L<sup>10,11</sup>, Toth E<sup>12</sup>, Riemann JF<sup>13,14</sup>, Amlani B<sup>15</sup>, Spada C<sup>16</sup> on Behalf of the ECQI Group

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**DOI** 10.1055/s-0040-1704777

**Aims** To assess the endoscopic interventions performed in procedures where a non-diminutive polyp was recorded.

**Methods** The development of the procedure questionnaire, by the European Colonoscopy Quality Investigation (ECQI) Group, has been previously presented (UEGW 2015 and 2016). We analysed data collected between 2/6/16 and 30/4/18.

**Results** Of 6445 procedures, 2621 reported a polyp (40.7%). Polyp size was missing in 35 procedures, leaving 2586 procedures with at least one polyp of known size.

Polyps > 5 mm: 1294 procedures reported at least one polyp > 5 mm: 1156 reported an endoscopic intervention (89.3%), 136 reported that there was no endoscopic intervention (10.5%) while 2 did not answer (DNA, 0.15%).

Of the 138 procedures with a polyp > 5 mm that did not report an endoscopic intervention, there was one procedure in which an immediate complication (vascular syncope) was reported (132 stated no immediate complications, 5 DNA), and 37 who reported a requirement for a non-routine (immediate) repeat procedure (no 93, DNA 8).

Polyps ≥ 20 mm (polyp size ≥ 20 mm is a subset of > 5 mm): 280 procedures reported a polyp ≥ 20 mm: 227 (81.1%) reported an endoscopic intervention while 53 (18.9%) reported that they did not. Tattooing was only reported in 28 procedures (10%). In procedures where there was definitely a non-pedunculated lesion ≥ 20 mm, 19/173 (11.0%) reported tattooing.

**Conclusions** In procedures reporting non-diminutive polyps, no immediate endoscopic intervention was reported in over 1 in 10 procedures, rising to nearly one in five for procedures reporting a polyp ≥ 20 mm. Our findings indicate that tattooing rates are very low.

► **Tab. 1** Endoscopic interventions in procedures with non-diminutive polyps (multiple options possible). Note: Biopsies may not be related with polyp resection

Type of endoscopic intervention	Polyp size > 5 mm, Number, N = 1156	Polyp size ≥ 20 mm, Number N = 227 (subset of > 5 mm)
Endoscopic mucosal resection	154	58
Polypectomy: complete/incomplete	1012/18	159/10
Other: Argon plasma coagulation/biopsy/endoscopic submucosal dissection	4/41/14	1/21/6
Tattooing	40	28

## ep8 PREPARATION PROTOCOLS BEFORE CAPSULE ENDOSCOPY

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**DOI** 10.1055/s-0040-1704778

**Aims** In the current literature, some series showed similar results between a PEG solution and a clear liquid diet on the day before the CE. The aim of this

study was to compare Brotz's enteral cleansing scales between two enteric preparation protocols in patients undergoing CE.

**Methods** The authors performed a retrospective single-center analysis of CE. The enteric preparation protocols were

- 1) clear liquid diet on the previous day plus 8 hour fasting,
  - 2) 2 liters of PEG solution plus simeticone.
- The CE videos were graded regarding the level of cleanliness according to 2 grading scales developed by Brotz *et al* previously described:

- a) quantitative index (QI), which grades the level of cleanliness with a score ranging from 0 to 10 and
- b) qualitative evaluation (QE), which grades the degree of cleanliness as excellent, good, fair and poor. The diagnostic yield between the 2 protocols was also evaluated.

**Results** 110 CE were analyzed, 52.7% (n = 58) were female, with a mean age of 56.1 years-old

(± 18). 52.7% (n = 58) of the patients had the clear liquid diet protocol and 47.3% (n = 52) the PEG protocol. Sex, age and indication for CE were not significantly different between the two protocols. In addition, there were no significant differences between the PEG and the liquid diet in relation to the QI (8.13 ± 1.56 vs. 7.47 ± 1.97, p = 0.05) and the QE cleansing grades (excellent: 15.4% vs. 13.8%, good: 48.1% vs. 39.7%, reasonable: 25% vs. 27.6%, poor: 11.5% vs. 19%, p = 0.67). The diagnostic yield was not different between the 2 protocols (PEG: 58.8% vs Clear liquid diet: 55.2%, p = 0.7).

**Conclusions** The use of a PEG solution did not show to affect the small-bowel cleansing in CE when evaluated by QI and QE Brotz scales, and did not affect the diagnostic yield of CE.

## eP9 ANALYSIS OF PERFORMANCE MEASURES IN SMALL BOWEL CAPSULE ENDOSCOPY (SBCE)

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DOI 10.1055/s-0040-1704779

**Aims** The European society of gastrointestinal endoscopy (ESGE) small-bowel working group identified a list of performance measures for small-bowel endoscopy with the final goal of quality improvement. The aim of this study is to analyze the performance measures for small bowel capsule endoscopy (SBCE) at a service level.

**Methods** A cross-sectional analysis of SBCE performed between 01/2018-07/2019 was performed in our center. The authors evaluated the 10 performance measures (6 key and 4 minor) associated to the 5 quality domains that were proposed.

**Results** The authors analyzed 241 SBCE, 55.6% female, with a mean age of 58.4 ± 18 years-old. Key performance measures: appropriate indication for SBCE according to ESGE clinical guideline in 92.5% (223/241); complete small bowel visualization in 95.9% (231/241); diagnostic yield of 47.3% (114/241); SBCEs performed within 14 days of overt bleeding episode in 78.9% (15/19); post-SBCE referral for DAE according to ESGE technical review in 24.2% (22/91); and capsule retention in 0.4% (1/241). Taking into account the minor performance measures, the following results were identified: adequate bowel preparation according to a validated cleansing scale (Brotz) in in 49.6% (114/230, excluding 11 patients with active bleeding); use of a patency capsule in patients with high risk of capsule retention in 2.6% (1/39); adequacy of SBCE reporting in 35.7% (86/241); and no SBCE reports described the reading speed.

**Conclusions** In our center, only 2 key performance measures were accomplished: complete small bowel visualization (≥ 80%) and capsule retention (< 2%). Although some standards will be difficult to achieve (i.e. use of standard terminology ≥ 90% and adequate bowel preparation ≥ 95%), feedback to the staff

involved in the procedure should be given to increase performance indexes and achieve the proposed standards.

## eP10 SAFETY OF DEEP SEDATION WITH PROPOFOL IN PATIENTS ASA III

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DOI 10.1055/s-0040-1704780

**Aims** To assess the safety of deep sedation with propofol controlled by the usual endoscopy team (doctor, nurse, assistant) in ambulant patients ASA III. – To analyse the risk factors for the occurrence of complications during deep sedation in these patients. – To assess the effect of the use of CPAP in patients with OSAS on the occurrence of complications.

**Methods** Observational cohort study. Consecutive patients undergoing non-complex outpatients gastroscopy, colonoscopy, and diagnostic echoendoscopy in which deep sedation is administered by the endoscopy team are included. Patients were divided into group 1 (ASA = III) and group 2 (ASA < III).

**Results** 562 patients are included, 80 (14.2%) group 1. Complications related to sedation were more frequent in group 1 (23.8% vs 14.5%; p = 0.05). Mainly desaturations (22.5% vs 0.6%; p = 0.03). There was no exitus, no need to finish the procedures or anesthesia intervention.

Complications was more frequent in men (18.8% vs 12.9%; p = 0.05), advanced age (median 65 vs 61 years; p < 0.01) and duration of the procedure (p 0.03).

In multivariate analysis, age with an OR 1.029 (95% CI; 1.009–1.107); p 0.02 and BMI with an OR 1.057 (95% CI; 1.009–1.107). There is no difference in the complications of OSAS patients with CPAP (31,3%) and without CPAP (18,8%) with a p value of 0.19.

**Conclusions** There are more complications in ASA 3 patients who are administered deep sedation with Propofol under the supervision of the endoscopy team. Respiratory complications appear to be more frequent in this group although there are no significant differences and they do not influence the need to discontinue the procedure. Age and BMI appear as risk factors independent of ASA classification of complications with Propofol sedation. In patients with OSAS, the use of CPAP does not appear to be significantly related to the occurrence of complications.

## eP11 KEY PERFORMANCE MEASURES FOR ERCP AMONG ADVANCE ENDOSCOPY INDIVIDUAL TRAINEE USING THE EUS AND ERCP SKILLS ASSESSMENT TOOL (TEESAT) IN TERTIARY REFERRAL CENTER IN BULGARIA

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DOI 10.1055/s-0040-1704781

**Aims** To evaluate the percentage of reached key performance measures for Endoscopic retrograde cholangio-pancreatography (ERCP) during advance endoscopy training in young endoscopy postgraduate fellow.

**Methods** We conducted a prospective study from October 2018 until November 2019, enrolling 104 patients who were undergoing ERCP in a tertiary referral center University Hospital "Tsaritsa Yoanna – ISUL", Sofia, Bulgaria with supervision of an expert and a trainee. We used validated, task-specific, skills-assessment "the EUS and ERCP skills assessment tool (TEESAT)" and grading for each skill was done using a 4-point scoring system and measuring the percentage of reached key performance measures for ERCP proposed by European Society of Gastrointestinal Endoscopy (ESGE) guidelines during fellow training.

**Results** Adequate antibiotic prophylaxis before ERCP was reached in 95% of the patients. Bile duct cannulation rate by the trainee was 75% and for the expert was 92% in cases of trainee failure. Mean time for bile duct cannulation was 11 minutes (6–15 min.). Clearance of common bile duct stones by the trainee was 91.4% of the cases. Stent placement below the hilum in cases of biliary obstruction was achieved in 84.6% of the cases. Post-ERCP pancreatitis (PEP) rate was 13.5% after trainee ERCP. Overall technical competence was achieved by the trainee for grade 1 ERCP in about 104 cases with TEESAT overall assessment 5 (average for level of training) evaluated by endoscopy expert. Competence for grade 2 ERCP was not achieved at this stage and 3 of the ESGE key performance measures was not reached.

**Conclusions** The thresholds of 104 ERCPs are not enough to reach all the ESGE key performance measures for ERCP. TEESAT is useful and easy to use assessment tool for evaluating competence during advance endoscopy training for ERCP and to improve quality of endoscopy we need to be implement TEESAT during endoscopy training to reach better learning curves.

## eP12 ENDOSCOPY AND GENDER, SIMILIARTIES AND DIFFERENCES

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DOI 10.1055/s-0040-1704782

**Aims** Our aim was to assess similarities and differences among males and females underwent endoscopy, including indications and results.

**Methods** Review of the endoscopy reports from 2012 to 2016. Data regarding demographics, indications, procedure's result and all-cause mortality were collected.

**Results** 12,213 gastroscopies among males, (age, 56.7 ± 17.4) and 15,817 among females (age, 56.0 ± 17.3, p = 0.002) were performed. Abdominal pain, anemia, celiac and nausea/vomiting were more common as indication for gastroscopy in women (p < 0.001), while Barrett's esophagus, cirrhosis, esophageal varices and gastrointestinal bleeding are more common in men (p < 0.001). Gastritis, duodenitis, peptic ulcers, achalasia, esophageal polyps and gastric cancer are higher in men (p < 0.001), while Hiatal Hernia and gastric polyps were more found in women (p < 0.001). Higher all-cause mortality among males, 486 (4%) vs 284 (1.8%), p < 0.001) were found.

11,827 colonoscopies among male (age 60.22 ± 13.7) and 12,587 among female (age 59.44 ± 13.4, p < 0.001) were performed. Change of bowel habits, abdominal pain, constipation, diarrhea and positive fecal occult blood test were higher in women as indication for colonoscopy compared with men (p < 0.001), while rectal bleeding was more common among men (p < 0.001). Colonoscopy findings showed higher normal examination, hemorrhoids and melanosis coli in women (p < 0.001), while Poor preparation and rectal carcinoma were higher in men (p < 0.001). Higher all-cause mortality was in men 175 (1.5%) vs 129 (1%) in women was observed.

**Conclusions** Significant differences regarding indications, procedures findings and long-term all-cause mortality were found between women and men referred to gastroscopy or colonoscopy.

## eP13 INTERVENTIONAL TRAINING MODEL FOR FLEXIBLE ENDOSCOPY IN POSTOPERATIVELY ALTERED ANATOMY OF THE UPPER GI TRACT

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DOI 10.1055/s-0040-1704783

**Aims** Many surgeries in the upper gastrointestinal tract, especially the steadily growing number of bariatric procedures, often result in a fundamentally altered anatomy. Insufficient knowledge of the altered anatomy leads to an increased risk in follow-up endoscopy, for example due to cholelithiasis after bariatric surgery. A realistic, patient-like training model is not yet available, but could improve the quality of diagnostic and, above all, therapeutic endoscopy in patients with postoperatively altered anatomy.

**Methods** First, the altered anatomy was completely reconstructed with digital 3D programs using patient-analog data. Materials from textile research were used as well as rigid and flexible 3D printing materials for tissue replication. Furthermore, already developed and patented artificial tissues, plastics such as latex, acrylic, silicone and various elastomers were used to reproduce animal-free, realistic and interventional organ structures of the upper gastrointestinal tract.

**Results** A modular hands-on training phantom was created, which shows a situation after partial gastric resection with Roux-en-Y reconstruction. Further anatomical variants (gastric bypass, Billroth II, reconstruction after Whipple surgery) are currently being developed. Interventionally, an ERCP can be trained under fluoroscopy with papilla and bile duct intervention with different access techniques (e.g. device assisted endoscopy) as well as the treatment of a duodenal stump insufficiency with a VAC sponge.

**Conclusions** The training of flexible endoscopy for patients with postoperatively altered anatomy is possible with newly developed phantoms. An evaluation of the phantom is performed on volunteers with different levels of experience.

## eP14 SYSTEMATIC UPPER ENDOSCOPY CONCOMITANT WITH COLONOSCOPY PERFORMED WITHIN THE COLORECTAL CANCER SCREENING PROGRAM: IMPACT ON THE PATIENT-MANAGEMENT STRATEGY

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DOI 10.1055/s-0040-1704784

**Aims** The French screening program for colorectal cancer is based on a fecal immunological test (FIT), followed by colonoscopy in case of its positivity. The interest of adding a concomitant upper endoscopy, to detect upper digestive lesions (precancerous or others), is still debated. We aimed to evaluate the frequency of upper digestive lesions detected by upper endoscopy, performed concomitantly with colonoscopy for positive FIT, and their impact on the management of patients (i.e. surveillance, medical treatment, endoscopic or surgical procedure).

**Methods** Data of all patients who consulted for a positive FIT between May 2016 and May 2019 in our center, and for whom concomitant upper endoscopy and colonoscopy were performed, were analyzed retrospectively. Patients with significant history of upper gastrointestinal disease, or active gastrointestinal symptoms were excluded.

**Results** One hundred patients were included (median age (min-max): 62 (50–75), men 64%). Macroscopic and/or microscopic upper digestive lesions were found in 58 of them (58%): *Helicobacter pylori* infection in 17 patients, gastric precancerous lesions in 9 patients (chronic atrophic gastritis with intestinal metaplasia, n = 8; low grade dysplasia n = 1), and Barrett's esophagus requiring

surveillance in 4 patients. The impact on the patients' management was of 44% (n = 44/100), with no significant difference between the groups with positive or negative colonoscopy.

**Conclusions** A systematic upper endoscopy coupled with colonoscopy for positive FIT could represent an efficient strategy for upper digestive lesions screening in France as it reveals macroscopic and/or microscopic lesions in over 50% of patients, precancerous lesions in over 10% of patients, and has an overall impact on the management in over 40% of patients. Further studies are necessary to confirm these results and to evaluate cost-effectiveness of this approach.

## eP15V ESOBRONCHIAL FISTULA POST SLEEVE GASTRECTOMY SUCCESSFULLY TREATED BY ENDOSCOPIC SUBMUCOSAL DISSECTION AND OVER THE SCOPE CLIP

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**DOI** 10.1055/s-0040-1704785

A 28 years old patient who underwent a SG complicated 2 days later by a gastro-bronchial fistula, with sub-phrenic and pulmonary abscess. Drainage and closure by endoscopic OTSC failed and an esophago-jejunal anastomosis was performed. One month after, the CT scan found a re-permeabilization of the fistula between the oesophago-jejunal anastomosis and the pulmonary abscess. The patient was referred to our unit for an endoscopic submucosal dissection (ESD) around and into the fistula tract followed by closure with OTSC. The removal of the cicatricial mucosa by ESD favored new healing. Three months later the fistula was cured.

## eP16V ENDOSCOPIC SUTURING FOR A CHALLENGING CASE OF A PERSISTENT POST-RADIATION BRONCHO-ESOPHAGEAL FISTULA

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Endoscopic suturing is an alternative to surgical treatment for a number of applications in gastrointestinal care.

A 59 year-old man underwent a gastroscopy that revealed a post-radiation mid-esophageal stricture and a 25 mm fistula connecting the cervical esophagus with a right lung bronchus.

The OverStitch Sx was introduced into the esophagus without an overtube. One running suture was performed to tightly appose the edges of the fistula and completely seal the defect. Finally, a FCSEMS was placed. The suturing time was 24 minutes.

This device can be a valuable tool in the armamentarium for the management of complex situations.

## eP17 ADULT OUTPATIENTS' EXPERIENCES OF UNDERGOING AN ELECTIVE COLONOSCOPY PROCEDURE: A QUALITATIVE EXPLORATIVE INDIVIDUAL INTERVIEW STUDY

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**DOI** 10.1055/s-0040-1704787

**Aims** ESGE-guidelines recommend evaluation of patients' experience as an important performance measure of colonoscopy. Therefore, the aim of this study was to explore how adult outpatients' experience to undergo a colonoscopy, regarding the time prior to, during and after the procedure.

**Methods** A qualitative study where the data derived from face-to-face interviews (n = 24), that were analysed using thematic analysis. Recruitment: December 2018 to May 2019 at a University Hospital Endoscopy Department in southern Sweden. All patients underwent a split-dose 4-L polyethylene glycol regimen for bowel preparation prior to the colonoscopy. The sample was purposeful and the informants were adult outpatients (21–83 years, m/f: 11/13) who had undergone an elective colonoscopy procedure for the first time.

**Results** The thematic analysis revealed two evident themes, expectations and well-being. The informants clearly described a need of formal information about the colonoscopy to be able to understand what would happen before, during and after the procedure. Furthermore, the bowel preparation was experienced as burdensome, indeed the cleansing could even be worse than the colonoscopy itself. Going through a colonoscopy was experienced as being in an exposed situation, and therefore well-behaved manners from healthcare professionals towards the informants were emphasized as important and contributed to a positive experience. Additional, small talk and humour served as a diversion from the apprehensive expectations of the colonoscopy. The responsiveness of the healthcare to meet the informants' needs regarding discomfort and pain during the procedure were important since these needs sometimes were difficult for the informants to verbalize during the colonoscopy.

**Conclusions** The experience of a colonoscopy is highly individual and, the healthcare professionals' ability to be responsive to each individuals needs determines how well they experience to undergo a colonoscopy. Healthcare professionals need to embrace the patients' perspective and, treat them respectfully as well as to provide valuable information.

## eP18V OVER-THE-SCOPE-CLIP (OTSC) CLOSURE OF AN IATROGENIC GASTRO-COLIC FISTULA FOLLOWING MAL-DEPLOYMENT OF A LUMEN-APPPOSING METAL STENT

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**DOI** 10.1055/s-0040-1704788

A 44-year-old man with necrotising pancreatitis was referred for EUS-guided drainage of infected 12 × 5 cm symptomatic walled-off-necrosis(WON). At EUS, 20 mm lumen-apposing-metal-stent(LAMS) was deployed through the posterior gastric wall. CT revealed that the LAMS had been inadvertently mal-deployed into the colon.

Endoscopic removal of the LAMS and closure of the resultant gastro-colic-fistula(GCF) by over-the-scope-clip(OTSC) placement was attempted. Simultaneous upper and lower GI-endoscopy performed under general-anaesthesia. The LAMS was removed and the colonic defect was closed with a 14 mm-OTSC using twin-grasping-forceps tissue apposition, followed by similar closure of gastric defect with two 12 mm-OTSCs.

Successful closure confirmed endoscopically and radiologically with indigo-carmin-dye and contrast.

## eP19 EXPERIENCE FROM A TERTIARY CENTRE FOR OPTIMAL MANAGEMENT OF PATIENTS REFERRED FOR COMPLEX ENDOSCOPIC PROCEDURES: AN ADVANCED ENDOSCOPY MULTIDISCIPLINARY TEAM MEETING

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DOI 10.1055/s-0040-1704789

**Aims** Optimisation of patient care through multidisciplinary team (MDT) meetings is now established as the standard of care in cancer pathways. Cases presented at MDTs are discussed by a panel of experts in order to provide optimal management. An 'Advanced-endoscopy MDT' may help to achieve consensus on decision-making, clinical outcomes and patient satisfaction.

**Methods** In our tertiary referral institution, we developed and adopted an 'Advanced-Endoscopy MDT' to evaluate complex cases. A bi-weekly meeting was established with the presence of expert interventional endoscopists, radiologists, histopathologists, dedicated gastrointestinal surgeons and nurse endoscopists. Depending on the cases discussed, additional experts were also in attendance. Endoscopic images, radiological scans and histopathology reports were assessed in order to decide treatment options and surveillance intervals. We retrospectively reviewed all patients that were discussed. Demographic, clinical, endoscopic findings and outcome data were analysed.

**Results** Over 20 months, 35 meetings were conducted; 463 cases were discussed for a total of 323 patients. The main reasons for MDT referral were for consideration of double-balloon enteroscopy (DBE) (107 patients) and for appropriate endoscopic or surgical management of mucosal/submucosal GI lesions. Through MDT discussion, 9 patients were referred for surgical management; 34 patients were treated with endoscopic-submucosal-dissection (ESD) and 72 patients with endoscopic-mucosal-resection (EMR). One ESD procedure was abandoned due to high suspicion of deep invasion and was referred for surgery. From the remaining 33 cases, R0-margins were reported for 32/33 patients. Eight patients referred for DBE did not require endoscopic input and 29 cases were reviewed twice as additional radiological investigations or small bowel capsule endoscopy were deemed necessary. No major adverse event including perforation, severe delayed GI bleed or sepsis occurred after any endoscopic procedure discussed at the MDT.

**Conclusions** Based on our preliminary experience of an 'Advanced-Endoscopy MDT' is a useful platform for the safe, effective and efficient management of complex advanced endoscopic procedures.

## eP20 PEPTIC ULCER BLEEDING IN ELDERLY PATIENTS – WHAT HAS CHANGED OVER A TEN YEAR PERIOD

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DOI 10.1055/s-0040-1704790

**Aims** To demonstrate differences in epidemiological, clinical, endoscopic characteristics and outcome in elderly patients (> 80 years) with peptic ulcer bleeding (PUB) between 2008 and 2018.

**Methods** From January 2008 till December 2008 a total of 34 elderly patients referred to our emergency department due PUB. From January 2018 till December 2018 a total of 45 elderly patients referred to our emergency department due PUB. Both group of patients were screened and enrolled in this study.

**Results** A significantly higher number of elderly patients was found in our study relative to the proportion of older people in the population (3.3 vs 24.8% and 4.6 vs 35.2%) ( $p < 0.001$ ). There was no statistically significant difference in PUB incidence in elderly patients between 2008 and 2018 (9.7/100,000 vs 12.9/100,000). In 2018 most patients had moderately severe to severe comorbidities (88.9% vs 41.2%,  $p < 0.001$ ). Initial hemostasis was performed in significantly more patients in 2018 than in 2008 (66.7 vs 44.1%,  $p < 0.04$ ). There was no difference in the recurrence of bleeding (9.1% vs 6.7%) and 30-day mortality (8.8% vs. 6.7%) between year 2018 and 2008. In 2008 significantly more patients was transferred to Department of surgery (11.8% vs 0%,  $p = 0.02$ ). In 2018 patients were longer hospitalized (8 vs. 6.5 days,  $p < 0.01$ ). In the year 2018 and 2008 the majority of patients with PUB were taking agents that attenuate cytoprotective function of stomach and duodenal mucosa (66.5 vs 55.1%). In 2018 higher number of patients had anticoagulant and antiplatelet therapy compared to 2008 (44.3 vs 14.7%,  $p < 0.01$ ).

**Conclusions** A significantly higher number of elderly patients was found in our study relative to the proportion of older people in the population. We registered increase comorbidities, duration of hospitalisation, use of agents that attenuate cytoprotective function of stomach and duodenal mucosa, use of antiplatelet and anticoagulant therapy for the last 10 years in elderly patients.

## eP21V ENDOSCOPIC REMOVAL OF A NISSEN SURGICAL MESH AFTER ESOPHAGEAL TRANSMURAL MIGRATION INDUCED BY STENT PLACEMENT

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DOI 10.1055/s-0040-1704791

A 89-year-old woman presented a gastroesophageal stricture after fundoplication with a polytetrafluoroethylene mesh. After dilations, endoscopy revealed a mucosal discontinuity upstream stenosis, with the mesh being apparent. A 80 × 20 mm FC-SEMS was placed. After removal, mesh was still embedded. At this time, a fully covered 40x26/16/26 mm diablo-shape stent was placed without removal intention. Two years later, diablo-stent was noted to have migrated proximally, with a mobile second foreign body (surgical mesh). The mesh was removed after overtube assistance. After removal, a long deep tear with extraluminal air was found. EVT was performed with clinical resolution. Patient was discharged eating normally.

## eP22 EFFECT OF BOWEL PREPARATION ON RENAL FUNCTION IN PATIENTS WITH AND WITHOUT CHRONIC KIDNEY DISEASE – A RETROSPECTIVE AUDIT OF 1000 COLONOSCOPIES

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DOI 10.1055/s-0040-1704792

**Aims** Records for patients who underwent colonoscopy and who received a 2 L polyethylene glycol (PEG) bowel preparation were reviewed to evaluate

► **Tab. 1** Comparison of percent change in creatinine and eGFR in patients with and without CKD. CKD-chronic kidney disease; eGFR-estimated glomerular filtration

	No. of Patients	% Creatinine Change	% eGFR Change
Patients with CKD	58	4.70%	2.60%
Patients without CKD	151	1.30%	0.05%
Significance of % Change in CKD vs Non-CKD		p = 0.18	p = 0.18

whether there is any effect on renal function in those patients with chronic kidney disease (CKD) versus those without.

**Methods** We screened 1000 randomly chosen patients from a pool of 2128 colonoscopies in 2017. Data were collected on quality of bowel preparation, history of CKD, creatinine and eGFR values in the 60 days before and after colonoscopy. Patients with CKD were defined as those patients with a documented diagnosis or an estimated glomerular filtration rate (eGFR) of less than 60 mL/min for more than 3 months.

**Results** Bowel preparation quality was good or excellent in 41% of patients. Out of 1,000 patients, only 20.9% (n = 209) had their renal function checked both 60 days before and after colonoscopy. Of these, 28% (n = 58) had a history of CKD. Overall, there was no statistically significant difference in the change in eGFR before and after colonoscopy for patients without CKD compared to those with CKD (p = 0.18). There were only five patients with eGFR of < 30 mL/min and in this subgroup there was no significant renal impairment after colonoscopy. There were no acute kidney injuries in both groups.

**Conclusions** The data suggest that 2L PEG solution is safe in patients with impaired renal function. Routine screening for CKD in patients undergoing bowel preparation for colonoscopy may not be justified.

## eP23V MASSIVE HEMORRHAGE AFTER ENDOSCOPIC ULTRASOUND GUIDED FINE NEEDLE ASPIRATION OF A CEPHALOPANCREATIC CYSTIC LESION

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**DOI** 10.1055/s-0040-1704793

A 68 years-old female was referred for endoscopic ultrasound study of a cephalopancreatic cystic lesion. A 22 G FNA was performed under ultrasound and Doppler guidance. After needle removal, a high-velocity and pulsatile hemorrhage was detected in the puncture site of the duodenal wall. Using the echoendoscope, we performed adrenaline (0.0001%) injection and applied two clips, with a partial control. We opted for switching to a gastroscope, complementing the hemostatic therapy with three more clips and injection of 2 mL of polidocanol (2%). The patient remained stable and was discharged after 72 hours of clinical vigilance.

## eP24 ACUTE UPPER GASTROINTESTINAL BLEEDING AT A 'HOT' SITE – WHAT FACTORS INFLUENCE ENDOSCOPY?

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**DOI** 10.1055/s-0040-1704794

**Aims** Acute upper gastrointestinal bleeding (AUGIB) is a medical emergency with a 10% mortality risk. Dividing endoscopy services into two separate sites: elective ('cold' site) and emergency ('hot' site) is a novel approach that avoids competition for endoscopy slots, thus optimising patient outcomes. We aimed to describe time to endoscopy and outcomes at an exclusively 'hot site' and identify predictors of delayed endoscopy (> 24 hours).

**Methods** Retrospective study of all emergency gastroscopies performed at a 'hot' London-based endoscopy site between 6/9/2018 – 8/5/2019. The 'hot' site provisions a session of endoscopy dedicated to inpatients during Monday to Friday, and on-call emergency theatre access during weekends if required. No elective endoscopies are performed at this unit. A decision tree classifier was used to select features contributing to delayed endoscopy and a multiple logistic regression model utilized these shortlisted factors to assign values of importance with regard to delayed endoscopy.

**Results** 151 gastroscopies were performed during the study period (132 new admissions (87.4%), 19 in-hospital bleeds (12.6%)). 55% of patients had an endoscopy within 24 hours.

Multiple logistic regression found that patients admitted with anaemia (p < 0.001, OR 1.54) and weekend admissions (p < 0.005, OR 1.34) were independent predictors for delayed endoscopy.

**Conclusions** Almost 90% of emergency gastroscopies at our 'hot' site are performed for direct AUGIB admissions. Those admitted with suspected AUGIB undergo endoscopy sooner than those with an inpatient bleed. Primary presentation with anaemia and weekend admissions are associated with delayed endoscopy. The majority of patients at our exclusively 'hot' site did not have a delayed endoscopy.

► **Tab. 1** Endoscopy times: Admission vs Inpatient AUGIB

	Admission with suspected AUGIB	Inpatient suspected AUGIB	p-value
Mean Time to endoscopy (hours)	34.1 (Range: 1.8–175.2)	49.5 (Range: 1.1–336.1)	0.03

## eP25 ASSOCIATION BETWEEN ADHERENCE TO GLUTEN-FREE DIET AND DUODENAL VILLUS RECOVERY ON ENDOSCOPY, IN PATIENTS WITH CELIAC DISEASE AND SEVERE DUODENAL ATROPHY FOR OVER 10 YEARS

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**DOI** 10.1055/s-0040-1704795

**Aims** To evaluate the association between GFD and the recovery of SDA in patients with CD for over 10 years according to EGD criteria, confirmed on histology and serology.

**Methods** The initial sample consisted of 109 patients diagnosed with CD between 2005 and 2010 at the endoscopy service of Gastroclínica Cascavel (Paraná, Brazil), 53 of whom had SDA type III on EDG (Bonatto classification) confirmed on histology and serology. One patient died and 8 were lost to follow-up, leaving a final sample of 44 (83.01%), of whom 36 (81.81%) were women aged 30–68 years (mean: 50.47) and 8 were men (18.18%) aged 32–74 years (mean: 51.62). The patients were reevaluated after 10 years to test for correlations between adherence to GFD (a-d) and disease status.

**Results** Considering the sample of 44 patients, patients adhering to GFD experienced complete recovery of SDA on EGD and normal histological

and serological findings (n = 25; 56.81%) or cross-contamination on EGD, with histologically confirmed foci of atrophy and normal serological findings (n = 9; 20.45%). Patients who adhered partly to GFD (voluntary gluten ingestion) were diagnosed with moderate atrophy on EGD, displayed atrophy on histology and had serological findings outside the normal range (n = 4; 9.09%). Patients with no gluten restriction displayed no change in relation to the original diagnosis of severe atrophy (n = 6; 13.63%).

**Conclusions** Esophagogastroduodenoscopy, confirmed by histology and serology, was efficient at evaluating the association between adherence to GFD and duodenal villus recovery according to the Bonatto classification (Bonatto et al., 2016): type III (severe atrophy), type II (partial atrophy), type I (foci of atrophy), and type 0 (complete recovery of villi).

## eP26 ENDOSCOPIC VACUUM THERAPY EFFECTIVENESS IN PATIENTS WITH ESOPHAGEAL FISTULAE

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**DOI** 10.1055/s-0040-1704796

**Aims** Anastomotic leakage, esophageal wall perforation in Boerhaave syndrome or complications after endoscopic procedures are severe life threatening conditions and are not a very rare situation in clinical practice. Usage of endoscopic vacuum therapy (EVT) showed its effectiveness in treatment of esophageal defects of different origin. The aim of the study was to summarize our experience and to assess effectiveness of EVT in daily clinical practice in patients with esophageal fistulas including postoperative and postendoscopic leakages.

**Methods** 6 patients were treated with EVT from July 2018 to June 2019. Mean age was 54,7 (47–60), 4 men. Two patients with leaks after anastomosis placement, two patients with esophagopleural fistula, Boerhaave syndrome and two patients with complications after endoscopic manipulations were treated in Regional Clinical Hospital.

**Results** Mean time of EVT was 18,3 days (5–32), from 1 to 6 changes were done. In 5 patients vacuum therapy was effective. One patient with Boerhaave syndrome was operated due to the expended purulent process. Method shows its effectiveness in complications after endoscopic manipulations even in the case of esophageal mucosal fragments necrosis. Giant submucosal tumor was removed by tunnel method, tumor fragmentation was done because of the leiomyoma size (7\*4 cm). On the third day after manipulation mucosal defect were found with contrast leakage to the mediastinum. 4 changes of vacuum system were necessary to heal the defects with percutaneous gastrostomy placement. No stenosis or any other complications were observed.

**Conclusions** EVT proved its effectiveness in case of not only Boerhaave syndrome but both in patients with postoperative leakages and with complications after endoscopic manipulation, even to prevent surgery with esophagectomy. Clinics with wide range of surgical procedures should have EVT as a complication management option.

## eP27 VETTING BY GENETIC COUNSELLORS IMPROVES APPROPRIATENESS OF COLONOSCOPY FOR PATIENTS ON SURVEILLANCE REGISTER WITH FAMILY HISTORY OF COLORECTAL CANCER

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**DOI** 10.1055/s-0040-1704797

**Aims** The demands for endoscopy have increased and robust vetting of patients on the waiting list for colonoscopy could reduce the waiting lists. In our hospital all patients on the surveillance register are vetted by endoscopists for appropriateness based on information available on the previous reports/referrals. For the patients undergoing surveillance because of family history of colorectal cancer, the vetting team may not have information regarding the full family history or access to the family genetic screening results. For this sub group, we organised a one off vetting by the genetic counsellors from our regional genetics team. The aim was to ensure that these patients are on the correct surveillance schedule.

**Methods** Patients were identified from the endoscopy reporting database. Genetic Counsellors stratified the patients into four groups – screening intervals to remain the same, increase, decreased or discharged. Patients were referred to the clinical genetics for further assessment if there was insufficient family history or family history of high moderate risk.

**Results** 323 patients were undergoing surveillance because of family history of colorectal cancer. After the assessment 93(28%) of patients were discharged and there was a change in the screening schedule for further 50(15%) patients. There was no change in screening schedule for 73(22%) and 107(33%) patients were referred for further review to genetics team. Even with conservative estimates, this exercise was able to release 18 lists to be utilised for other patients. Cost of overall administrative work equated to £4,000 with a cost saving of £42 K.

**Conclusions** Robust vetting by genetic counsellors of patients who are on the colonoscopy surveillance register for family history resulted in creating extra capacity by removing any patients who were being inappropriately listed for the test. We plan to roll out this methodology across the regional endoscopy units in Cheshire and Merseyside.

## eP28 ASSOCIATION OF PATIENT FACTORS WITH FLAT AND PROTRUDED LESION REPORTING: OBSERVATIONS FROM THE EUROPEAN COLONOSCOPY QUALITY INVESTIGATION QUESTIONNAIRE

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**DOI** 10.1055/s-0040-1704798

**Aims** To assess the patient factors associated with flat and protruded lesion reporting, as defined by Paris classification.

**Methods** The development of the procedure questionnaire, by the European Colonoscopy Quality Investigation (ECQI) Group, has been previously described (UEGW 2015 and 2016). We analysed data collected between 2/6/16 and 30/4/18.

**Results** Of 6445 procedures, 2621 reported a polyp in at least one segment (40.7%). Protruded lesions were reported in 2160 procedures and flat lesions were reported in 692 procedures.

Reporting of both flat and protruded lesions varied by age (generally increasing with increasing age,  $p < 0.0001$ ). Reporting also increased for both flat and protruded lesions in those who had received a previous total colonoscopy within the last 5 years ( $p < 0.0001$ ): flat lesions 13.8% vs 9.8%; protruded lesions 38.7% vs 29.2%. Flat lesion reporting was not associated with BMI ( $p = 0.667$ ), while protruded lesion reporting was generally higher in higher BMI groups ( $p < 0.0001$ ).

Flat lesions were more commonly reported in inpatients than outpatients (16.2% vs 10.7%,  $p < 0.0001$ ), while protruded lesions were more common in outpatients (29% vs 33.4%,  $p = 0.023$ ).

The reporting of flat lesions was significantly higher in procedures reporting adequate bowel clearance (11.4% vs 8.0%,  $p = 0.004$ ); no change in protruded lesion reporting ( $p = 0.317$ ).

**Conclusions** Higher BMI was associated with increased reporting of protruded lesions, but had no effect on flat lesion reporting. Flat lesions were more likely to be reported in inpatients while protruded lesions were more likely in outpatients. Protruded lesion reporting was unaffected by adequacy of bowel clearance while flat lesion reporting was higher in procedures reporting adequate bowel clearance.

► **Tab. 1** Procedures in which a polyp was reported by type and colon segment

	Right	Transverse	Left	Any segment
Any polyp	1328	723	1645	2621
Flat lesion	346	181	329	692
Protruded lesion	1012	544	1346	2160

## eP29 MALLORY WEISS TEAR RELATED UPPER GI BLEEDING: AN INTERNATIONAL MULTICENTRE STUDY

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DOI 10.1055/s-0040-1704799

**Aims** Mallory Weiss tears (MWT) are relatively uncommon causes of upper GI bleeding (UGIB). Patients with these lesions are generally considered at low risk of poor outcome, although data are relatively limited. There is also uncertainty about which patients with MWT require endoscopic therapy and which modality should be applied. We aimed to describe an international cohort of patients presenting with UGIB secondary to MWT.

**Methods** From an international dataset of patients undergoing endoscopy for acute UGIB at seven hospitals in UK, Denmark, Spain, USA, Singapore and New Zealand, we assessed those patients with MWT bleeding, including the endoscopic stigmata seen and endo-therapy applied. We compared baseline factors,

rebleeding rates and 30-day mortality between patients with MWT, peptic ulcer bleeding (PUB) and all cause UGIB.

**Results** Out of a total of 3648 patients with UGIB, 125 (3.4%) had MWT related bleeding. MWT patients were younger (61 vs 69 years,  $p < 0.0001$ ), more likely to be male (66 vs 53%,  $p = 0.006$ ). Baseline heart rate (93 vs 90 bpm,  $p$ -value = 0.039) and haemoglobin (116 vs 90 g/L,  $p < 0.0001$ ) were higher in MWT compared with PUB patients. Spurting blood, oozing of blood, or adherent clots, were seen in 6.4%, 26% and 24% MWTs respectively. 51 (41%) MWT patients received endo-therapy: 44 (86%) had adrenaline injection, 24 (47%) clips, and 5 (10%) thermal probe applied. 25 (20%) treated patients had combination endo-therapy. Although the rebleeding rate (4.9 vs 12%,  $p = 0.016$ ) was lower in MWT patients compared with PUB patients, mortality was similar (5.7 vs 7.0%,  $p = 0.71$ ).

**Conclusions** Although patients presenting with MWT were younger, with a lower rebleeding rate, their mortality was similar to that of patients with PUB. Endoscopic therapy was applied to 43% MWT patients, with adrenaline injection, followed by clips, the most common modalities employed.

## eP31 UPPER EUS ENDOSCOPIST DIRECTED PROPOFOL SEDATION: RISKS FACTORS OF DESATURATION

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DOI 10.1055/s-0040-1704800

**Aims** Describe risk-related factors of desaturation during EUS sedation taken into account the clinical and facial characteristics.

**Methods** Prospective analysis of upper echoendoscopies sedated with propofol administered for expert endoscopic team, between December 2017-July 2019. The variables included in the table1 and adverse effects related to sedation were analysed as SBP < 70/ > 230, HR < 40x ' / > 120x ', SPO2 < 90%, bronchospasm and laryngospasm.

**Results** 324 patients age: 65 ± 13 years, 53% men. The characteristics of population are described in Table 1. 49 patients (17%) presented adverse events: desaturation < 90% (11.5%), Severe Adverse Events (6,2%): SatO2 < 70% (1,9%), hypotension (0,6%), tachycardia (0,3%), hypertension (0,6%), laryngospasm (3,4%). 3 patients need ventilatory support (Ambu). None intubation or cardiac arrest.

Patients with age > 65 (18,8%  $p = 0.017$ ), sleep apnea (28,6%  $p = 0.000$ ), mandibular subluxation (31,6%,  $p = 0.005$ ), short neck (29,4%  $p = 0, 016$ ) and mandibula retrognathism (32,4%  $p = 0.002$ ) had a higher risk of adverse effects in univariate analysis. Of these, age > 65 (OR 2.13; 95%CI 1.06–4.27), sleep apnea (OR 2.68; 95%CI 1.34–5.36), short necks (OR = 2.43; 95%CI: 1.01–5.87;  $p = 0.048$ ) and mandibular subluxation (OR: 2.73; 95% CI 1.18–6.32) were independent predictors of adverse effects related to sedation.

► **Tab. 1** Baseline characteristics and desaturation risk factors

BASILINE CHARACTERISTICS Age > 65 years Performance status regular/bad IMC > 35 % Sleep Apnea ASA I–II ASA ≥ III	19% 23% 5.2% 22% 66% 34%
CRANIUM FACIAL CHARACTERISTICS Cranio-facial deformity Short necks (tiromentonian distance < 6 cm) Mouth openings (interdental distance < 3 cm) Mandibular retrognathism (hiodomentonian distance < 3 cm) Mandibular subluxation < 0	15% 11% 3% 11% 12%
SEDATION Average time Propofol Propofol + midazolam Propofol + fentanyl	42 ± 17 min 59.9% 39.2% 0.9%

**Conclusions** Difficult airway parameters, imply a high risk of complications in sedation for upper echoendoscopy. Consequently, measures to prevent hypoventilation in patients with these characteristics must be considered.

### eP32 INCREASING PREVALENCE OF ANXIETY AND DEPRESSION DISORDERS AFTER DIAGNOSIS OF CHRONIC PANCREATITIS: A 5 YEAR UNITED STATES POPULATION BASED STUDY

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**Aims** Few studies have shown an increased risk of certain psychiatric conditions as well as substance abuse disorders in CP, however; these were limited by sample size. Using a large database, we sought to describe the epidemiology and risk association of several psychiatric diseases in patients with CP.

**Methods** A commercial database (Explorys Inc, Cleveland, OH, USA), an aggregate of electronic health record data from 26 US healthcare systems was surveyed. After excluding patients under 18 years old, a cohort of patients with a Systematized Nomenclature of Medicine-Clinical Terms of CP between 2014–2019 was identified. Within this cohort, the prevalence rates of anxiety and depressive disorders were calculated. Age-, race-, gender-, comorbidities-based distributions were described.

**Results** Of the 30,276,810 individuals in the database, 67,260 patients had a diagnosis of CP (0.22%). When compared to patients with no history of CP, patients with CP were more likely to develop anxiety [OR: 6.94; CI: 6.85–7.04,  $P < 0.0001$ ] and depression [OR: 5.09; CI: 5.01–5.17,  $P < 0.0001$ ]. Patients with CP and psychiatric conditions were more likely to be young adults (18–64 years old), females, Caucasians (Table 1). Patients are more likely to be smokers, with history of alcohol and substance abuse, personality disorder and had higher rate of suicidal ideation.

**Conclusions** In this large 5 year follow up population based study, we found patients with CP were at higher risk of developing several psychiatric conditions including anxiety and depression. Multidisciplinary care including appropriate recognition and management of their psychiatric disease burden is warranted.

► **Tab. 1** Risk of anxiety, depressive disorders in chronic pancreatitis patients using univariate analysis

	Anxiety	Depression
Age 18-65	1.72 (CI: 1.66–1.78)	1.55 (CI: 1.50–1.60)
Females	1.90 (CI: 1.84–1.96)	1.80 (CI: 1.75–1.86)
Caucasian	1.84 (CI: 1.77–1.91)	1.40 (CI: 1.35–1.44)

### eP33 A COST EFFECTIVENESS ANALYSIS (CEA) COMPARING THE PURE-VU SYSTEM TO STANDARD COLONOSCOPY IN AVERAGE AND HIGH-RISK PATIENTS PRESENTING WITH INADEQUATELY PREPPED COLONS

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 DOI 10.1055/s-0040-1704802

**Aims** To perform a CEA examining impact of a new technology (Pure-Vu System) for cleaning inadequately prepped colons during colonoscopy.

**Methods** Using a lifetime horizon Markov model, we examined those patients at average (initiating CRC colonoscopy screening at 50 years old) and high risk (e.g.  $\geq 40$  years of age; first degree family member with history of CRC; or with 2 first-degree relatives with documented advanced adenomas) for CRC. Medicare or private payer reimbursements were used as proxies for costs. The model followed these patients over their expected lifetime for the care associated with colonoscopy  $\pm$  CRC. Eight models were analyzed: average risk Medicare patients with and without Pure-Vu, average risk patients private pay with and without Pure-Vu; high risk Medicare patients with and without Pure-Vu and high-risk private pay patients with and without Pure-Vu. In average risk patients, it was assumed that colonoscopy was performed every 10 years. In high risk patients, it was assumed that colonoscopy was performed every 3–5 years. The model was run per the probability of being in various conditions (e.g. no cancer [screening/surveillance], early and later stage cancer) over their remaining lives. We assumed Pure-Vu was used only in the 25% of patients with inadequately prepped colons at a cost for Pure-Vu of \$750. Additionally, we assumed in 5% of all cases in which Pure-Vu was used, inadequate bowel prep still occurred and colonoscopy was incomplete.

**Results** The use of Pure-Vu in patients at average and high-risk for CRC saved the healthcare system \$1,070 – \$1,863 per patient (Medicare) and \$1,384 – \$2,266 per patient (private pay) respectively compared to standard colonoscopy. Quality adjusted life years (QALYs) were similar to or slightly improved with Pure-Vu mainly due to a lower incidence of CRCs.

**Conclusions** Pure-Vu should be considered in these types of patients as it saves money and improves/maintains QALYs.

### eP34 ENDOSCOPIC ULTRASOUND (EUS) IN ELDERLY PATIENTS

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 DOI 10.1055/s-0040-1704803

**Aims** To assess the indications, safety and clinical utility of EUS in patients over 75 years of age.

**Methods** Our retrospective study included EUS investigations performed between 01/2015-10/2019 in our GI-Department, which features a centralized endoscopy-service in a University affiliated tertiary care teaching hospital. Propofol and Midazolam were used for non-anesthesiologist sedation during endosonographies.

The following information was recorded: EUS indication, EUS type (diagnostic or interventional) and occurrence of complications (sedation-related or procedure-related).

**Results** 239/843 (28.3%) of EUS performed were done in patients > 75 years and included in our analysis. These 239 EUS-examinations were performed in 219 patients with a mean age of  $82.8 \pm 4.9$  years (39.7% male).

The main EUS indications were: suspicion of choledocholithiasis-43.5%, solid pancreatic masses-22.1%, subepithelial tumors-14.2% and pancreatic cystic lesions-8.8%.

Choledocholithiasis was diagnosed in 42.7% of suspected cases and confirmed by endoscopic retrograde cholangiopancreatography (ERCP). Only one patient (1.6%) with negative EUS needed ERCP in follow-up.

EUS diagnosed a biliary etiology in 2/4(50%) cases with initially acute pancreatitis of unknown etiology.

Interventions were performed in 69/239(28.8%) of the EUS-investigations. 76.8% of interventions were performed for pancreatic pathology(55.1% for solid pancreatic masses and 21.7% for pancreatic cysts).

Drainage of an infected cysts/walled-of necrosis was performed in 7.2% of interventional EUS. No complications were registered in these patients.

Overall complications were observed in 20/239 (8.4%)EUS-examinations.

Sedation related complication occurred in 10/239 (4.2%) of EUS. 9/10 patients suffered a transient, non-fatal respiratory insufficiency and one had hypotension. No intensive or respiratory care facility was needed.

Slight, spontaneously stopping intraluminal bleeding was observed in 13% of interventional EUS.

**Conclusions** EUS is safe and usefulness by patients over 75 years. EUS is very accurate for diagnosis of choledocholithiasis in these patients, avoiding unnecessary ERCPs and shortening of hospital stay. EUS drainage is safe and efficient in elderly patients with infected pancreatic cysts or walled-of necrosis.

### eP35 PERFORATION OF THE COMMON BILE DUCT DURING SPYGLASS CHOLANGIOSCOPY IN A PATIENT WITH IGG4-RELATED SCLEROSING CHOLANGITIS (IGG4-SC)

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DOI 10.1055/s-0040-1704804

**Aims** SpyGlass cholangioscopy is increasingly performed for the evaluation of indeterminate biliary lesions. Although it has demonstrated favorable safety, additional complications are expected to arise with expanded use of this technology. We describe an uncommon case of common bile duct (CBD) perforation associated with cholangioscopy.

**Methods** An 72 year-old man with diabetes mellitus was referred for ERCP due to a 1-month history of obstructive jaundice. MRCP revealed perihilar and distal bile duct stenosis, with normal main pancreatic duct. The CA-19.9 levels were normal, but the IgG4 serum levels were elevated (496 mg/dL). An ERCP with cholangioscopy was performed for further evaluation.

**Results** Cholangioscopy confirmed both perihilar and CBD strictures demonstrating irregular mucosa, increased vascularity, and papillary-appearing mucosal projections. Tissue sampling of the perihilar stricture was challenging due to excessive resistance encountered during advancement of the SpyBite catheter. The cholangioscope was then withdrawn at the distal CBD and an attempt was made to re-advance the cholangioscope by way of a free hand technique with the closed SpyBite forceps marginally protruding through its tip. This has led to a visible mechanical perforation of the distal CBD, confirmed by the presence of retroperitoneal emphysema on abdominal CT. A 10 Fr plastic biliary stent was inserted followed by conservative measures, including antibiotics and withholding oral intake. The patient was discharged 10 days after perforation following an uneventful recovery. The diagnosis of IgG4-SC was most probable and steroid treatment was initiated. A follow-up ERCP performed 3 months after the institution of steroids revealed stricture disappearance and the stent was removed.

**Conclusions** Perforation of the CBD wall may occur during SpyGlass cholangioscopy, although it is uncommon and can be treated conservatively. Free-hand technique and protrusion of the SpyBite forceps out of the working channel as well as the underlying IgG4-SC pathology might be risk factors.

### eP36 LONG-TERM FOLLOW-UP OF PARKINSON'S DISEASE PATIENTS TREATED WITH PEG-J DRUG DELIVERY SYSTEM

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DOI 10.1055/s-0040-1704805

**Aims** To establish the incidence of post-procedural (early) and device-related (late) adverse events in patients treated with the PEG-J delivery system for their Parkinson's disease.

**Methods** We have conducted a retrospective study of a group of 92 patients who underwent a PEG-J (Freka PEG CH15 and Freka CH9 Intestinal Tube) placement between 2014 and 2019. For all patients, the jejunal catheter was introduced under endoscopic control only. PPI and antibiotic were infused periprocedurally as prophylaxis. We defined as early complications the events that have occurred within the first 30 days after the PEG-J placement and late complications – the events after the 30th day. The patients' long-term tolerance to the delivery device, the occurrence of complications, and the factors related to them were analyzed.

**Results** The mean age in the group was 67.9 years (47–83). Male patients were prevalent (72,4%). The median follow-up time was 31 months. One patient (1.1%) left the program due to recurrent pain.

The overall complication rate was 7.6% (n7). Two (2.2%) patients developed complications within the first 30 post-procedural days (one Clostridium Difficile colitis and one mesenteric thrombosis).

We observed late adverse events in 5.4% (n5) of the patients. Three of them developed decubital pyloric and duodenal ulceration, which entailed removal of the jejunal extension and further use of medication (PPI/PPI + H.p. eradication). Buried bumper syndrome was diagnosed in two patients, which required a surgical extraction (local excision and laparoscopy). The average time it took for complications to emerge was 30 months. Sixty 60% of those with late complications (3/5) were positive for H. pylori infection.

**Conclusions** The permanent exposure to the PEG-J system is associated with relatively low complication rate. The need of follow-up gastroscopy is questionable for these patients. We suggest conducting a H. pylori examination and eradication before the PEG-J placement.

### eP37 THE IMPORTANCE OF INTRODUCING COLONOSCOPY SCREENING IN THE ADULT CYSTIC FIBROSIS PATIENTS: A SINGLE TERTIARY REFERRAL CENTRE ANALYSIS

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**Aims** The risk of colorectal cancer (CRC) in patients with cystic fibrosis (PWCF) is 10times greater than the general population and 30times greater post-transplant. Due to this new screening guidelines were published in Gastroenterology by the CF Colorectal Cancer Screening Task Force in 2018. Our aim in this audit is to benchmark current practise at our centre against current guidelines.

**Methods** Our endoscopy database was interrogated from 2012 to present to identify PWCF who received a previous colonoscopy.

**Results** **Group 1: PWCF non-transplant cohort;** 161 patients were included. 26 were > 40 years. 4 had a previous colonoscopy. No colonoscopies were done for screening, all as patients were symptomatic. One patient had a polyp at colonoscopy. Adenoma detection rate (ADR) 25%.

21 patients > 40 have no previous colonoscopy. Surveillance for CRC in this cohort has yet to be implemented with 0% compliance to date.

**Group 2: PWCF post solid-organ transplant;** 16 patients were included. 13 were > 30 years. 11 patients had a previous colonoscopy (total number colonoscopies = 20). Reasons for index colonoscopy: 5 screening, 3 symptomatic, 3 no indication on report. 10 colonoscopies in total were done for screening. 3 patients had polyps found at index colonoscopy (2 adenomas high grade dysplasia, 4 adenomas low grade dysplasia) and surveillance colonoscopies was arranged subsequently. ADR was 27.27%. Current practise in the post transplant cohort is close to new recommendations with 84% compliance however only 45.45% of index colonoscopies were done initially for screening.

**Conclusions** Current guidelines are only in existence over 12 months. Our analysis suggests there is an awareness of the need for CRC screening in the post-transplant cohort but there is need for improvement. In PWCF with no previous transplant screening has not been a priority and needs to be implemented. Currently we are implementing a screening programme in keeping with current guidelines.

### eP38 ENDOSCOPIC HEMOSTASIS OF BLEEDING WITH MINIMALLY INVASIVE INTERVENTIONS FOR CHOLEDOCHOLITHIASIS

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**Aims** Bleeding from the area of the major duodenal papilla (MDP) is one of the complications of endoscopic transpapillary interventions for choledocholithiasis.

Improving the results of treatment of patients with intra- and postoperative bleeding after minimally invasive interventions for cholelithiasis choledocholithiasis.

**Methods** 70 cases of bleeding were detected. The patients were divided into two groups: group 1 comprising 46 patients, for whom during hemorrhagic manifestations to reach hemostasis, irrigation and injections of aminocaproic acid was used; and group 2 comprising 24 patients, for whom, with the analogous hemorrhagic manifestations, irrigation and injections of the solution of incomplete silver salt of polyacrylic acid (commercial name "Hemoblock") was used.

**Results** Clinically pronounced bleeding; increased bleeding, impeding visualization was noted in 63 (90%) patients: in the control group in 41 (89%), in the main group in 22 (91%).

Bleeding recurrence due to further manipulations (litotripsy, litextraction, etc.) was observed in 14 (20%) patients in the whole patient contingent: in the control group it occurred in 12 (86%) patients, which was significantly more than in the main group, where the recurrence of bleeding was ascertained in 2 (14%) cases ( $p < 0.05$ ). Transpapillary interventions were carried out in full in one stage in 43 (61.4%) patients, while in the control group in 15 (35%) patients, which was significantly less than in the main group, where the interventions were performed in one stage in 28 (65%) ( $p < 0.05$ ) patients.

**Conclusions** Intraorgan application of hemostatic agent "Hemoblock" allowed us to stop the bleeding, improve visualization in the area of the surgical intervention, achieve the result in one stage, reduce the time of the intervention. Complications after the application of a new hemostatic agent (solution of incomplete silver salt of polyacrylic acid) were not observed.

### eP39 THE DIAGNOSTIC YIELD OF ILEAL INTUBATION DURING COLONOSCOPY AMONG PATIENTS WITH GASTROINTESTINAL COMPLAINTS

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**DOI** 10.1055/s-0040-1704808

**Aims** Ileal intubation and biopsy are considered as a main method for diagnosis of IBD, enteropathy and etc, nevertheless there is no definite recommendation for routinely ileal intubation during colonoscopy in patients without IBD suspicion. The aim of this study was to evaluate necessity of terminal ileum intubation during endoscopy among patients with GI complaints but without IBD suspicion.

**Methods** We performed 1100 colonoscopy under intravenous sedation between October 2018 and November 2019. The examination was performed using Olympus CV 170 and Olympus CV 190 Plus and NBI technique was used. 95% of patients were prepared with PEG and all patients had complaints meteorism, diarrhea, constipation, abdominal pain etc.

Almost 100% cases were performed successful ileal intubation excluding oncological obstructions. In 90% cases duration of intubation was about 1 minute, in 10% cases maximum duration was 5 minutes.

**Results** The terminal ileum was successfully intubated in 1092 patients. Isolated ileal lesions were present in 54 cases (5%) and biopsy was taken for each patient. The various abnormalities were found erosions, ulcers, polypoid lesions, villous atrophy, cobblestone mucosa etc. In 34 cases (3.2%) macroscopic abnormalities were present both in ileum and colon. Additionally, the information about previous ileal pathologies were in less than 20 % cases.

**Conclusions** Ileal intubation during colonoscopy find out isolated ileal pathologies in 5% cases and it is 1,58 times more than combined ileal and colonic pathologies. Therefore, there are no significant waste of time or difficulties for ileal intubation, but outcome is more valuable.

### eP40 COLONOSCOPY IN OLD AGE – INDICATIONS, OUTCOMES AND SAFETY

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**DOI** 10.1055/s-0040-1704809

**Aims** The aim of this study was to review the indications, outcomes and safety of colonoscopy in the very elderly patients ( $\geq 85$  years).

**Methods** We retrospectively reviewed all patients  $\geq 85$  years who underwent colonoscopy from June 2016 to June 2018. We collected data on demographics, indications, bowel preparation, findings, caecal intubation and complication rates, 8-day readmission and 30-day mortality rates.

**Results** There were 243 patients who underwent colonoscopy, mean age 87.0 years (range 85–96), males 41.8 %, females 51.9 %. The commonest indication: change in bowel habit (30.1%), anaemia (21.8%), abnormal imaging (12.3%), rectal bleeding (10.3%), polyp surveillance (7.4%), and bowel cancer surveillance (4.1%).

Patients went thorough bowel preparation with PEG solution with excellent or adequate results in 209 (86.0%), and inadequate in 34 (14.0%). Unadjusted caecal intubation rate was 84.4 %, rising to 88.7 % when adjusted for obstructing lesions.

Causes for incomplete procedure ( $n = 38$ ): obstructing lesions ( $n = 12$ , 31.6%), inadequate bowel preparation ( $n = 7$ , 18.4%), patient intolerance ( $n = 6$ , 15.7 %), and diverticulosis ( $n = 5$ , 13.2%). Cancer was found in 21

patients (8.6%). Polyps of any size were found in 90 patients (37.0%), but significant polyps (polyps  $\geq 10$  mm) were found in 42 patients (17.3%).

Three patients developed peri-procedure complications: oxygen desaturation ( $n = 1$ ), hypotension ( $n = 1$ ) and reduced consciousness ( $n = 1$ ). There were no significant bleeding or perforation reported for this cohort. One patient presented to hospital within 8 days due to sepsis of unknown origin; readmission rate of 0.4% at 8 days. There was one death within 30 days, not attributed to the colonoscopy.

**Conclusions** Our study concludes that colonoscopy is safe in very elderly patients and has low complication rates. The diagnostic yield was high and if adjusted for obstructing lesions and poor bowel preparation the caecal intubation rate was 91.5%. Elderly patients may need supervised bowel preparation to improve caecal intubation rate.

## eP41 IMPACT OF ENHANCED INSTRUCTIONS FOR BOWEL PREPARATION ON THE QUALITY OF BOWEL CLEANSING FOR PATIENTS UNDERGOING OUTPATIENT COLONOSCOPY

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**DOI** 10.1055/s-0040-1704810

**Aims** The ESGE recommends the use of enhanced instructions for bowel preparation. Limited literature exists regarding educational interventions at the daily routine. Therefore, aim of this study was to assess the effect of enhanced instructions in an extra appointment for patients undergoing outpatient colonoscopy.

**Methods** 87 consecutive patients underwent outpatient screening colonoscopy in a single center between February and April 2019 were offered the possibility of an extra outpatient appointment. 55% ( $n = 48$ ) used the enhanced instruction regarding preparation. The quality of the bowel preparation was measured according to the Boston Bowel Preparation Scale (BBPS). T-Test was used to assess differences between patients who received enhanced compared to those with standard instructions.

**Results** Sex and age were distributed equally between both groups ( $p = 0,86$  &  $p = 0,46$ ). All patients received a split dosed Sodium-picosulfate solution. Mean BBPS differed significantly between patients who received enhanced information with a mean of 8,54 (SD 1,03), compared to those who did not visit the extra outpatient appointment [7,3 (SD 1,9;  $p < 0,001$ ]. Mean BBPS was 2,83 (SD 0,38) vs. 2.51 [SD 0,60;  $p = 0,003$ ] in the left colon.

Among patients who did not visit vs. those who use the extra instruction appointment, mean BBPS was 2.51 (SD 0,60) vs. 2,83 [(SD 0,38);  $p = 0,003$ ] in the distal, 2,44 (SD 0,68) vs. 2,88 [(SD 0,33);  $p < 0,001$ ] in the transversal and [2,38 vs. 2.83 ( $p < 0,001$ )] in the proximal colon.

**Conclusions** Patients receiving enhanced instructions for bowel preparation prior to colonoscopy had a significant better BBPS compared to those who have been receiving standard information.

## eP42 DIFFERENCES IN BOWEL PREPARATION QUALITY BETWEEN IN- AND OUTPATIENTS UNDERGOING SCREENING COLONOSCOPY

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**Aims** Adequate bowel preparation is a key factor for high quality colonoscopy. Patients undergoing outpatient colonoscopy assess bowel preparation without

enhanced instructions or help, while nurses provide structured education, follow the administration of colonoscopy preparation in hospitalized patients, as these patients are likely to be older and have significant comorbidities. Therefore, aim of this study was to analyze the effect of enhanced instructions and surveillance for inpatients on the quality of bowel preparation for patients undergoing screening colonoscopy.

**Methods** 184 consecutive screening colonoscopies of in- and outpatients in a single center between February and April 2019 were analyzed. Nurses provide structured education, follow the administration of colonoscopy preparation for hospitalized patients. Quality of bowel preparation was measured according to the Boston Bowel Preparation Scale (BBPS).

**Results** 87 (47%) outpatients underwent screening colonoscopy and 97 (53%) were hospitalized for other indications during the time of bowel preparation. Mean age in outpatients was 57,77 (95% CI 54,79–60,75) and 69,62 (67,01–72,23) in hospitalized patients ( $p = 0,004$ ). Patients sex were distributed equally ( $p = 0,462$ ). Mean BBPS differed significantly in outpatients compared to colonoscopy in inpatients with a mean of 8,00 (SD 1,61) vs. 6,72 (SD 2,29) in total, 2,69 (SD 0,51) vs. 2,30 (SD 0,80) in the left, 2,68 (SD 0,56) vs. 2,23 (SD 0,80) in the transversal and 2,63 (SD 0,63) vs. 2,20 (SD 0,837) in the right colon ( $p < 0,001$ ). Examination had to be repeated due to inadequate bowel preparation in 8,77% ( $n = 5$ ) among outpatients and 12,37% ( $n = 12$ ) within hospitalized patients ( $p = 0,121$ ).

**Conclusions** Despite additional instructions for inpatients provided by the nurses regarding preparation for colonoscopy, BBPS in total, as well as for each colon segment was significantly lower in hospitalized patients than those who underwent ambulatory colonoscopy. Factors limiting the success of preparation like higher age and comorbidities cannot be overcome by structured information and surveillance.

## eP43V COMPLEX GASTRO-CUTANEOUS FISTULA AFTER SEVERE ACUTE PANCREATITIS

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**DOI** 10.1055/s-0040-1704812

52-years-old female with acute severe pancreatitis and multiple intra-abdominal collections. As complications, she developed gastro-cutaneous fistula and duodenal perforation, so placement of three covered self-expandable metal stent (Two Esophagus Bariatric fully covered 28 × 180 mm and one Colon/Rectum fully covered 20 × 100 mm as duodenal stent) was carried out. Endoscopic treatment with acellular pig matrix (PERMACOL) and suture of the gastric defect using of the APOLLO OverStitch system was decided. A guidewire was inserted from the abdominal wall into gastric cavity through the fistula and was extracted through the mouth. The borders were flared with argon gas and endoscopic suture was performed.

## eP44 A PORCINE MODEL OF CROHN'S DISEASE ANASTOMOTIC STRICTURE FOR TRAINING IN ADVANCED ENDOSCOPIC TREATMENT METHODS

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DOI 10.1055/s-0040-1704813

**Aims** Currently, options in post-surgical recurrence of stricturing Crohn's disease (CD) are limited to another surgery or balloon dilation with unsatisfactory long-term effects. However, development of new invasive endoscopic techniques is hindered by safety issues with testing these methods on patients. Aim was to create a large animal model of anastomotic stricture with CD properties enabling development of new endoscopic techniques and serving as a training subject for endoscopists to familiarize themselves with these methods. **Methods** A side-to-side ileo-colonic anastomosis 20 cm from anus was created in a modified Y-roux manner with bowel continuity preserved. Two weeks after surgery we started submucosal injection of 5% Phenol and 0.2% Trinitrobenzenesulfonic acid solution. This solution was injected every 2 weeks in each quadrant of the anastomosis until development of a stricture. The site of anastomosis was assessed and measured endoscopically 2 weeks after the last application and then every 2 months until month 6. Subsequently, it was resected and sent for histology.

**Results** Nineteen minipigs (48.8 ± 8.1 kg) were included with no postoperative complications. After a mean of 4.4 ± 0.7 injections of 10.5 ± 3.0 ml of the solution the anastomotic stricture was created in 16 pigs (84.2%). Mean diameter of the stricture at baseline was 11.6 ± 2.2 mm. The strictures were macroscopically inflamed and ulcerated, not passable for the endoscope. The follow-up of 6 months was successfully finished in 15 animals (79.0%) with the mean deviation from the initial diameter in every measurement of -0.02 ± 2.26 mm (p = 0.963) and mean final diameter of 11.7 ± 3.4 mm. In one animal, the anastomosis closed 4 months in the follow-up. The histopathologic evaluation revealed presence of severe submucosal fibrosis, signs of chronic inflammation and microgranulomas like those in CD.

**Conclusions** We have developed reproducible porcine model of anastomotic stricture with histologically verified changes mimicking CD and stable diameter. This experimental model has proven successful in endoscopic stricturotomy hands-on training.

## eP45 THE USE OF A SPECIALIZED BLEEDING-MANAGEMENT TEAM HAD NO IMPACT ON MORTALITY FOR ACUTE UPPER GASTROINTESTINAL BLEEDING (AUGIB): AN ITALIAN PROSPECTIVE MULTICENTER COHORT STUDY

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DOI 10.1055/s-0040-1704814

**Aims** Aim of the study was to verify if patients with AUGIB, treated by a BT had better survival in comparison with patients not treated by a BT.

**Methods** Data on patients admitted for AUGIB were collected from January 1<sup>st</sup>, 2014 to December 31<sup>st</sup>, 2015. Bleeding-related death was defined as any event occurring within 30 days from admission for non-variceal bleeding and within 42 days for variceal bleeds.

**Results** Out of 3324 AUGIB enrolled, 2088 patients (62.8%) were admitted in hospitals without a BT facility. 2764 (83.1%) had non-variceal bleeding (NV-AUGIB); of these 1817 (65.7%) were admitted to hospitals without BT. 560 patients had variceal bleeding (V-AUGIB); of these 271 (48.4%) were admitted to hospitals without BT. Endoscopic therapy was performed more frequently in hospitals with BT in both NV-AUGIB 561/947 (59.2%) vs 855/1817 (47.1%) p < 0.001 and V-AUGIB 278/289 (96.2%) vs. 247/271 (91.1%) p < 0.01. The death rate in the patients undergoing endoscopic treatment in hospitals with BT 33/561 (5.8%) or without 53/855 (6.2%) p = 0.90 was similar both in NV and V -AUGIB 30/271 (11.1%) vs 37/289 (12.8%) p = 0.53. By multiple logistic regression, factors significantly affecting mortality were age, (O.R. 1.03 [95% CI < 1.01 to 1.04]; p < 0.001); variceal bleeding (O.R. 1.94 [95% CI 1.30 to 2.90] p < 0.001) need for transfusions (OR 1.45 [95% CI 1.13 to 1.85] p < 0.003); rebleeding (OR 14.9 [95% CI 0.58 to 21.02] p < 0.000). Presence of a Bleeding Team (OR 1.24 [95% CI 0.91 to 1.69] p < 0.17) did not impact on survival.

**Conclusions** The majority of the patients with AUGIB was admitted to Hospitals without BT. The endoscopic treatment was delivered in a high proportion of patients in all Hospitals. The presence of a BT did not impact on survival in both NV and V - AUGIB.

## eP46 EFFECTIVENESS AND SAFETY OF ENDOSCOPIC SUBMUCOSAL DISSECTION OF GASTROINTESTINAL LESIONS: A PROSPECTIVE WESTERN CENTER EXPERIENCE

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DOI 10.1055/s-0040-1704815

**Aims** Endoscopic submucosal dissection (ESD) allows 'en-bloc' resection of superficial gastrointestinal neoplasms, which has implications for complete excision and pathological analysis. This study aimed to assess the effectiveness and safety of ESD as treatment for gastrointestinal lesions in a prospective western cohort.

**Methods** All consecutive patients undergoing ESD at one Italian tertiary referral centre from August 2017 to October 2019 were prospectively enrolled.

**Results** 83 patients with undergoing ESD were included in the study. 65% were male, median age was 68 years (IQR 60-79). Overall, 69% of lesions were located in the rectum and in the sigma, 4% in the right colon, 5% in the esophagus and 22% in the stomach. Most lesions (59%) were lateral spreading tumors (LST), while the remaining were polypoid lesions. The most frequent Kudo classification type was IV, observed in 39% of cases. The mean lesion size was 36 ± 14.5 mm.

ESD was feasible in all cases. The median duration of procedures was 100 minutes (IQR 75-125). Complications included perforation in 6/83 cases (7%), minor bleeding within a week from the procedure in 4/83 cases (5%) and transient urinary retention in 1/83 patient (1%). Colonic ESD showed a non-significant higher complication rate compared to esophagogastric ones (17% vs 4%, p = 0.28).

The resulting histology was cancer (43%), high-grade dysplasia (43%), low-grade dysplasia (13%), and neuroendocrine tumor (1%). An R0 resection was achieved in 73/83 (88%) of patients. Budding and angioinvasion were observed both in only 2% of cases.

Deep or lateral margin positivity was more frequent for lesions in the esophagus/stomach compared to colonic ones (33% vs 27%,  $p = 0.60$ ) and in LST lesions compared to polypoid lesions (39% vs 21%,  $p = 0.09$ ).

After a median follow-up of 8.4 months, there was only one case of recurrence.

**Conclusions** Our experience confirmed that ESD is a safe and effective treatment for early gastrointestinal neoplasia.

### eP48 NEW ORAL ANTICOAGULANT USE AND NON-VARICEAL UPPER GASTROINTESTINAL BLEEDING, A SINGLE CENTRE RETROSPECTIVE STUDY

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DOI 10.1055/s-0040-1704816

**Aims** Use of new oral anticoagulants (NOAC) is becoming increasingly more common in our ageing co-morbid population. We reviewed outcomes in patients admitted with non variceal upper GI bleeding (NVUGIB) over a 10 month period to assess their indication for use and if the use of NOACs or anti platelet agents correlated with UGIB outcomes

**Methods** Retrospective study analysing electronic endoscopy database from an academic teaching hospital from October 2018 to August 2019. All OGDs performed due to the indication of haematemesis and melaena were analysed. Patients were excluded if procedure was performed as an outpatient or if cause of bleed was deemed due to variceal bleeding. Clinical data and endoscopy reports were obtained from patient's electronic health record.

**Results** 137 Inpatient upper GI endoscopies were performed for the indication of hematemesis and melaena ( $n = 17$ ) haematemesis ( $n = 38$ ), melaena ( $n = 62$ ). 117 were due to non variceal bleeding. Of those, 26 (23.2%) patients were on NOAC, of which 11.7% ( $n = 10$ ) were also on concomitant antiplatelet therapy. In our cohort, GBS correlated with number of RBC transfused ( $p < 0.001$ ). NOAC use was associated with higher GBS score ( $p = 0.021$ ) and higher Rockall score. There was no significant association between GBS ( $p = 0.49$ ), Rockall ( $p = 0.41$ ) and number of RBC transfused ( $p = 0.26$ ). No clear indication for NOAC and antiplatelet use was identified in 64 number of patients.

**Conclusions** The study further validates the use of GBS in clinical setting. Rationalisation of NOAC and concomitant antiplatelet use should be considered, where possible.

### eP49V TRANSGASTRIC DRAINAGE OF PELVIC ABSCESS DUE TO ACUTE PANCREATITIS

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DOI 10.1055/s-0040-1704817

We present two cases of transgastric drainage of abscesses in left iliac fossa after acute pancreatitis.

50-year-old male. WON 25 × 12 cm with extension to left anterior pararenal fascia. Transgastric drainage by LAMS and endoscopic necrosectomy was performed. A year later, patient presented abscess in left iliac fossa. Previous gastrostomy was identified so guidewire was advanced to the collection, a plastic prosthesis (8.5x20 cm) was placed.

55-year-old male. Infected WON with pelvic extension and involvement of ureter. Transgastric drainage with LAMS and necrosectomy was performed. Under fluoroscopic and endoscopic control the fistulous trajectory was identified. Guidewire and plastic prosthesis was placed through LAMS.

### eP50V ENDOSCOPIC VACUUM-ASSISTED CLOSURE THERAPY FOR NECROTIZING INFECTION AFTER PELVIC EXENTERATION

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DOI 10.1055/s-0040-1704818

A 52-year-old female patient, with a personal history of cervical cancer, presented a lymphatic relapse with mesorectum and left ureter invasion, after 8 years of follow-up. In the postoperative period of pelvic exenteration, the patient presented fever and exudate drainage through the vagina. CT scan revealed a pelvic necrotic cavity that communicated with the vagina. Intravenous antibiotics were initiated, as well as endoscopic vacuum-assisted closure therapy through the vagina. After 13 sessions of vacuum therapy, the patient was discharged. During an 18-month follow-up the patient remained asymptomatic and endoscopic evaluation showed a residual cavity with no infectious signs.

### eP51V UPPER IATROGENIC ESOPHAGEAL PERFORATION SUCCESSFULLY TREATED BY THE "COVER" TECHNIQUE WITH ANCHORING SUTURE: A MINI-INVASIVE SOLUTION IN A "TROUBLESOME" LOCATION

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DOI 10.1055/s-0040-1704819

71-year-old woman was referred to our Institute for metachronous neoplastic nodule in the upper-right pulmonary lobe. Following two complex selective orotracheal intubations, the patient underwent complete VATS right upper lobectomy. After 48-hours, patient developed dysphagia. Endoscopy showed a 40-mm longitudinal esophageal laceration 2 cm under the cricoid ring. After the failure of subsequent surgical and endoscopic revisions with clips, FC-SEMS placement with anchoring single-sutures using the OverStitch Endoscopic Suturing System was effectively performed although the too-close location to cricoid ring. After 2 months, stent was removed using a flexibly-rotatable endoscopic scissors (Ensizer Flex). At 6-month follow-up, the patient remained asymptomatic.

### eP52 BILIARY DUCT STENTING AND STENT PATENCY: WHO, HOW LONG, WHY?

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DOI 10.1055/s-0040-1704820

**Aims** Endoscopic stenting is a foremost therapy in biliary duct strictures with stent occlusion and cholangitis being the most prevalent complications. Since risk factors for stent occlusion are still unknown, we aimed at evaluating effect of stricture etiology on stent patency.

**Methods** We conducted a retrospective study of patients who underwent endoscopic biliary duct stenting in a tertiary center in 2016–2017. We collected demographic (age, gender) and clinical data (etiology of biliary duct stricture, presence of cholangitis, bile duct and gallbladder stones, cholecystectomy, antibiotics, number and diameter of stents placed, days to the next stenting and whether the subsequent stent placement was emergent) from hospital records.

**Results** Our study comprised 626 (re)stenting episodes with an intent for stent replacement after 3 months. 54,3% of patients were male, average age  $63,9 \pm 15,6$  years. Stentings were grouped according to biliary duct stricture etiology: 22% were due to cholangiocarcinoma, 36,6% – extraductal malignancy, 11,4 – echinococcosis, and 30% due to other reasons. On average stent was patent for 62 days and 44,4% of following stent placements were emergent. ANOVA revealed significant effect of etiological group on time interval to next stenting ( $F(3, 622) = 39,5, p < 0,001$ ). Logistic regression showed that biliary duct stones and cumulative stent diameter had protective effect from stenting being emergent, OR = 0,53, CI 0,34–0,83,  $p = 0,006$  and OR = 0,86, CI 0,78–0,94,  $p = 0,002$  respectively, whereas stent count increased the risk OR = 3,71, CI 1,70–8,08,  $p = 0,001$ . Cox regression revealed that cholangiocarcinoma and extraductal malignancy increased likelihood of stent replacement HR = 1,72, CI 1,38–2,15,  $p < 0,001$  and HR = 1,8, CI 1,51–2,23,  $p < 0,001$  correspondingly, whereas echinococcosis prolonged stent patency HR = 0,6, CI 0,46–0,81,  $p < 0,001$ .

**Conclusions** Etiology of biliary duct stricture is evidently important in stent patency, echinococcosis being a prolonging factor. Further bile studies are warranted to investigate echinococcosis role in stent occlusion.

### eP53V DUODENO-BILIARY FISTULA CLOSING WITH NAGI LUMINAL APPOSING METAL STENT

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DOI 10.1055/s-0040-1704821

83-year-old man who underwent gastroscopy, which showed a 5–6 mm fistula orifice in duodenal bulb. With radiological control, placed a balloon occlude fistula orifice, checking that there was a 2 cm small cavity that drained through percutaneous drainage for cholecystitis. We passed off a 0.035wire into the cavity. A NAGI luminal-apposing metal stent placed. This stent turns the external fistula into internal (duodenal-perihilar cavity). Gallbladder drainage was clamped and finally removing by the clinical improvement drainage. Patient did not present biliary obstruction symptoms. A gastroscopy was performed in 6 weeks, showed a little cavity with hyperplasic mucosa. Stent removed without complications.

### eP54 PREVALENCE AND RISK FACTORS ASSOCIATED WITH MUSCULOSKELETAL INJURIES (MSI) RELATED TO THE PRACTICE OF DIGESTIVE ENDOSCOPY (DE). RESULTS OF A SPANISH NATIONAL SURVEY

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DOI 10.1055/s-0040-1704822

**Aims**

- To determine the prevalence of MSI associated with endoscopy in gastroenterologists in the Spanish territory.
- Detect risk factors associated with MSI in our environment: Number of examinations, type of exploration, sex, essential biometric characteristics (Size, glove size, among others).
- Comparison of endoscopists with and without MSI associated with the practice of digestive endoscopy

**Methods** An electronic survey of endoscopists was carried out, disseminated nationally through email and social networks. Biometric parameters, workload, prevalence, location, and type of MSI associated with DE were recorded, among other variables.

**Results** A total of 287/1200 specialists completed the survey. 64.81% of the respondents identified have presented some MSI in relation to DE. Among the risk factors associated with a higher prevalence are the gender of the

endoscopist: > en♀ 105/139 (75.5%) versus ♂ 87/148 (58.8%); dedication > 30 hours/week to the DE. MSIs are most frequently found in: Neck/upper back (79.7%); thumb (63.5%); hand/wrist (60.4%). Of the injured endoscopists, 41.9% have had to decrease the number of procedures or suspend them (22.6%) for some time. The most frequent treatments derived from MSI were: physiotherapy sessions: 59.6%, medication (55.7%), steroid injection (19.2%).

**Conclusions** MSI have a high prevalence among endoscopists in Spain and are more frequent in women. One in 5 endoscopists stopped performing endoscopies for some period of time due to MSI. Low-moderate intensity physical activity and a smaller number of endoscopies per week were associated as protective factors.

### eP55V ´FORGOTTEN´ RETROPERITONEAL DOUBLE-PIGTAIL PLASTIC STENT CAUSING COLONIC FISTULIZATION AND ANEMIA 6 YEARS LATER: ENDOSCOPIC REMOVAL

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DOI 10.1055/s-0040-1704823

A 72-years-old man suffering from iron deficiency anemia who had undergone an EUS-guided transgastric pseudocyst drainage with double-pigtail plastic stents 6 years earlier. During the procedure, one stent migrated into the pseudocyst and decision was to leave it in place. Patient remained asymptomatic for 6 years, then he developed anemia. Colonoscopy found the stent penetrating into the descending colon. After a CT-scan showing no complications, a new colonoscopy was performed for stent removal and wall defect closure with Ovesco clip.

**Conclusions**

- 1) Extraluminal migrated stents must be retrieved to prevent late complications
- 2) Endoscopic removal may be a first-line treatment

### eP56 INGESTION OF FOREIGN BODIES: ANALYSIS OF PRE-ENDOSCOPIC PREDICTIVE FACTORS OF THEIR PRESENCE AND THE DEVELOPMENT OF COMPLICATIONS

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DOI 10.1055/s-0040-1704824

**Aims** One of the most frequent indications of urgent gastroscopy in our environment is the intake of foreign bodies (FB). Although most resolve without complications, they can be very serious.

**Aim** To evaluate possible predictors of the presence of FB in gastroscopy, complications and admission.

**Methods** Consecutive selection of patients undergoing urgent gastroscopy by ingesting FB for 18 months, since January 2018. The possible independent variables were sex, age, time to gastroscopy, type of FB, intentionality, history of esophageal pathology, history of FB intake, radiography with FB or secondary complications, administration of glucagon, assessment by ENT and significant psychiatric pathology, and, as dependent variables the presence of FB in gastroscopy, the development of complications (bleeding, perforation, infections) and the need of hospital admission. Statistical analysis performed with IBM SPSS Statistics 22.0.

**Results** 122 urgent gastroscopies were performed, finding FB in 73 (59.8%). The variables that were statistically significant related to the presence of FB in gastroscopy were age, time from onset of symptoms to gastroscopy, sex, history of FB, history of esophageal pathology and high-risk FB, although, in

the multivariate analysis were only independently related to age (OR 1.048,  $p < 0.01$ ), female sex (OR 0.307,  $p = 0.02$ ) and time to gastroscopy (OR 0.958,  $p < 0.01$ ). Age (OR 1.028  $p < 0.01$ ) was statistically significant related to the development of complications. The pathological radiography (FB and/or complication) was a predictor of the need for hospital admission (33.3 vs 6.4%,  $p = 0.04$ ).

**Conclusions** The greatest probability of finding a FB in gastroscopy is in male patients, older ones and with less time since the onset of symptoms. Older patients suffer more complications and the presence of a pathological radiological image indicates a higher probability of requiring hospital admission.

## eP57V UNUSUAL FINDING IN A PATIENT WITH GASTROINTESTINAL OBSTRUCTION

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DOI 10.1055/s-0040-1704825

An eighteen years old boy, presented in the Emergency Department with clinical signs of subocclusive syndrome. Patient's history revealed that he was known with frequent episodes of abdominal pain and diarrhea. Biochemical tests showed a Hb of 9.8 g/dl and a prothrombin index of 25%. Plain abdominal radiography pointed out mixed images with horizontal levels arranged within the right flank. Colonoscopy revealed large amount of stones within the ascending colon and cecum. Lithophagia was considered as secondary to a celiac disease. Specific antibodies turned out to be positive and the diagnosis of celiac disease was confirmed by duodenal biopsies.

Thursday, April 23, 2020

09:00 – 17:00

Esophagus

ePoster area

## eP58 THE ASSESSMENT OF HIGH-RESOLUTION OESOPHAGEAL MANOMETRY WITH NONOBSTRUCTIVE DYSPHAGIA

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DOI 10.1055/s-0040-1704826

**Aims** The aim of this study is to assess the prevalence and to identify the type of esophageal motor disorders in patients with nonobstructive dysphagia according to Chicago classification.

**Methods** Between May 2018 to June 2019, 188 consecutive patients with nonobstructive dysphagia underwent high-resolution manometry. Mechanical obstruction and mucosal disease have been excluded by upper endoscopy. They were 96 men (51%) and 92 women (49%). Mean age was 41 years (14–72). HRM data were analyzed with esophagogastric junction resting and relaxation pressures, and esophageal pattern contraction.

**Results** HRM was pathological in 116 patients (62%). Achalasia was diagnosed in 100 patients (86%). 64% classified as type II ( $n = 64$ ), 29% as type I ( $n = 29$ ) and 7% as type III ( $n = 7$ ). HRM showed motor disorders corresponding to scleroderma in 9 patients (1.8%), a esophagogastric junction outflow obstruction in 4 cases (8%) and a jackhammer esophagus in 3 cases (3%). HRM was normal in 72 patients (38%).

**Conclusions** HRM is an important advance in the assessment of esophageal motor disorders. It provides benefits in research and clinical practice, is fast becoming the gold standard to study esophageal dysmotility in spite of expensive equipment. Achalasia is the most prevalent primary motor disorder found and the type II is the most frequent according to Chicago V3.0 classification.

## eP59 IS A THROMBOELASTOGRAPH (TEG) GUIDED BLOOD PRODUCT TRANSFUSION STRATEGY A PRACTICAL PRE-ENDOSCOPIC INTERVENTION FOR PATIENTS ADMITTED ACUTELY WITH VARICEAL HAEMORRHAGE?

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DOI 10.1055/s-0040-1704827

**Aims** Management of coagulopathy in patients with cirrhosis presenting with variceal bleeding is challenging. TEG may offer a more targeted blood product transfusion approach. This study aims to evaluate the overall impact on patient care that a TEG guided blood product transfusion strategy made on patients admitted with variceal bleeding.

**Methods** We reviewed all acute admissions with variceal bleeding over a period of three months (August to October 2019). The TEG guided blood product transfusion strategy was compared with standard of care based on guidance from the Haematology.

**Results** A total of 40 cases were identified. 17 patients had a TEG performed as they were managed on the intensive care unit (Group 1). 23 patients did not have a TEG done and were given blood products as guided by the Haematology team (Group 2). In group 1, 9/17 (53%) were transfused with platelets, cryoprecipitate or FFP. 8 patients did not require transfusions as their TEG assay was normal. In group 2, 15/23 patients (65%) received blood products. On average 3 units of FFP and 2 pools of platelets were transfused in group 2 compared to 2 units of FFP and 1 pool of platelets in group 1. Overall mortality rate was 3/17 (17%) in group 1 compared to 6/23 (26%) ( $p$  value  $< 0.05$ ) in group 2.

**Conclusions** In this observational study, Patients who had a TEG assay were less likely to have a requirement for additional blood products, and when needed received less with a more targeted correction of their clotting parameters compared to those who received standard of care. This potentially could provide cost savings as well as more prudent stewardship of much needed blood products. Further studies are required to evaluate if TEG should be used more widely, including outside of the ICU.

## eP60 POEM FOR TREATMENT OF ACHALASIA WITH NORMAL ESOPHAGOGASTRIC JUNCTION RELAXATION

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DOI 10.1055/s-0040-1704828

**Aims** Manometric criteria of achalasia are absent peristalsis and incomplete relaxation of the esophagogastric junction (EGJ). We have experienced patients with clinical and radiological features of achalasia with normal integrated relaxation pressure (IRP  $< 15$  mm Hg). The aim of the study was to assess effectiveness of peroral endoscopic myotomy (POEM) for treatment of patients who are not fulfilling the Chicago Classification criteria of achalasia.

**Methods** 70 patients (37 women, age 21–78 years) with typical symptoms of achalasia were evaluated using high-resolution manometry (HRM), barium esophagogram, upper endoscopy (UE).

**Results** HRM detected achalasia I type in 25 (35.7%), achalasia II type in 34 (48.6%), achalasia III type in 3 (4.3%), absent contractility in 8 (11.4%) patients. Manometrical characteristics in absent contractility patients included absent peristalsis, low basal EGJ pressure of 9.3 (5.6–12.5) mm Hg and normal IRP of 8.5 (5.2–10.8) mm Hg. Physical examination of patients with absent contractility did not reveal signs of scleroderma, Eckardt score was 9.2 (7–12). UE showed esophageal dilatation, cardiac region was closed in all 8 patients. A barium esophagogram revealed esophageal dilatation (widest diameter was 8.5 cm) with bird-beak narrowing of the EGJ. Esophageal stasis was 5.1 (3.7–7.3) cm

after 5 minutes. These data confirmed achalasia (despite of normal IRP). POEM was performed to these patients. In 6 months after POEM endoscopy showed opened lower esophageal sphincter, barium esophagogram showed free flow of contrast from the esophagus to the stomach in all 8 patients. Eckardt score improved from 8.7 to 1.7.

**Conclusions** A subgroup of patients with typical features of achalasia but manometrically normal EGJ relaxation exist. It can be different phenotype of achalasia with low LES pressure and normal IRP, especially in cases of advanced disease. These patients can be considered as achalasia and treated as such.

### eP61 DYSPHAGIA ASSOCIATED WITH MOTILITY DISORDERS AFTER ANTI-REFLUX SURGERY: A NEW PROMISING THERAPEUTIC FIELD OF APPLICATION FOR POEM!

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 DOI 10.1055/s-0040-1704829

**Aims** Laparoscopic fundoplication (LF) is the gold standard treatment of refractory gastro-esophageal reflux (GERD). However, it may induce dysphagia in 5 to 10% of the cases. LF could induce de novo esophageal motility disorder (EMD) in 20% of the patients, inducing severe dysphagia and impaired quality of life. The management is difficult since 15% require surgical revision. Our objectives were to evaluate the efficacy of POEM on dysphagia, and to document the technical particularities and the complications

**Methods** Retrospective report of consecutive patients treated by POEM for dysphagia associated to EMD after LF. All patients had normal a high-resolution manometry (HRM) before the surgery. All were suffering from severe and persistent dysphagia, refusing revisional surgery, with abnormal findings at HRM. The procedure was a regular esophageal POEM, including a cardinal deep myotomy. The clinical assessment included Eckardt and dysphagia score and weight

**Results** Eight patients (5 men, 3 women; median age: 67.5 [44-81] years old) were included. The surgery was a Nissen LF in 4 patients and a Toupet LF in 4 patients. HRM showed aperistalsis in 6/8 patients, and an impaired LES relaxations in 6 others, four having both disorders. 4 patients underwent previous endoscopic pneumatic dilation. The median Eckardt and Dysphagia scores were 5/12 [8-11] and 3.5/5 [2-4], respectively.

The procedure was completed in 7/8 patients (one complete fibrosis), without complication. The submucosa appeared more fibrotic and vascularized, slightly lengthening the time.

The clinical efficacy rate was 75% (6/8). The median post-operative Eckardt and Dysphagia scores were 1.5/12 [0-9] et 0.5/5 [0-3], respectively, after a median follow-up of 13 months [4-53]. One failure was the technical failure, the other had two pneumatic dilations finally effective.

**Conclusions** POEM is an interesting and safe option to manage disabling dysphagia associated with EMD after LF, and deserves larger evaluation to confirm these promising outcomes.

### eP62 ODYNOPHAGIA - IS IT A SYMPTOM WORTHY OF 2WW GASTROSCOPY?

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 DOI 10.1055/s-0040-1704830

**Aims** Odynophagia is defined as a painful sensation in the oesophageal region that occurs in relation to swallowing. Endoscopy is the gold standard investigation for the diagnosis of mucosal lesions in the oesophagus. Unlike dysphagia, which has historically been an alarm symptom of oesophageal cancer, odynophagia does not form part of the suspected upper gastrointestinal (GI) cancer referral in the UK. We aimed to compare the standard 'red flag' indications for gastroscopy to odynophagia in terms of cancer detection.

**Methods** A retrospective analysis of all patients who underwent upper GI endoscopy for standard upper GI 'two-week-wait' (2WW) criteria compared with odynophagia as a primary symptom over a 14-year period (2005-2019) within an NHS Trust in North London. Data was obtained from the Unisoft Endoscopy reporting software. The findings at endoscopy for all indications were scrutinised.

**Results** Indication (n, malignant oesophageal tumours (%)): Anaemia (17,936, 94 (0.5%)); Dysphagia (10,954, 562 (5%)); Nausea and vomiting (N&V) (6380, 64 (1%)); Weight loss (6157, 119 (2%)); Odynophagia (530, 21 (4%)).

530 patients were endoscoped for odynophagia during the study period. 240 (45%) had oesophageal mucosal lesions: Reflux oesophagitis 193 (36%); Barrett's oesophagus (26 (5%); Malignant tumour 21 (4%). 32 (6%) had an oesophageal stricture.

**Conclusions** From this study, almost half of patients endoscoped for odynophagia have a positive endoscopic mucosal abnormality. 4% of patients endoscoped for odynophagia had oesophageal cancer compared with 5% of dysphagia patients. Anaemia (0.5%), weight loss (2%) and N&V (1%) all have inferior cancer pick up rates. We recommend the symptom of odynophagia be classified as an alarm symptom and those presenting with odynophagia all undergo urgent upper GI endoscopy to define the exact mucosal abnormality and exclude oesophageal cancer.

### eP63 PERORAL ENDOSCOPIC MYOTOMY WITH THE HYBRIDKNIFE

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 DOI 10.1055/s-0040-1704831

**Aims** The peroral endoscopic myotomy (POEM) is an established procedure in patients with achalasia. After incision of the mucosa the creation of the submucosal tunnel is a crucial step in this procedure. Therefore a repetitive switch between injection and dissection is necessary. With standard devices the injection needle and the dissection knife has to be changed multiple times. The Hybrid-Knife is an "all-in-one" device", which can be used in all three steps (incision, dissection and myotomy) of the POEM procedure. We report our experience in POEM with the ERBE HybridKnife.

**Methods** From a database we retrospectively analysed the technical success, outcome and complications of our patients with achalasia and treatment with POEM with the HybridKnife since 2015.

**Results** Since 06/2015 we treated 26 patients (14 female, 12 male) with an average age of 60,5 (26-80) years. The time for the procedure was 40 to 70 min. The technical success was 100% (26/26) with a clinical success of 96% (25/26). In one patient a pleural effusion occurred due to incomplete closure of the submucosal tunnel. The patient was treated successfully with drainage and intraluminal stenting. In two patients a collar emphysema was noted with no need for intervention. One patient with clinical failure was treated with a second POEM successfully.

**Conclusions** POEM with the HybridKnife is safe and successful. A potential benefit could be time saving compared with standard devices.

### eP64 PREDICTIVE FACTORS FOR GASTROINTESTINAL BLEEDING SECONDARY TO PORTAL HYPERTENSION DURING CIRRHOSIS

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 DOI 10.1055/s-0040-1704832

**Aims** Upper gastrointestinal bleeding by rupture of oesophageal varices (OV) or gastric varices (GV) is the most serious complication of portal hypertension in cirrhotic patients. The purpose of our work is to identify the predictive factors for the occurrence of hemorrhage in these patients.

**Methods** Retrospective study collecting cirrhotic patients between January 2015 and September 2019.

**Results** Seventy one patients of mean age of 62 years (between 25 and 83 years) were collected. The viral cause of cirrhosis was the most common (40.8%). OV were present in 87.73 % of patients. They were grade II or III in 71.8% of cases. GV were present in 11.2%. GHP was present in 56.3%: mild (29.5%), moderate to severe in 26.8% of cases. Red signs were found in 49.3%. Digestive haemorrhage by oesophageal varices rupture occurred in 15.4% of patients. Hemorrhage was attributed to severe hypertensive gastropathy in 2 cases (2.8%). The occurrence of a first episode of gastrointestinal bleeding secondary to portal hypertension was correlated with the presence of large OV ( $p = 0.003$ ), red signs ( $p = 0.004$ ) and hypertensive gastropathy ( $p = 0.004$ ) and a MELD score  $> 15$  ( $p = 0.001$ ). A platelet count  $< 100,000$   $\text{el}/\text{mm}^3$  was more frequent in patients presenting gastrointestinal bleeding, without significant difference (81.8% vs 45%,  $p = 0.12$ ). There were no statistically significant differences in sex, etiology of cirrhosis, portal thrombosis, ascitic decompensation or refractory ascites.

**Conclusions** In our series, gastrointestinal bleeding secondary to portal hypertension occurred in 18.2% of patients and was correlated with the presence of large oesophageal varices, red signs, hypertensive gastropathy, and advanced liver disease.

## eP66 SAFETY AND EFFICACY OF PERORAL ENDOSCOPIC MYOTOMY FOR ACHALASIA: A CANADIAN EXPERIENCE

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DOI 10.1055/s-0040-1704833

**Aims** Evaluate the outcomes of POEM in our center.

**Methods** Retrospective analysis on consecutive patients who underwent POEM for achalasia between July 2017 and September 2019. The primary end point is the reduction of the Eckardt Score after POEM by 3 points. Secondary end points are adverse event rate, duration of hospital stay.

**Results** Twenty-eight patients (mean age  $62 \pm 13$  yo, 57% men) underwent POEM at our center during the study period. Most of patients had type 1 ( $n=12$ ) or type 2 achalasia ( $n=10$ ), and 6 had other dysmotility disorders. The average length of symptoms was 7.7 years (1-34). The average Eckardt score pre-POEM was  $7.1 \pm 2.4$  (3-12). Technical success was achieved in 96% ( $n=27$ ). One procedure failed because of mucosal perforation. Average duration of procedure was  $85 \pm 34$  minutes (34-155). Length of myotomy were in average 11.2 cm. Most adverse events occurred during the procedure: bleeding and subcutaneous emphysema in 16 patients (57%) respectively, and pneumoperitoneum in 12 patients (43%). One patient had pneumothorax drained and admitted at ICU for four days, and one patient had delayed subcutaneous emphysema treated with endoscopic clips. The median length of hospital stay was 2 (2-7). The average Eckardt score at follow up was  $1.2 \pm 1.8$  (0-8). The average Eckardt score variation was  $-5.9 \pm 3.5$  (-10-4). Twenty-five patients (89%) had a reduction by 3 or more of the Eckardt score. There was no difference with the type of achalasia: type 1=100% and type 2=90%.

**Conclusions** Our data suggests that POEM is a promising procedure to improved patient with achalasia with a relatively low risk of complication and length of hospital stay.

## eP67 NONINVASIVE MARKERS PREDICTING THE PRESENCE OF SIGNIFICANT OESOPHAGEAL VARICES IN CIRRHOTIC PATIENTS

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DOI 10.1055/s-0040-1704834

**Aims** According to the recommendations of Baveno VI, screening for oesophageal varices (OV) is recommended in patients with thrombocytopenia less than

150 000 elements/ $\text{mm}^3$  and/or an elasticity greater than 20 Kpa in the fibroscan. The purpose of our study was to determine noninvasive markers associated with the presence of significant VO (grade 2 or 3) at the time of diagnosis of cirrhosis

**Methods** This is a retrospective study that collects all cirrhotic patients diagnosed between January 2016 and October 2019.

**Results** There were 57 patients, 26 men (45.6%) and 31 women (54.4%) with a mean age of 56.6 years (between 18 and 83 years). The viral etiology was the most common: viral B in 17 cases (29.8%) and viral C in 12 cases (21.1%). The other etiologies were nonalcoholic steatohepatitis (7 cases), chronic ethylism (4 cases), primary biliary cholangitis (4 cases), autoimmune hepatitis (2 cases) and vascular origin (3 cases). Cirrhosis was cryptogenic in 9 cases. 37 patients (65%) had grade 2 or 3 OV at the time of diagnosis. Advanced age ( $p = 0.03$ ), thrombocytopenia ( $p = 0.001$ ), leukopenia ( $p = 0.045$ ), and superficial or deep collateral venous circulation ( $p = 0.01$ ) were associated with the presence of grade 2 or 3 OV. However, the hemoglobin level ( $p = 0.853$ ), albumin level ( $p = 0.973$ ), splenomegaly size ( $p = 0.107$ ) and portal trunk diameter ( $p = 0.224$ ) were not significant between patients with grade 2 or 3 OV and other patients. Also, the stage of cirrhosis evaluated by the CHILD score ( $p = 0.217$ ) and the MELD score ( $p = 0.454$ ) did not correlate with the presence of significant OV.

**Conclusions** In our series, predictive factors for the presence of significant oesophageal varices were: advanced age, thrombocytopenia, leukopenia and the presence of collateral venous circulation.

## eP68 CORRELATION BETWEEN THE SIZE OF OESOPHAGEAL VARICES AND THE APRI SCORE

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DOI 10.1055/s-0040-1704835

**Aims** The objective of our study is to show the correlation between the size of oesophageal varices (OV) and the APRI score

**Methods** This is a retrospective analytical study extended between January 2014 and July 2019, including all patients with liver disease who have been admitted for esophageal varices screening or hemorrhagic decompensation. We excluded patients under ligation protocol. The correlation study between esophageal varices size and APRI score was performed according to the binary regression

**Results** During the study period, we collected 235 patients. The average age was  $50.17 \pm 17.7$  years. The sex ratio (F/H) was 1.04. More than half of our patients were known and followed for cirrhosis: 48% were carriers of viral hepatitis B/C. Endoscopy was performed for esophageal varices screening in 57.4% and urgently for hemorrhagic decompensation in 42.6%. The average of APRI score was 1.72 [0.08; 11.79]. It was less than 0.5 in 42.6% and superior to 1.5 in 23%. Oesophageal varices were present in 65.5% of whom 12% were stage III. The average of APRI score in this population was 2.08 [0.28; 9.45]. We found a positive correlation between oesophageal varices size and APRI score ( $r = + 0.43$   $p < 0.01$ )

**Conclusions** There is a positive correlation between the size of oesophageal varices and the APRI score: the higher the APRI score, the more the oesophageal varices size increases

## eP69 PREDICTORS OF POOR RESPONSE TO ENDOSCOPIC DILATION DURING ACHALASIA

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DOI 10.1055/s-0040-1704836

**Aims** The purpose of this work is to identify predictive factors for poor response to endoscopic dilatation during achalasia.

**Methods** This is a retrospective study between January 2009 and March 2019, including all patients with achalasia whose diagnosis was retained on a set of clinical arguments, endoscopic, manometric. Endoscopic dilatation was performed with pneumatic balloons. The effectiveness of the treatment was judged on the Eckart Score. The poor response to dilatation was defined by the lack of improvement after a maximum of 5 dilations

**Results** During the study period, 178 patients were collected for achalasia. The average age was  $46 \pm 14.5$  years old. The sex ratio (H/F) was 1.17. The main symptom was dysphagia in 100% followed by regurgitation in 56.4% (N 97) and weight loss in 54.5% (N 94). The average Eckart score before treatment was  $6.7 \pm 1.2$ . Endoscopy was performed in all patients and showed salivary and food stasis in 68.6%. Standard manometry was performed in 84.9% and showed hyperkinesia of the proximal and distal esophagus in 16.2%, a high rest pressure of the lower sphincter of the esophagus in 73.3%. Endoscopic balloon dilatation was proposed in 97.6% while the peroral endoscopic myotomy (POEM) was performed in 2.3% (N = 4). The average number of dilations was  $1.62 \pm 0.9$ . Eckart score after treatment was  $2.4 \pm 1.8$ . The poor response to dilatation was objectified in 16.8% (N = 28) including 11 patients who have been operated on. Predictors of poor response to endoscopic dilatation were age  $\leq 35$  years ( $p < 0.001$ , OR = 13), gender ( $p = 0.04$ , OR = 0.4), esophageal hyperkinesia ( $p < 0.001$  OR = 0.34).

**Conclusions** Our work confirms the data from the literature. Thus, the presence of factors of poor response to endoscopic dilatation must be considered in the therapeutic arsenal

## eP70 THE PREVALENCE OF PATHOLOGICAL ACID REFLUX AND ASSOCIATED SEQUELAE FOLLOWING PER-ORAL ENDOSCOPIC MYOTOMY: A SINGLE CENTRE EXPERIENCE

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DOI 10.1055/s-0040-1704837

**Aims** Per-oral Endoscopic Myotomy (POEM) is an effective treatment for achalasia with outcomes comparable to Heller's myotomy. However, the development of pathological acid reflux and subsequent Barrett's oesophagus or malignancy is a subject of controversy. This study aims to determine the prevalence of acid reflux and associated sequelae following POEM for the treatment of achalasia.

**Methods** This was a retrospective study of 126 patients undergoing POEM as part of routine care between 2013-2019. Following POEM all patients were offered 24-hour pH testing and completed a reflux symptom questionnaire (GERD-HRQL) at 3-months. Surveillance gastroscopy was offered at 3-yearly intervals post POEM. The primary outcome measure was an abnormal total acid exposure time ( $>4.2\%$ ), presence of Barrett's oesophagus or oesophageal neoplasia following POEM.

**Results** 34.1% (43/126) of patients completed 24-hour pH studies. 25.6% (11/43) patients had an abnormal total acid exposure time (AET) and elevated De Meester score ( $>14.72$ ). There was no significant difference in age ( $p=0.28$ ), disease duration ( $p=0.43$ ), baseline Eckardt score ( $p=0.90$ ) or length of myotomy ( $p=0.25$ ) between patients with a normal and abnormal AET. The majority (77.8%) of cases with an abnormal AET had little to no symptoms of acid reflux (GERD-HRQL score: 0-3). On post POEM surveillance gastroscopy 20.0% (4/20) of cases had evidence of reflux oesophagitis, including 1 case with normal AET on prior 24-hour pH testing. There were no cases of Barrett's oesophagus or malignancy.

**Conclusions** This study established the prevalence of acid reflux on pH testing and surveillance gastroscopy following POEM was lower than suggested by

prior studies. Surveillance gastroscopy and pH studies are advocated as part of routine care given many patients may be asymptomatic despite having physiological evidence of pathological acid reflux.

## eP70\_1 ENDOSCOPIC MANIPULATION INDUCES MINIMAL BUT REAL CHANGE OF Z-LINE APPEARANCE DURING ROUTINE ESOPHAGOGASTRODUODENOSCOPY

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DOI 10.1055/s-0040-1704838

**Aims** We aimed to investigate the effect of endoscopic manipulation during esophagogastroduodenoscopy (EGD) on EGJ appearance and analyze whether this leads to significant changes on the grading of Los Angeles (LA) classification including minimal change.

**Methods** A total of 367 subjects were enrolled in this prospective observational study. Still images of EGJ were captured during insertion and withdrawal phase of EGD. All the image sets of EGJ were mixed randomly, and graded by two independent endoscopists. Grades of LA classification were compared between insertion and withdrawal phase.

**Results** LA classification was changed in 49 subjects (13.8%). Grades rated during withdrawal phase after full EGD evaluation were upgraded significantly compared with grades rated during insertion ( $p < 0.0001$ ). Age, belching and retching were significantly associated with LA classification change.

**Conclusions** EGJ appearance is affected by endoscopic manipulation during EGD. We suggest evaluating EGJ during insertion before evaluating distal part, especially in the study of minimal or microscopic change of EG junction.

Thursday, April 23, 2020

Stomach and small intestine

09:00 – 17:00

ePoster area

## eP71 IS THERE A CORRELATION BETWEEN THE ENDOSCOPIC APPEARANCE AND THE HISTOLOGICAL FINDINGS DURING ADULT CELIAC DISEASE?

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DOI 10.1055/s-0040-1704839

**Aims** Celiac disease is an intolerance to gluten characterized histologically by villous atrophy that can be seen in the bulb and duodenum. Nevertheless an endoscopically healthy duodenum does not eliminate the disease, hence the interest of our study which is to study the correlation between the endoscopic abnormalities and the severity of villous atrophy.

**Methods** This is a retrospective study including celiac patients who have both endoscopic and histological evaluation. The different endoscopic aspects of celiac disease have been investigated in the bulb and duodenum. Patients are then stratified according to the simplified Marsh classification in 3 groups: Partial villous atrophy (IIa), subtotal villous atrophy (IIb) and total villous atrophy (IIc). The study and statistical analysis was done using SPSS software.

**Results** A total of 235 patients met the inclusion criteria, including 183 women (77.9%) and 52 men (22.1%). The average age is  $32.97 \pm 12.36$ . The endoscopic aspects found are: normal (46.8%), sawtooth appearance (11.5%), rarefaction of duodenal folds (21.7%), edematous duodenal folds (8.5%), nodular appearance (7.2%) and a bulbite ulcerative 2.6%. On histology the abnormalities found are: (IIc): 49.8%, (IIb): 33.2%, (IIa): 14.9%, Isolated intraepithelial lymphocytosis without atrophy: 2.1%. In our study, a very weak agreement was observed between the existence of endoscopic abnormalities and villous atrophy ( $\text{Kappa} = 0.048$ ). The study of the diagnostic value of fibroscopy in the diagnosis of histological atrophy found a sensitivity of 54.3% and a specificity of 100%. The VPP i.e.

The probability of a subject having atrophy when the appearance of the duodenal mucosa is pathological is 100%. The VPN i.e. The probability that a subject will not have atrophy when the appearance is not pathological is 4.5%.

**Conclusions** Our study shows a poor correlation between the existence of endoscopic abnormality and severe lesions in histology. This last is the gold standard in celiac disease and remains indispensable whatever the endoscopic aspect.

## eP72 UPPER GASTROINTESTINAL TRACT ASSOCIATED LESIONS IN PATIENTS WITH NEWLY DIAGNOSED CELIAC DISEASE

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DOI 10.1055/s-0040-1704840

**Aims** Celiac disease (CD) in adults is currently diagnosed by CD-specific serology and upper gastrointestinal endoscopy (UGIE) with duodenal biopsy samples. In the last years there's been a growing interest towards a non-biopic diagnostic strategy, especially in children but in adults also. In this setting, when the usefulness of endoscopy for CD diagnosis is being questioned, we aimed to see if there are associated lesions detected during endoscopy which could support the indication of UGIE in these patients.

**Methods** We recruited all newly diagnosed CD cases during a period of 6 years, according to currently available guidelines. All patients underwent UGIE with multiple duodenal biopsies and were tested for CD-specific serology. Demographic and clinical data were collected from the charts and the endoscopy reports were reevaluated for associated lesions.

**Results** Altogether 74 patients were recruited, 75.7% female with a mean age of 40 ± 10.7 years. About two thirds (64.9%) had typical presentation, while the other one third were atypical forms (18.9%) or screen-detected (16.2%). 9 out of the 74 patients (12.2%) had an associated autoimmune disease (type 1 diabetes mellitus or autoimmune thyroid disease).

Among the study cohort, associated lesions were detected in 56.8% of patients, as follows: esophageal (esophagitis, esophageal candidiasis) - 2.4%, gastric (hiatal hernia, gastritis, gastric ulcer, submucosal tumor) - 88.1%, and 9.5 % presented combined lesions; none of the patients had other endoscopic changes in the duodenum except CD-related findings. Regarding *Helicobacter pylori* status, 51 out of 74 were tested - 82.4% using rapid urease testing and 17.6% using fecal antigen test and 37% of them were positive.

**Conclusions** A significant proportion of newly diagnosed CD patients have associated lesions during the index UGIE. Our results support the use of UGIE in the diagnostic protocol of adult CD, which might change management (further tests, treatment prescriptions) in these patients.

## eP73V RETROGRADED ENTEROCLYSIS BY DOUBLE BALLOON ASSISTED ENTEROSCOPY IN A PATIENT WITH BLUNT ABDOMINAL TRAUMA: SMALL BOWEL STRICTURE, INTRALUMINAL VASCULAR LESION AND CROHN'S DISEASE

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DOI 10.1055/s-0040-1704841

A 40-year-old man presented with abdominal pain and diarrhea without fever two months later blunt abdominal trauma.

CT-angiography showed a pseudoaneurysm in proximal ileum and thickened and rigids small bowel loops.

Anal-double-balloon-enteroscopy (3,2mm) revealed an ulcerated stricture approximately 40cm of ileocecal valve, taking biopsies. The endoscope could't be passed beyond that point, so hydrosoluble contrast media and carbon dioxide were administered through enteroscopy showing 5cm stenotic loop and distal pedunculated polyp. The histopathology report of biopsies showed aspecific ileitis. Laparoscopically assisted resection of ileum stricture was performed with primary anastomosis. The histopathological diagnosis was Crohn's disease and pedunculated cavernous hemangioma.

## eP74V GASTRIC HETEROTOPIA: A RARE SMALL BOWEL FINDING TREATED ENDOSCOPICALLY WITH DOUBLE-BALLOON ENTEROSCOPY (DBE) (WITH VIDEO)

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DOI 10.1055/s-0040-1704842

Heterotopic gastric mucosa (HGM) is a rare entity that can occur anywhere in the gastrointestinal tract; its exact genesis remains unclear. While HGM is usually asymptomatic, it can occasionally cause bleeding, obstruction and perforation.

A 31-year-old woman presented with episodic cramping abdominal pain. A small bowel capsule endoscopy revealed a large lesion within the proximal small bowel. During antegrade double-balloon enteroscopy a 60mm sessile polypoid lesion was identified, at the jejunum.

Wide-field endoscopic-mucosal-resection was performed. Histology revealed gastric-type mucosa with mixed mucinous and specialised glands. Reactive changes with foveolar-hyperplasia and reactive nuclear features were seen and HGM diagnosis was made.

## eP75V SALINE-IMMERSION THERAPEUTIC ENDOSCOPY (SITE) COMBINED WITH ENDOSCOPIC SUBMUCOSAL DISSECTION (ESD) OF A RARE CAUSE OF INTUSSUSCEPTION: A GIANT BRUNNER GLAND ADENOMA

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DOI 10.1055/s-0040-1704843

A 48-year-old woman presented with abdominal pain. An 80mm pedunculated lesion was identified, arising from the duodenal-site of the pyloric-ring and prolapsing into D3. The scope was retroflexed in the bulb to ensure direct visualisation of the stalk and saline-immersion-therapeutic-endoscopy(SITE) facilitated endoscopic-submucosal-dissection(ESD) was performed.

Histopathological analysis revealed a giant 60\*34\*24mm Brunner-gland-adenoma(BGA) without any evidence of dysplasia/malignancy.

BGAs are rare benign duodenal-tumors proliferating from normal Brunner-glands. BGAs represent about 5-10% of benign duodenal-tumours and have an estimated incidence of < 0.01%.

Consensus for optimal management of BGA is lacking. Careful endoscopic resection appears to be effective, minimally-invasive and safe even for giant lesions.

### eP76 EFFICACY OF HEMOSTATIC POWDERS IN THE TREATMENT OF GASTROINTESTINAL BLEEDING RELATED TO NEOPLASTIC OR NON-NEOPLASTIC LESIONS

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DOI 10.1055/s-0040-1704844

**Aims** EndoClot System and Hemospray are two hemostatic powders (HPs) recently introduced in the treatment of gastrointestinal bleeding (GIB). Aim of the study was to evaluate the efficacy and safety of HPs in the management of GIB.

**Methods** From September 2017 to September 2019, all patients with lesions actively bleeding not responding or not amenable to be managed with standard procedures of hemostasis (local adrenaline infiltration, argon plasma coagulation or electrohemostasis, mechanical with clips) were treated with HP. Hemostasis achieved with HP was defined as *immediate* (no bleeding up to end of the procedure), *stable* (no rebleeding within the 72 hours after the procedure), or *definitive* (no more episodes of bleeding till the discharge).

**Results** HPs were used in 37 patients (25 males; median age: 69.5 years, range: 32-89) with GIB due to chemotherapy-related mucosal damage or graft versus host disease (2 patients, both with extensive mucosal denudation in the esophagus); ulcer in the stomach (3 patients), in the duodenum (6 patients), and in the gastric anastomosis (5 patients); inoperable malignancy infiltrating the wall of the stomach (11 patients), duodenum (4 patients), or colon/rectum (2 patients); post-endoscopy procedures (sphincterotomy in 2 patients and endoscopic submucosal dissection in the rectum in 1 patient), colonic vascular malformation (1 patient). 27/37 (73%) were at first episode of GIB while 10 had already been submitted to an endoscopic hemostatic procedure for GIB. HPs achieved immediate hemostasis in 35/37 patients (95%), stable hemostasis in 26 patients (70%) and definitive hemostasis in 22 patients (59%). No adverse events occurred.

**Conclusions** The HPs are effective for stopping GIB related to different kinds of neoplastic and not neoplastic lesions, not responding or not amenable to be treated with standard hemostatic techniques.

### eP77 ANALYSIS OF ATYPICAL SCAR PATTERNS AFTER GASTRIC ENDOSCOPIC SUBMUCOSAL DISSECTION

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DOI 10.1055/s-0040-1704845

**Aims** Endoscopic submucosal dissection (ESD) for gastric neoplasms is a widely performed procedure. While incidences of local recurrence are rare, various post-ESD scars are encountered during follow-up endoscopy. Therefore, we investigated atypical scar patterns and evaluated the factors associated with such a condition.

**Methods** Clinicopathologic and endoscopic reviews of gastric neoplasms treated with ESD between January 2009 and December 2015 were conducted. Atypical scar patterns were classified as irregular erythema, nodularity, or mucosal defect.

**Results** Two hundred and seventy-four gastric neoplasms, including 201 adenomas and 73 early gastric cancers, were enrolled. Irregular erythema pattern was associated with male sex (P=0.018), and nodularity pattern was associated with smoking (P=0.006). Mucosal defect pattern was associated with infra-angle location (angle and antrum) (P=0.008) and cancer (P=0.001). Additionally, irregular erythema with nodularity pattern was associated with male sex (P=0.030), and irregular erythema with nodularity and mucosal defect pattern was associated with liver disease and chronic kidney disease (P=0.015 and P=0.011, respectively).

**Conclusions** Distinct clinical factors had an influence on atypical scar formation after gastric ESD.

### eP78 UPPER GASTROINTESTINAL BLEEDING IN PATIENTS WITH CIRRHOSIS: BEYOND VARICEAL BLEEDING

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DOI 10.1055/s-0040-1704846

**Aims** We aimed to investigate reasons for acute upper gastrointestinal bleeding (AUGIB) as well as to compare predictors and outcomes between portal (PH) and non-portal hypertension (NPH) related AUGIB in patients with cirrhosis.

**Methods** All cirrhosis patients presenting with AUGIB during a 7-year period (2012-2019) in a European tertiary care centre were retrospectively enrolled. Demographic, clinical, laboratory, and endoscopy data were retrieved from medical records.

**Results** A total of 357 cirrhotic patients were hospitalised during the study period. Overall, 56 (16%) patients experienced 66 AUGIB episodes (25% female; alcoholic cirrhosis 57%; Child class A/B/C: 21%/60%/15%). The recorded AUGIB was the first bleeding episode in 62%, the majority presenting with melena (70%). In all, 44 episodes were related to PH, 12 to NPH, and 4 to both. In 7 episodes no AUGIB source was identified. Six-week survival following AUGIB was dismal for Child C vs. other Child classes (log-rank test p=0.049) and when rebleeding occurred vs. no-rebleeding (log-rank test p=0.021). Survival following PH-AUGIB vs. NPH-AUGIB did not differ significantly (p>0.05). The recorded AUGIB episode was the reason of initial decompensation for 9 patients with PH (20%) and 2 with NPH-AUGIB (16%, p>0.05). Among PH-AUGIB patients, band ligation was performed in 68%, histoacryl injection (fundic varices) in 14%, and no endotherapy in 18%. Among NPH-AUGIB patients, 17% were treated with adrenaline injection and hemoclips, 8% with adrenaline only; in 75% no endotherapy was undertaken. Rebleeding occurred in 7% in the PH vs. 0% in the NPH group (p>0.05). Rescue therapy with TIPS vs. interventional radiology/surgery was done in 2% vs. 0% respectively (p>0.05).

**Conclusions** PH related bleeding is the most common cause of AUGIB in cirrhotics with varices being the dominant source. About one-fifth of cirrhotics bleed from non-PH sources (mainly peptic ulcer disease) which may be their first decompensating event. Patient outcome is similar in PH and non-PH bleeding.

### eP79V RECURRENT UPPER GASTROINTESTINAL ULCER BLEEDING TREATED BY COILS EMBOLIZATION GUIDED BY ENDOSCOPIC ULTRASONOGRAPHY (EUS)

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DOI 10.1055/s-0040-1704847

We report two clinical cases of EUS-guided coils embolization in upper gastrointestinal bleeding due to peptic ulcer.

- 45 years-old man with UGIB. Urgent gastroscopy shows a duodenal ulcer. First treatment option failed and EUS was performed identifying a 2.5 mm arterial visible vessel. Through a 22G needle is embolized with a 0.018" Tornado coil.

- 77 years-old man with UGIB. Urgent gastroscopy shows a penetrated duodenal ulcer. EUS is performed identifying a 4 mm which was embolized with coil Tornado 0.018" through 22 G needle.

EUS-guided coils embolization may be useful in cases of recurrent HDA with conventional treatment.

## eP80 ACCURACY OF CAPSULE ENDOSCOPY IN THE DIAGNOSIS OF GASTROINTESTINAL GRAFT-VERSUS-HOST-DISEASE

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**DOI** 10.1055/s-0040-1704848

**Aims** Graft-versus-host disease (GVHD) is a common complication of hematopoietic cell transplantation. It can involve the skin, lungs, liver and gastrointestinal (GI) tract. The small bowel is one of the principal targets in the GI tract. The capsule endoscopy (CE) is a safe procedure and can be a useful tool for a quicker diagnosis in GI GVHD. The aim of this study is to compare the accuracy of the CE in GVHD with the histopathological findings.

**Methods** This is a retrospective single-center study that included all the patients with GVHD who underwent CE between July 2015 and July 2019. All the patients had EGD and colonoscopy with biopsies (stomach, duodenum, terminal ileum, cecum, ascending, transverse, descending and rectosigmoid). The CE findings were analyzed and compared with the histopathological diagnosis as the gold standard.

**Results** There were included 21 patients [7 (33%) female; 37 (±11.9) years old] with GVHD, 20 (95%) of them were acute. The median gastric transit time was 55 minutes (20-113) and median small bowel transit time was 261 minutes (238-434). Complete visualization of the small bowel by CE was observed in 17 cases (80.95%). Histopathological and CE findings diagnose GVHD in 17 and 16 cases respectively. The agreement between histopathological and CE findings were identified in 18 cases (15 positive and 3 negative to GVHD). The Kappa coefficient was 0.57. The CE's sensibility, specificity, positive predictive value (PPV) and negative predictive value (NPV) were of 88%, 75%, 94% and 60%, respectively. There were no complications associated to CE.

**Conclusions** CE is a safe procedure for diagnosis of gastrointestinal GVHD with a high sensibility and PPV and a moderate concordance compared to histopathological findings.

## eP81 DISCRIMINATING FACTORS FOR GASTRIC NEOPLASM AMONG REGENERATIVE ATYPIA FOUND IN SCREENING UPPER GASTROINTESTINAL ENDOSCOPY

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**DOI** 10.1055/s-0040-1704849

**Aims** In screening endoscopy, biopsies for suspicious malignant lesions often show a diagnosis of regenerative atypia which makes it difficult to make clinical decisions because of ambiguous pathologic characteristics. Therefore we performed analysis to find discriminating factors for true gastric neoplasms among regenerative atypia found in screening endoscopy.

**Methods** We reviewed medical records and endoscopic findings of individuals with regenerative atypia found in forcep biopsies performed in screening upper gastrointestinal endoscopy between October 2003 and December 2017.

**Results** A total of 577 individuals had follow-up endoscopic biopsy for regenerative atypia. Among them, 11 were found to have adenoma (1.9%), 20 early gastric cancer (3.5%), and 1 MALT lymphoma (0.2%). There was no one with advanced gastric cancer. Most of the lesions were small erosions (n = 424, 73.5%). In multivariable analysis, whitish discoloration (OR, 5.084; 95% CI, 1.109 - 23.310, p = 0.036) and age (OR, 1.080; 95% CI, 1.040 - 1.122; p < 0.001) were found to be independent risk factors for neoplasm, while ulcer scar (OR, 0.282; 95% CI, 0.025-3.228, p = 0.309), spontaneous bleeding (OR, 0.491; 95% CI, 0.154-1.564, p = 0.229), surface nodularity (OR, 1.285; 95% CI, 0.501 - 3.295, p = 0.602), and *H. pylori* infection (OR, 2.966; 95% CI, 0.985 - 8.928, p = 0.053) were not.

**Conclusions** Short-term follow-up and repeated endoscopic biopsy should be considered for lesions with regenerative atypia found in screening endoscopy, especially among elderly having lesions with whitish discoloration. Also immunostaining should be considered for such lesions.

## eP82 ULCER WITH ADHERENT CLOT: TAKE OFF OR RESPECT?

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**DOI** 10.1055/s-0040-1704850

**Aims** For the adherent clot ulcers (IIb), the endoscopist has the choice between the detachment or the respect of the clot. The aim of this work is to compare the two therapeutic attitudes while insisting on the recurrence and mortality.

**Methods** A retrospective study conducted between January 2001 and May 2019, including the 138 cases of gastrointestinal bleeding secondary to a peptic ulcer with adherent clot, who were divided to 2 groups: The first group (n=59), in whom the clot was taken off, and the second group (n=79) in whom the clot was respected.

**Results** Nineteen patients (13.8%) were admitted with a hemorrhagic shock. In the first group, 36 patients (26%) received endoscopic treatment while 23 were undergone surgery given the difficulty of endoscopic treatment. Among these patients, three patients (5%) recidivated: a patient has received a second endoscopic treatment, one died from an hemorrhagic shock and the third was operated and died postoperatively.

In the 2nd group, hemorrhagic recurrence was observed in 15 cases (19%): 3 patients died from hemorrhagic shock, 3 patients have undergone endoscopic treatment, 5 patients were operated while endoscopy were redone in the remaining 4 patients did not show stigmata of bleeding (3 cases of stage IIc ulcer and a case of stage III ulcer). Within this group, there were 7 deaths (8.8%) in total: 2 patients died postoperatively, 2 cases of recurrence after endoscopic treatment performed. \*Among the clinical, biological and endoscopic variables studied, an ulcer size exceeding 2 cm (p = 0.013) and the respect of the adherent clot (p = 0.019) are the 2 factors associated with the occurrence of hemorrhagic recurrence.

**Conclusions** Our study shows that endoscopic treatment is more effective and has a better prognosis than just the medical treatment in the management of adherent clot ulcers especially in ulcers larger than 2cm.

## eP83 HISTOLOGICAL ASPECTS OF NODULAR GASTROPATHY

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DOI 10.1055/s-0040-1704851

**Aims** The responsibility of *Helicobacter pylori* (HP) in the genesis of peptic ulcer, MALT lymphoma and gastric adenocarcinoma is well established at present. HP gastritis is most often manifested by nodular gastropathy. However, is there any correlation between this endoscopic aspect on the one hand, the presence of HP, the degree of histological activity, the presence of gastric atrophy and intestinal metaplasia on the other hand?

**Methods** This is a retrospective study including 105 patients who had an upper gastrointestinal endoscopy (UGE) with antro-fundic biopsies in search of HP, between June 2018 and June 2019. The histological examination indicated the study of the activity of gastritis, the presence of gastric atrophy and intestinal metaplasia.

**Results** It consists of 105 patients divided into 63 women (60%) and 42 men (40%), with a mean age of 45.1 years (between 16 and 79 years). The indications for UGE were epigastric pain (n = 75, 71%), iron deficiency anemia (n = 20, 19%), dyspepsia (n = 4), chronic diarrhea (n = 4), and dysphagia (n = 2). Nodular gastropathy was found in 20 patients (19%) of whom 18 patients (90%) had HP gastritis versus 54 patients (64%) in patients without nodular gastropathy (p = 0.022). HP gastritis was active in all patients with nodular gastropathy. This activity was mild, moderate and severe in 4, 12 and 2 cases respectively. However, there was no correlation between nodular gastropathy and the presence of antro-fundic atrophy or intestinal metaplasia.

**Conclusions** In our series HP gastritis was present in 90% of patients with nodular gastropathy with a clear correlation with the degree of histological activity.

## eP84 HYPERTENSIVE GASTROPATHY IN CIRRHOTIC PATIENTS: PREVALENCE AND PROGNOSTIC IMPACT

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**Aims** Esophageal (OV) and gastric (GV) varices are the most described endoscopic signs of portal hypertension (PHT) in cirrhotic patients. However, hypertensive gastropathy (HTG) is a cause of digestive hemorrhage by PHT often neglected and poorly studied.

The aim of our work is to clarify the prevalence of HTG and to study its impact on the course of cirrhosis.

**Methods** Retrospective study collecting cirrhotic patients followed in the gastroenterology department of Farhat Hached hospital for 4 years

**Results** A total of 71 patients were enrolled with a mean age of 62 years (range: 25-83). The viral cause of cirrhosis was the most common (40.8%). The prevalence of HTG was 56.3% (mild and moderate to severe in 29.5% and 26.8% of cases, respectively). VO were present in 87.73% of which 71.8% were grade II-III and VG in 11.2% of cases. Of the 13 (18.3%) patients who had gastrointestinal hemorrhage, this was attributed to HTG in 2 cases (2.8%). Patients with moderate and/or severe GHP had thrombocytopenia < 100,000 el/mm<sup>3</sup> in 14 cases (73.7%, p = 0.018) and a Child-Pugh C score significantly more frequent (47.3% versus 23.07%, p = 0.04). The presence of moderate to severe HTG is associated with the occurrence of refractory ascites, hyponatremia in the decompensated cirrhotic and ascites fluid infection with a significant difference (respectively: p= 0.02, p= 0, 05, p = 0.02). There was no significant difference regarding sex, etiology of cirrhosis or the presence of thrombosis.

**Conclusions** In our study, the prevalence of HTG was 56.3%. Moderate to severe HTG was associated with advanced Child-Pugh, thrombocytopenia < 100,000 el/mm<sup>3</sup>, refractory ascites and infection of ascites fluid. This suggests a prognostic role of HTG.

## eP85 SIMETHICONE CLEARS THE WAY FOR CAPSULES

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DOI 10.1055/s-0040-1704853

**Aims** Capsule endoscopy is a useful test for small bowel (SB) disease. Image quality as with all endoscopic tests can vary; Simethicone has been recommended to improve image quality by the ESGE but is not routinely used in our practice.

To assess the impact of Simethicone addition on capsule quality

**Methods** A prospective uncontrolled pilot study. Consecutive patients were given 100mg of Simethicone (Wind-Eze) over 2 months in accordance with ESGE recommendations. Cases were compared to matched controls from our capsule endoscopy (CE) database. Outcome measures were reported image quality, completion rates and diagnostic yield. Groups were compared using Chi-<sup>2</sup> test, P< 0.05 was considered significant.

**Results** 96 capsules were reviewed, 32 cases and 64 controls. The mean age was 52yrs (range 18-86) and 42 (44%) were males. Indications were Iron Deficiency Anaemia (IDA) 40% (n=38), Crohn's disease (CD) 35% (n=34) and others 25% (n=24); there was no difference between groups P=0.9. Image quality did not differ between cases and controls being good/excellent in 11/32 (34%) vs 23/64 (36%) respectively, P=0.5. Diagnostic yield was also similar between groups, 16/32 (50%) vs 36/64 (56%). However, completion rates were higher in the Simethicone group, 59/64 (92%) vs 100%, P=0.03. Of note, there were no reported side effects.

**Conclusions** Similar to international results, Simethicone did not improve overall diagnostic yield. Unlike previous studies we found no improvement in image quality. However, the improved completion rates possibly due to less friction and air pockets; thus improving transit warrants further investigation.

## eP86 CC-CLEAR (COLON CAPSULE CLEANSING ASSESSMENT AND REPORT): A NEW APPROACH TO EVALUATE THE QUALITY OF BOWEL PREPARATION IN THE CAPSULE COLONOSCOPY

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DOI 10.1055/s-0040-1704854

**Aims** An adequate colon cleansing is paramount to rely on colon capsule reported findings. Thus, we should strive for high intra and inter observer agreement for the evaluation of colon cleansing. The commonly used colon capsule cleansing grading scales rely on subjective parameters and lack proper interobserver agreement. We aim to validate a new grading scale for the evaluation of colon capsule cleansing.

**Methods** For the new grading scale (CC-CLEAR), the colon was divided by a single reader in 3 segments: right, transverse and left colon. Each segment was classified according to an estimation of the percentage of mucosa clearly visualized (0: less than 50%; 1: from 50 to 75%; 2: more than 75% and 3: more than 90%). The overall cleansing classification was a sum of each segment scores, grading between inappropriate (0 to 5 points); good (5 to 7 points) and excellent (8-9 points). If any segment presented a classification of 1 or less the overall classification given was considered inappropriate independently of the overall score punctuation. Videos were read and scored using the CC-CLEAR and the Leighton grading scale, by two independent experienced operators, blinded to each other evaluation. Kendall's coefficient evaluated inter and intra observer agreement.

**Results** We included 58 consecutive colon capsules, 75.9% female and mean age 65 years. The overall cleansing CC-CLEAR classifications were as follows: rater number one considered 13 excellent, 18 good, 27 inappropriate and rater number 2 considered 14 excellent, 13 good, 31 inappropriate. The interobserver agreement of CC-CLEAR was superior to the Leighton scale, Kendall's W 0.911,  $p < 0.01$  vs 0.806,  $p < 0.01$ . The intraobserver agreement for CC-CLEAR was excellent, Kendall's W 0.939,  $p < 0.01$ .

**Conclusions** CC-CLEAR is a new grading scale for the evaluation of bowel preparation quality in capsule colonoscopy, with excellent inter and intra observer agreement.

## eP87 PREDICTING AN INAPPROPRIATE COLON CAPSULE CLEANSING: A STUDY APPROACHING PREDICTIVE FACTORS

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**DOI** 10.1055/s-0040-1704855

**Aims** An adequate colon cleansing is paramount to rely on colon capsule reported findings. To optimize the rate of adequate cleansing it may be important to identify risk factors that can predict a sub-optimal colon preparation. Being able to properly categorize the patients at major risk, will allow to select the subgroup in most need of enhanced cleansing protocols. We aim to define predictive factors for inappropriate bowel preparation in colon capsule.

**Methods** Retrospective, single center, cohort study. Patients' demographics and data including endoscopic findings and quality of bowel preparation assessment were collected retrospectively from the medical records. A univariate analysis tested the association between covariables and the outcome, inappropriate cleansing. The statistically significant variables were included in multivariable logistic binary regression.

**Results** We included 83 consecutive colon capsules, from 2015 to 2019. Seventy-seven percent were female, with a mean age of 65 years. The main indication for initial colonoscopy was colorectal cancer screening (44%) followed by polyp surveillance (25,3%). The major reason for incomplete conventional colonoscopy was fixed angulation of the left colon (63%). Fifty percent of the colon capsules cleansing was graded as inappropriate. The variables colonic transit time, previous inappropriate preparation, impaired mobility, polimedication, chronic antidepressants, calcium channel blockers, chronic laxative drugs, obstipation and multiple comorbidities were statistically associated with an inappropriate cleansing ( $p < 0.05$ ). The variables previous inappropriate cleansing (OR 8.3;  $p = 0.032$ ), chronic laxative (OR 13;  $p=0.026$ ) and chronic antidepressant medication (OR 12;  $p = 0.018$ ), were independently associated with the outcome inappropriate cleansing.

**Conclusions** Previous inappropriate cleansing, chronic laxative and chronic antidepressant medication may increase the rate of inappropriate colon capsule cleansing up to 13-fold risk. These factors seem essential in the selection of patients for optimization of the colon cleansing protocol, aiming to diminish the rate of inappropriate colon capsule cleansing.

## eP88 CHARACTERISTICS OF PATIENTS WITH UPPER GASTROINTESTINAL BLEEDING WITH ANTI-COAGULATION AGENT; FOCUSING ON REBLEEDING

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**DOI** 10.1055/s-0040-1704856

**Aims** Acute upper gastrointestinal bleeding (UGIB) is a severe complication associated with oral anticoagulants. However, little is known about the risk factors of rebleeding among anticoagulant users with a history of UGIB. We aimed in this study to evaluate the risk factors of rebleeding after successful endoscopic hemostasis for UGI bleeding in patients taking oral anticoagulants

**Methods** Between July 2007 and July 2019, 68 patients with oral anticoagulants were hospitalized due to nonvariceal UGIB and followed up at a tertiary hospital. We retrospectively reviewed the clinical characteristics and compared them between patients with and without rebleeding.

**Results** The most common cause of UGIB was peptic ulcer in 46 patients (70.6%), followed by Dieulafoy's lesion in 4 patients (20%), Mallory-Weiss syndrome, Advanced gastric cancer(3 patients 15% respectively). Rebleeding after hemostasis occurred in 16 patients (23.5%). There was no 30-day mortality among patients with rebleeding. Univariate analysis revealed that duodenal location (43.8 vs. 17.3%,  $p=0.044$ ) and presence of major comorbidities (81.3 vs. 23.1%,  $p < 0.001$ ) were significantly more frequent in rebleeding group. By multivariate analysis, major comorbidities (odds ratio [OR] 43.8; 95% confidence interval [CI];  $p < 0.001$  5.1~378.0), duodenal location (OR 6.9; 95% CI;  $p=0.044$  1.1~45.8) and *Helicobacter pylori* infection (OR 7.2; 95% CI;  $p=0.046$  1.0~50.2) were significant risk factors for rebleeding.

**Conclusions** Despite of successful endoscopic hemostasis for UGIB, the rebleeding rate was considerable. Therefore, physicians need to be cautious about rebleeding if patients have a duodenal lesion, comorbidities or *Helicobacter pylori* infection

## eP89 ENDOSCOPIC HISTOACRYL INJECTION FOR HEMOSTASIS OF NON-VARICEAL BLEEDING IS SAFE AND EFFECTIVE MODALITY

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**DOI** 10.1055/s-0040-1704857

**Aims** Histoacryl is one of the materials that can be used as a sclerosing agent and is known to be effective in endoscopic hemostasis of acute gastric variceal bleeding. In addition, it can be applied to hemostasis of non-variceal GI bleeding with relatively simple manipulation and is also effective. However its effect has not clearly known in ulcer bleeding. We reviewed patients who had undergone treatment endoscopically with Histoacryl and assessed the effectiveness and side effects according to ulcer bleeding.

**Methods** We retrospectively reviewed 16 ulcer bleeding cases treated endoscopically with Histoacryl in Seoul Paik Hospital from August 2005 to May 2019. All cases were categorized by each disease. For the cases of bleeding, initial hemostasis rate and rebleeding rate within 7 days were evaluated. We reviewed the procedure records and post-procedure medical records to confirm the adverse effects.

**Results** Among 16 cases treated with Histoacryl, 13 were benign ulcers, 1 was AGC ulcer, 1 was GIST ulcer, 1 was post-ESD ulcer bleedings, and 12 were

gastric ulcers, 4 were duodenal ulcers. Initial hemostasis was obtained from all bleeding cases. The delayed bleeding rate within 7 days was 6.3% (only 1 case, AGC ulcer bleeding). No significant complication was observed, but 1 patient were expired within six months due to GIST perforation unrelated to this procedure.

**Conclusions** According to our data, Histoacryl treatment is relatively safe and has a high success rate of hemostasis for non-variceal GI bleeding. Therefore, it is considered to be a useful method for upper GI bleeding which is difficult to hemostasis.

### eP90 ENDOSCOPIC AND HISTOLOGICAL CHARACTERISTICS OF NEW GASTRIC FINDINGS THAT APPEARED WITH STRONG ACID SECRETION SUPPRESSOR (P-CAB)

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DOI 10.1055/s-0040-1704858

**Aims** There are several known gastric findings associated with the use of conventional proton pump inhibitors (PPIs). However, there are no reports of gastric findings associated with the use of potassium competitive acid blocker (P-CAB) a more potent gastric acid secretion suppressor. This time we found a new gastric finding associated with the use of P-CAB. This gastric finding is white granular findings with slight elevation similar the White Glove Appearance (WGA) which is known as a gastric finding characteristic of gastric cancer cases. Since we named this finding White Granule with Small Elevation (WGSE), we introduce the characteristics of this finding with endoscopic and histological analysis.

**Methods** The highest serum gastrin levels of our cases were 1750 pg/ml and 4500 pg/ml, those were markedly high level. Although hypergastrinemia occurs with continued PPI use too, no WGSE has been reported with PPI use. In other words, it is thought to be a gastric finding peculiar to continued use of P-CAB with severe hypergastrinemia.

**Results** The WGSE histological findings were so similar the WGA observed in gastric cancer cases. Its characteristic finding showed a cystic dilated duct with accumulated gastric secretions. In our cases, it could be detected WGSE under only continuous P-CAB use, not observed when using PPI. Therefore, we consider that WGSE is to be a specific change with continued use of P-CAB. Previous reports have said that WGA is sometimes observed in autoimmune gastritis (type A gastritis) with hypergastrinemia, so we have been believed that hypergastrinemia due to strong gastric acid suppression is the most important cause of WGSE.

**Conclusions** When using P-CAB, it is necessary to pay attention to the appearance of WGSE; a new gastric finding that was especially apparent when using P-CAB. WGSE is considered to be an important new finding suggesting marked hypergastrinemia.

### eP91 ANALYSIS OF GENE MUTATION IN EARLY SPORADIC DIFFUSE-TYPE GASTRIC CANCER BASED ON *HELICOBACTER PYLORI* INFECTION STATUS THROUGH WHOLE-EXOME SEQUENCING

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DOI 10.1055/s-0040-1704859

**Aims** *Helicobacter pylori* (HP) is the most important etiologic factor for gastric cancer, however, diffuse-type gastric cancer (DGC) occurs

independently of HP infection and its pathogenicity remains unclear. We aimed to identify more contributory mutations of the driver gene to DGC initiation through genome analysis in early DGC without HP infection. Furthermore, we aimed to discover differences in mutation between HP-uninfected and HP-infected early DGC.

**Methods** 26 early sporadic DGC samples resected endoscopically or surgically from 26 patients were enrolled, excluding the samples with germline mutation in CDH1, TP53, and ATM. We classified samples into 2 groups based on HP infection status determined with eradication history and endoscopic, pathological, and clinical findings. We conducted whole-exome sequencing analysis of 14 HP-uninfected and 12 HP-infected early DGC samples. Sequencing data of these two DGC groups were compared with each other.

**Results** There was no significant difference in number of mutation, number of chromosomal abnormality, substitution frequency of variants, or pattern of mutational signatures between HP-uninfected and HP-infected DGC. CDH1 was most highly recurrent mutation, which was detected in 10 out of 14 HP-uninfected DGCs (71.4%) and 7 out of 12 HP-infected DGCs (58.3%). There was no significant difference in somatic mutation frequency including CDH1 between HP-uninfected, HP-infected DGCs.

**Conclusions** CDH1 is most highly recurrent mutation in the patients with early DGC. HP-uninfected and infected early DGC do not differ in genome mutation analysis.

### eP92 CONTRIBUTION OF ENDOSCOPY IN THE EXPLORATION OF ANEMIA IN CIRRHOTIC PATIENTS

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DOI 10.1055/s-0040-1704860

**Aims** The occurrence of anemia during cirrhosis is common. Its prevalence varies from 40 to 70% according to the literature. The aim of this study was to determine the Contribution of endoscopy in the exploration of anemia in cirrhotic patients.

**Methods** This is a retrospective study that collects all cirrhotic patients over a period of 4 years in the gastroenterology department of Farhat Hached Sousse Hospital.

**Results** In total, 71 patients were collected with a mean age of 62 years (range: 25-83). The main etiology of cirrhosis was viral (40.8%). The severity of cirrhosis estimated according to the Child-Pugh score was: Child A in 32.5%, Child B in 38%, Child C in 29.5%. The average hemoglobin level was 9.9g/dl (range: 13.4-4.4g/dl). The prevalence of anemia in our patients was 77.5% (n=55). Among these patients, Upper gastrointestinal endoscopy reported esophageal varices grade I in 11.2%, VO grade II-III in 71.8%, gastric varices in 11.2%, hypertensive gastropathy in 56.3%, erosions in 29.5% and ulcer in 15.4% of cases.

A colonoscopy was completed in 5 patients with iron deficiency anemia without obvious cause in upper digestive endoscopy showing diverticulosis of the colon in 2 cases, and angiodysplasia lesions in 1 case. It was normal in 2 cases.

**Conclusions** Endoscopic digestive examinations are of great benefit in the investigation of anemia in cirrhotic patients by showing other lesions than signs of portal hypertension. such as ulcer and angiodysplasia.

## eP93 GENOTYPING OF HELICOBACTER PYLORI CAGA EPIYA MOTIF AS A RISK FACTOR OF GASTRIC LESIONS SEVERITY IN A MOROCCAN POPULATION

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DOI 10.1055/s-0040-1704861

**Aims** *Helicobacter pylori* (*H. pylori*) persistent infection lead to atrophic gastritis (AG) and intestinal metaplasia (IM) that can lead to gastric cancer (GC). The severity of the gastric lesions is related to genetic variability of *H. pylori* virulence factors. The *cagA* gene is one of the most studied virulence factors of *H. pylori* and its oncogenic potential is linked to its high polymorphic EPIYA motifs. The aim of this study was to evaluate the association of EPIYA motifs with the risk of AG and IM in a Moroccan population.

**Methods** A total of 210 patients suffering from gastric lesions (chronic gastritis, AG, and IM) was enrolled. *H. pylori* infection and the type of lesions were diagnosed by *ureC* PCR and histological examination, respectively. Detection of the *cagA* gene, as well as genotyping of EPIYA motifs were carried out by PCR.

**Results** The prevalence of *H. pylori* and *cagA* gene was 95% and 37%, respectively. *CagA*-positive strains were more associated with the risk of IM than AG. The EPIYA motifs detected were: EPIYA-ABC (58%), EPIYA-ABCC (22%), EPIYA-AB (20%). The EPIYA-ABCC motif increases the risk of IM (OR = 23, 95%CI = 1.99–273.29, p-value = 0.007), compared to AG (CI = 7, 95% CI = 0.56–86.32, p-value = 0.28).

**Conclusions** The EPIYA-ABCC motif might be a useful marker for the identification of patients at high risk of developing IM that can lead to GC.

## eP94 EPIDEMIOLOGY OF HELICOBACTER PYLORI FOR PATIENTS WITH GASTRIC DISEASES AND ASYMPTOMATIC POPULATION IN MOROCCO

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DOI 10.1055/s-0040-1704862

**Aims** *Helicobacter pylori* infection is recognized as a worldwide problem, mainly in developing countries where infection reaches 80% of the population. *H. pylori* is associated with various gastric diseases, mainly, many benign, pre-malignant, and malignant lesions of the gastric mucosa. The aim of our study was to determine the prevalence of *H. pylori* infection in asymptomatic population and gastric disease's patients.

**Methods** a total of 162 asymptomatic subjects collected from Casablanca blood transfusion, and 254 patients suffering from various gastric gastroenterology and oncology services of the Ibn Rochd University Hospital Center, were targeted lesions (chronic gastritis, atrophic gastritis, intestinal metaplasia, gastric cancer) collected from in this investigation. The typing of gastric lesions and *H. pylori* status were performed by Histological examination and ELISA test.

**Results** Our results showed a high prevalence of *H. pylori* infection in both populations Asymptomatic (92.6%) and gastric diseases patients: chronic gastritis (95%), atrophic gastritis (97%), intestinal metaplasia (100%) and gastric cancer (92%). We noticed that the worsening of gastric lesions related to *H. pylori* infection increases with age, and it was influenced by tobacco consumption and the living area.

**Conclusions** It is necessary to update the recommendations regarding diagnosis, treatment of *H. pylori* infection, and follow-up of the patients, to avoid the evolution of simple chronic gastritis to gastric cancer.

## eP95 AFFERENT LIMB VOLVULUS POST IPAA

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DOI 10.1055/s-0040-1704863

**Aims** Patients operated with total colectomy and ileal pouch anal anastomosis (IPAA) for refractory ulcerative colitis often present with episodes of small bowel obstruction after different period of time post surgically. We present two cases of patients presented with afferent limb obstruction of the pouch.

**Methods** The first patient is a pregnant female with episodes of intermittent ileal obstruction since the 25<sup>th</sup> week of gestation. Initially she was faced with total parenteral nutrition and cesarean delivery and surgical dissolution of adhesions at the 35<sup>th</sup> week. Due to worsening of symptoms she underwent endoscopic (pouchoscopy) and imaging study which revealed volvulus of the efferent limb of the pouch.

The second patient due to severe abdominal pain and vomiting she underwent endoscopic and imaging study which revealed complete obstruction of the efferent limb of the pouch and had an operation on emergency basis.

**Results** The first patient was operated with open laparotomy which showed an incomplete volvulus of the efferent limb due to adhesions of the named loop with the right ovary and fallopian tube as a result of uterus growing size. The second patient had an emergency operation which showed a complete volvulus of the efferent limb around the mesenteric vessels with concomitant severe ischaemic lesions. After limb volvulus resolution the tissue oxygenation remained enough satisfactory to prevent us for any segmental enterectomy.

**Conclusions** Small bowel volvulus (efferent limb of the pouch) could be one of the causes for recurrent obstructive episodes in patients operated with IPAA. High level of suspicion and suitable imaging and endoscopic tools will lead to the correct diagnosis. Premature surgical treatment could prevent us from unnecessary small bowel resection.

## eP96 V ENDOSCOPIC CLOSURE OF A COLOCUTANEOUS FISTULA AFTER PEG PLACEMENT

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DOI 10.1055/s-0040-1704864

A 16-year-old boy with medical history of neurofibromatosis type-1 and malignant peripheral nerve sheath tumor underwent PEG tube placement due to dysphagia, anorexia and malnutrition. After PEG replacement, patient started with persistent diarrhea and weight loss. A contrast study revealed a colocutaneous fistula, as contrast infused through the PEG appeared in the colon. For endoscopic closure, fistula edges were fulgurated with argon-plasma and after, we placed two 14/6 mm over-the-scope-clip (OTSC); finally, a detachable snare was placed beneath both OTSC jaws, with the help of a foreign body retrieval forceps. Percutaneous stool leaking completely stopped 2 days later, confirming fistula closure.

## eP97 IMPROVING QUALITY IN COLON CAPSULE ENDOSCOPY; EFFECTS OF DIFFERENT BOWEL PREPARATION REGIMENS

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DOI 10.1055/s-0040-1704865

**Aims** In selected patients, Colon Capsule Endoscopy (CCE) has been recommended by ESGE as an alternative to colonoscopy. The effect of different bowel preparation regimens on Completion Rate (CR) and Bowel Cleansing (BC) is inconclusive.

We aimed to assess the effect of changing from a 4 L-PEG (KleanPrep) to a 2 L-PEG + ascorbic acid (MoviPrep) bowel preparation on CR and BC.

**Methods** In order to eliminate selection bias, 50 sequential patients who underwent CCE, pre and post change from 4 L-PEG to 2 L-PEG bowel preparation regimen were included in the study. Both groups used a Phosphosoda (NaP) and Gastrograffin booster protocol. Patients' demographics, indications, BC score, CR and findings were recorded. BC was divided into excellent, adequate or inadequate. Completion was defined as passage of CCE beyond the dentate line. Chi squared test was used to compare proportions and p value of < 0.05 was considered significant.

**Results** Demographics were similar between the 4 L-PEG vs 2 L-PEG groups – mean age 50.1 (24–80) vs 44.6 (16–77); 48% (n = 24) vs 36% (n = 18) males respectively. Chronic diarrhoea was the most common indication for CCE in both groups (28%, n = 14 in both). For CR, there was a statistically significant difference favouring 2 L-PEG over 4 L-PEG; 72% (n = 36) vs 54% (n = 27), p = 0.03. For BC, there were no significant difference between excellent, adequate and inadequate views between the two groups; excellent 22% (n = 11) vs 24% (n = 12), p = 0.8, adequate 66% (n = 33) vs 62% (n = 31), p = 0.7, inadequate 12% (n = 6) vs 14% (n = 7), p = 0.8. Positive findings were similar between groups 50% (n = 25) and 56% (n = 28)), p = 0.5.

**Conclusions** Reduced volume bowel preparation using a PEG solution which includes ascorbic acid (MoviPrep) improved CCE performance in our patient cohort. Completion rates overall remain suboptimal at 72%. Other potential cofounders in improving CR including changing booster regimen should also be analysed.

## eP98 DEVELOPMENT OF ENDOSCOPIC SCORING SYSTEM TO PREDICT RISK OF INTESTINAL TYPE GASTRIC CANCER: PRELIMINARY PROSPECTIVE STUDY

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DOI 10.1055/s-0040-1704866

**Aims** We aimed to develop endoscopic scoring system to evaluate atrophic gastritis and intestinal metaplasia using narrowing band imaging (NBI) and magnification view and to compare endoscopic scores with Operative link for gastritis assessment (OLGA) and Operative link for gastric intestinal metaplasia assessment (OLGIM).

**Methods** Total 28 patients underwent diagnostic esophagogastroduodenoscopy were enrolled and endoscopic scoring using NBI and magnification view were performed. Four areas (the lesser and greater curvatures of the antrum and the lesser and greater curvature side of the body) were observed and biopsies were taken. Degree of atrophy was scored from 0 to 2 according to Kimura-Takemoto classification (0: C0-2, 1: C3-01, 2: O2-3). Degree of

metaplasia was scored from 0 to 3 (0: no metaplasia, 1: metaplasia at antrum, 2: metaplasia at body, + 1: 1/2 > observed field). Endoscopic scores were compared to OLGA and OLGIM staging.

**Results** Correlation coefficients for atrophy between endoscopic and histologic scores 0.85 (95% CI: 0.70–0.93, p < 0.001) and those for metaplasia was 0.74 (95% CI: 0.85–0.87; p < 0.001). For atrophic gastritis, endoscopic score > 1 correlated OLGA Stage III and IV with a sensitivity, specificity, positive predictive value, and negative predictive value of 92%, 88%, 86% and 93%, respectively and for metaplasia, endoscopic score > 1 correlated high OLGIM Stage III and IV with those values of 78%, 100%, 100% and 73%, respectively.

**Conclusions** Endoscopic scoring for gastric atrophy and intestinal metaplasia using NBI-magnification view seems to correlate well with histologic staging.

## eP99 ENDOSCOPIC PREDICTORS OF RESPONSE TO OCTREOTIDE THERAPY FOR GASTROINTESTINAL BLEEDING DUE TO SMALL BOWEL ANGIOECTASIAS

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DOI 10.1055/s-0040-1704867

**Aims** To identify potential endoscopic predictors (i.e. Yano-Yamamoto subtype, number of lesion and distribution) of response to octreotide therapy in patients with small bowel (SB) bleeding due to angioectasias (AEs).

**Methods** This was a single-center, retrospective study. Records of capsule endoscopy examinations performed for SB bleeding from 2012 to 2018 were evaluated. Patients who received a diagnosis of SB AEs and were treated with octreotide were included. Response to therapy was defined by haemoglobin levels, number of bleeding episodes and units of transfused red cells. An univariate analysis was performed to evaluate the independent effect of each endoscopic factor on the likelihood of poor response to octreotide.

**Results** After exclusion criteria, 20 patients were included (mean age 75 ± 8.8 years, 9 male). According to the outcome 15 patients (75%) were classified as responders (group A) and 5 (25%) as not-responders (group B). Among group A, one patient (7%) had multiple AEs, 8 patients (53%) had subtype 1a AEs and 6 patients (40%) had AEs lesions located in multiple SB segments. Within group B, multiple lesions, subtype 1a AEs and distribution within multiple SB segments were observed in 5 (100%), 2 (40%) and 2 (40%) patients, respectively. The presence of multiple small bowel lesions (≥ 9) was the only covariate significantly associated with poor response to octreotide (p = 0.0001), while no significant association between AE subtype or distribution and response to octreotide was found.

**Conclusions** Although clinical factors associated with poor response to octreotide have been previously identified, to date no study has analyzed the role of endoscopic factors in predicting the response to octreotide. In our study, the number of AE lesions but not the AE subtype and distribution, was significantly associated with response to therapy. Further prospective studies are needed to confirm our data.

## eP100 A RARE CASE OF UPPER GASTROINTESTINAL BLEEDING: ISCHEMIC DUODENAL ULCER

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DOI 10.1055/s-0040-1704868

**Aims** H.pylori and chronic NSAID use are the most common causes of duodenal ulcers. Ischemia is an uncommon cause of duodenal ulcers due to its rich vascular supply.

**Methods** An 86-year-old woman with a past medical history of stroke and peripheral vasculopathy, was admitted to our department with hematemesis and melenas. Physical examination disclosed severe skin pallor and melenas in rectal examination.

Laboratory tests revealed anemia (Hemoglobin 6,3 mg/dl) and lactic acidosis (Lactate 134).

She underwent an urgent upper gastrointestinal endoscopy which demonstrated a giant duodenal ulcer with central visible vessel (Forrest IIA. Initially, we tried mechanical hemostasis by hemoclip placement that triggered further iatrogenic section vessel and subsequent bleeding. Finally, hemostasis was obtained by epinephrine and aetoxisclerol injection.

**Results** Patient was started on high dose proton-pump inhibitors and H. pylori serologies were negative.

Given the high suspicion of acute ischemic duodenal ulcer we decided to perform a computed tomography (CT) which demonstrated an *intramural hematoma* of the *ascending aorta* and *aortic arch* in addition to moderate-severe pericardial effusion.

A repeat EGD, 5 days later, showed remarkable improvement with fibrin-base duodenal ulcer and no signs of necrosis

Finally, cardiologists and cardiac surgeons decided conservative treatment and a few days later the patient got discharged.

**Conclusions** Ischemic injury is a rare cause of duodenal ulceration due to the rich vascularization of the gastroduodenal mucosa.

Given the paucity of data, there are no official recommendations for ischemic gastroduodenal ulcers. Surgical resection of the necrotic bowel with non-healing ulcers remains the treatment of choice in most cases.

## eP101 SMALL BOWEL CAPSULE ENDOSCOPY IN THE WEST OF IRELAND: A CLOSER LOOK AT THE FIRST YEAR

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DOI 10.1055/s-0040-1704869

**Aims** The European Society of Gastrointestinal Endoscopy (ESGE) recommends SBCE as the first line investigation in patients with obscure GI bleeding. SBCE is also indicated to assist in the diagnosis of small bowel Crohn's disease. The aim of this study was to look at SBCE in the West of Ireland.

**Methods** This is a retrospective review of all SBCE performed in University College Hospital Galway since the introduction of the service in March 2019. All patients undergoing SBCE during this time were included. Data were collected from Pilcam studies. Demographics, indication and outcome were recorded. Quality of bowel preparation, transit time and need for patency testing were also analysed. The use of anticoagulation/antiplatelet therapy was recorded.

**Results** In total, 61 patients underwent SBCE during the study period. Pathology was seen in 44 (72%) of the cases. 41 (67%) were referred for investigation of obscure GI bleeding or iron deficiency anaemia. 16 of these patients (39%) were taking anticoagulation/antiplatelet therapy. 26 (59%) were found to have angiodysplasia/angioectasia. Within this group, 50% of patients were taking anticoagulation/antiplatelet therapy compared to 12% of those in which no pathology was seen. The average age of those found to have angiodysplasia was 66.7 compared to 41 in those with other/no pathology. 16 patients were referred for diagnosis or assessment of small bowel Crohn's disease. 10 (62.5%) had findings consistent with the diagnosis.

**Conclusions** The introduction of SBCE in our centre has proven to be a useful addition for assisting in investigation of obscure GI bleeding and other small bowel pathology with positive findings detected in almost three quarters of the patients. It can be performed in an outpatient setting and has a very high completion rate. The use of anticoagulant/antiplatelet therapy may increase the risk of obscure GI bleeding/IDA due to angiodysplasia.

## eP102 TRENDS IN PEPTIC ULCER DISEASE: IS PEPTIC ULCER DISEASE SLOWLY DISAPPEAR?

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DOI 10.1055/s-0040-1704870

**Aims** To show the trends in the prevalence of peptic ulcer disease in uninvestigated dyspeptic patients in 2005. and 2015. year in Serbia

**Methods** Data from 1888 consecutive patients with dyspeptic symptoms referred for upper endoscopy during 2005. and 2186 patients from 2015.year were analysed in relation to peptic ulcer disease

**Results** Among 1888 patients included in 2005. average years of peptic ulcer disease expression increased from 55.95 years in 2005. to 59.89 years in 2015. Male individuals had peptic ulcer disease with 57.29 years in 2005 vs 62.02 years in 2015. Female patients had similar trend with 53.89 in 2005. to 57.23 one decade later, taking both sexes into account 53.55 years vs. 58.49 in 2015. There was a reduced trend from 2005 to 2015 in the prevalence of peptic ulcer disease 13.34% vs 6.82% respectively (mainly because of decrease in duodenal ulcers) (T = 7.1219; p<0.05). Prevalence of duodenal peptic ulcer disease decreased in last decade (T = 7.6576; p<0.05), but prevalence of gastric peptic ulcer disease is not significantly different (T = 1.4529; p>0.05).

**Conclusions** The prevalence of peptic ulcer disease, mainly duodenal ulcers, was reduced in last decade in both groups with clear trend of disease expression in older population.

## eP103 GASTRIC CAT SCRATCH

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DOI 10.1055/s-0040-1704871

**Aims** Describe the case of gastric lesions due to barotrauma.

**Methods** Review of a case of cat scratch injuries after diagnostic gastroscopy.

**Results** We report the case of a 29 year-old woman, without significant medical history, who consulted for dyspepsia.

Gastroscopy was completed without traumatic progression, however, we observed after a prolonged insufflation the appearance of longitudinal superficial stretch marks with active bleeding in the mucosa of the subcardial and fundus region, which did not exist at the beginning of the exploration. The gastric mucosa had endoscopic signs of antral gastritis, so biopsies were taken and the histology was compatible with mild chronic atrophic gastritis with H. pylori negative.

Conservative management was performed without further evidence of new complications.

**Conclusions**

1. Gastric cat scratch injury is a potential risk after gastroscopy.
- 2 We recommend taking biopsies to rule out underlying gastric pathology and conservative management in the absence of perforation – massive bleeding.
3. We believe that the main underlying mechanism It is excessive gastric distention due to the presence of a narrow pylorus and a competent lower esophageal sphincter on a gastric mucosa, in our case affected by the presence of atrophic chronic gastritis.

## eP104 SAFETY OF POLYPECTOMY IN PATIENTS WITH PEUTZ-JEGHERS SYNDROME: EXPERIENCE IN A TERTIARY CENTER

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DOI 10.1055/s-0040-1704872

**Aims** The aim of this study was to assess the safety of endoscopic resection of gastrointestinal hamartomatous polyps in patients with PJS

**Methods** We conducted a retrospective and observational study in a tertiary care center in Mexico City from 2000 to 2019. All patients with PJS diagnosis who underwent for endoscopic polypectomy were included. Their clinical characteristics, polyp size, endoscopic treatment and complications were reviewed.

**Results** Fifty-nine endoscopic procedures and 136 polypectomies were performed in 15 patients. Most of these resections were in colon (48.5%), followed by small bowel and stomach. There were only 2 severe complications (1.4%), a perforation that required surgery and a late hemorrhage treated with hemostatic clips with a favourable outcome. No death occurred. Four patients developed neoplasm (gastric, cervic, ovary and breast).

**Conclusions** According to our results we can conclude that endoscopic resection of hamartomas in patients with PJS is a safe procedure.

Colon and rectum

09:00–17:00

Thursday, April 23, 2020

ePoster area

## eP105 EFFECT OF TRAINING ON THE REFERRALS TO SURGERY FOR LARGE BENIGN COLORECTAL POLYPS

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DOI 10.1055/s-0040-1704873

**Aims** Despite endoscopy is more efficient, safe and cost-effective than surgery for the treatment of large non-pedunculated benign colorectal polyps (LNBCP), still a large proportion of benign polyps are referred to surgery. We aimed to

evaluate the effect of a specific training on the referral rate to surgery for LNBCP.

**Methods** Benign non-pedunculated colorectal polyps  $\geq 20$  mm that were scheduled for EMR at dedicated list between January 2013 and December 2018 were retrospectively included in the analysis. One endoscopist underwent advance EMR training at a referral centre between 2014–2015 and after that implemented the know-how in the centre of origin and performed 35% of the EMRs. Efficacy of EMR was compared between pre-training (2013–2014) and after-training (2015–2018) period. The main outcome was rate of polyps referred to surgery for technical reasons.

**Results** In total 516 polyps in 445 patients were included; 93 polyps in 87 patients and 419 polyps in 354 patients in, pre- and post-training period respectively. Baseline polyp characteristics are shown in table 1. Polyps were larger and more difficult in post-training period. The number of polyps removed in a first attempt doubled in the post-training period (46.2% vs. 87.3%, respectively;

$p < 0.001$ ). The number of polyps that were referred to surgery because of technical difficulties decreased dramatically in the post training period: 21 (24.1%) vs. 6 (1.7%);  $p < 0.001$ ). The rate of severe adverse events was similar in both periods: Two patients (2.3%) in pre-training period and 1 (0.3%) in post-training period were operated due to perforation after EMR.

**Conclusions** Specific training in EMR significantly increased efficacy of EMR for large non-pedunculated benign colorectal polyps and lead to decreased rates of surgery.

## eP106 ENDOSCOPIC FULL-THICKNESS RESECTION (EFTR) OF COLORECTAL LESIONS WITH THE FULL-THICKNESS RESECTION DEVICE (FTRD): A RETROSPECTIVE ANALYSIS OF 55 CONSECUTIVE CASES

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DOI 10.1055/s-0040-1704874

**Aims** EFTR is an emerging therapeutic option for endoscopic resection of lesions, which cannot be adequately and/or safely treated with conventional endoscopic techniques (EMR and ESD), such as epithelial neoplasia extending deeper than the mucosa or associated with significant fibrosis. In this single-center, retrospective study we aimed to evaluate the efficacy and safety of EFTR of colorectal lesions in various indications using the FTRD.

**Methods** We performed a retrospective analysis of 55 consecutive patients, who were admitted to our center between November 2016 and November 2019. The EFTR was conducted using the FTRD System (OVESCO, Tübingen, Germany).

**Results** 55 patients (18 females, 37 males, mean age 69 years) underwent EFTR in our center. The 34 in colon and 21 in rectum located lesions (lesion mean size 12 mm, range 4–26) were all endoscopically reached. The indications included 36 adenomas (recurrent/residual adenomas, adenomas with non-lifting sign), 11 T1 adenocarcinomas, 6 neuroendocrine tumors, one subepithelial tumor and a patient with suspected Hirschsprung disease. Three cases were performed due to the lesion size (25–50 mm) as a hybrid technique (combination of EMR and EFTR). Resection was technically successful in 52 patients (94,5%). Histologically complete resection (R0) was achieved in 47 patients (85,5%). The R0 resection rate was 78,2%. 11 adenocarcinomas were histologically proven (R0 in 6/11 cases, 55%). 4 out of 11 patients (3 with sm3 histology und one with R1) underwent oncologic resection, whereas the other patients were followed endoscopically. The total complication rate was 12,7% (4 bleedings, 2 perforations, 1 subileus).

**Conclusions** Our study, consistent with previously published data, shows favourable results concerning efficacy and safety, especially for benign lesions and

► **Tab. 1** Baseline polyp characteristics.

	Period before training (2013–2014) 93 polyps in 87 patients	Period after the training (2015–2018) 419 polyps in 354 patients	P value
Size, mean mm/Range (min – max)/ Proportion of $\geq 40$ mm (n, %)	26.7/(20–70)/ 7 (7.5)	30.5/(20–90)/ 81 (21.2)	0.007

neuroendocrine tumors. Even in early colorectal cancer surgery can be avoided in many low risk cases. Thus, prospective studies are required to define indications for early colorectal cancer.

### eP107 'EXFOLIATIVE' COLITIS DURING METHOTREXATE PLUS GOLIMUMAB TREATMENT

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DOI 10.1055/s-0040-1704875

**Aims** Many drugs and chemical agents can cause colitis, producing clinical signs and symptoms which can simulate organic colonic diseases (i.e. Crohn's disease, infectious enteritis). Since histopathological features of iatrogenic colitis are not specific, the diagnosis is often difficult and can be suggested by a temporal relationship between beginning of a new medication and symptoms and by improvement with withdrawal and/or relapse with a re-challenge of the suspected agent.

**Methods** This case report shows a suspicious correlation between an unusual "exfoliative" colitis and a combined methotrexate plus golimumab treatment due to rheumatoid arthritis.

**Results** A 61-year-old Caucasian female, affected by rheumatoid arthritis in treatment with methotrexate and golimumab, was admitted to Emergency Unit because of abdominal pain, rectal bleeding and a "worm-like" material expulsion from rectum. Abdominal examination showed tenderness in left iliac fossa. Blood test were unremarkable. CT scan showed thickening of sigmoid and descending colon and fluid collection in Douglas' pouch. For persistent rectal bleeding, colonoscopy was performed showing a tight stricture in the context of an "exfoliate" mucosa in descending colon. A 5.9 mm diameter endoscope was used to pass through the stenosis, confirming 'exfoliate' mucosa pattern in descending colon and normal mucosa in traverse colon. Histology of colonic biopsies showed extracellular mucoid material and epithelial colonic cells surrounded by eosinophils, suggesting an acute iatrogenic colonic inflammation. Golimumab were immediately discontinued. At 2 and 12 months follow up, patient was asymptomatic and a complete mucosal healing was observed at colonoscopy.

**Conclusions** Diagnosis of iatrogenic colitis can be difficult due to lack of pathognomonic histopathological signs. However, an accurate and precise medical and pharmacological history followed by clinical suspect and temporal relationship can guide to a final diagnosis.

### eP108 V CLINICAL CASE OF INTRAOPERATIVE BLEEDING OF ENDOSCOPIC RESECTION OF COLON NEOPLASIA

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DOI 10.1055/s-0040-1704876

**Objective** Presentation of possible treatment methods for massive intraoperative bleeding with an endoscopic resection of the sigmoid colon polyp.

1. Features of endoscopic mucosal resection using endoscopic ligature.
2. Tactics for massive intraoperative bleeding
  - The introduction of an adrenaline solution into the submucosal layer
  - Mucosal resection for improved access
  - Removing the ligature
  - Reinjection of a solution into the submucosal layer

**Conclusion** The method of endoscopic resection of colorectal lesions using endoscopic ligature has a number of features. The introduction of a solution of adrenaline into the submucosal layer allows you to visualize the wound with massive bleeding to determine further tactics.

### eP109 DOUBLE ENDOSCOPE ASSISTED ENDOSCOPIC SUBMUCOSAL DISSECTION FOR TREATING TUMORS IN RECTUM AND DISTAL COLON: A FEASIBILITY STUDY

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DOI 10.1055/s-0040-1704877

**Aims** Colorectal Endoscopic submucosal dissection (ESD) is an effective but challenging procedure. To facilitate its performance, several methods that apply traction are available; however, the optimal one remains to be established. Aim of this study was to evaluate the feasibility and safety of the double-endoscope assisted ESD (DEA-ESD) by improving traction to treat complex colorectal lesions.

**Methods** Naïve or previously treated lesions in rectum and sigmoid colon were included. A grasping forceps advanced through a small-caliber endoscope (GIF-XP190 N, Olympus Medical Systems, Tokyo, Japan, 5.4 mm outer diameter) was used to apply traction to the mucosal flap. Lesions were deemed complex when they exceeded a total of 9 points of the SMSA scoring system (size, morphology, site, and access) and recurrent when they were previously treated by Endoscopic Mucosal Resection (EMR). Outcome measures included procedural success rate, total procedure time, R0-resection rate, complications rate and recurrence rate at 3 months follow up.

**Results** 9 patients, mean aged 62.3 ± 14.5 years were included; five had rectal and four had tumours in the sigmoid colon. Median SMSA score was 14 (SMSA Level IV – complex polyp) while 3 patients were pre-treated with EMR. DEA-ESD was technically feasible in all cases. *En bloc* resection and R0 resection rates were 100%, respectively with a mean procedure time of 128.4 minutes. No immediate or delayed complications occurred.

**Conclusions** DEA-ESD is a feasible and safe method for treating complex or recurrent tumors in the rectum and distal colon.

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### eP110 OVERLAP OF IGG4 POSITIVE PRIMARY SCLEROSING CHOLANGITIS WITH AUTOIMMUNE HEPATITIS MAY BE ASSOCIATED WITH SCHISTOSOMAL PROCTITIS AND MICROSCOPIC COLITIS: A CASE PRESENTATION

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DOI 10.1055/s-0040-1704878

**Aims** To diagnose a case of cholestatic Liver Disease .

**Methods** Thirty Six years old male presented by 4 weeks of jaundice, fever, rigors, epistaxis. There was associated generalized fatigue, pruritus, dark urine .Bowel habits were normal. There was no history of drug intake or viral hepatitis. Lap.cholecystectomy was done 2 months earlier. Total bilirubin: 7.9 mg/dl, direct bilirubin: 4.5 mg/dl, Albumin: 3.4 gm/dl, INR: 1.5, ALT: 76 IU/L, AST: 134 IU/L, Alkaline phosphatase: 123 KA, GGT: 123 IU/L, ANA, Anti-ds DNA, AMA, ASMA, ALKM, P-ANCA, total IgA level and IgA tTG, all were normal. Total IgG: 4122 mg/dl (700–1800 mg/dl), IgG4: 207 mg/dl (8–140 mg/dl), Total IgM: 400 mg/dl (< 240 mg/dl). Serum iron and copper studies were normal. CBC showed thrombocytopenia (142 × 10<sup>9</sup>/L). Multiphasic abdominal CT showed enlarged liver with multiple cirrhotic nodules. Moderately enlarged spleen with no focal lesions. Mild pelvic ascites. MRCP showed

normal CBD .IHBRS showed stenotic segments with distal dilatation denoting inflammatory process (cholangitis).No pancreatic duct dilatation.

**Results** Bone Marrow Biopsy showed high normocellular bone marrow in fragments and trails.Liver biopsy showed marked bridging fibrosis with occasional nodules completely surrounded by fibrosis.Moderate dense round cell infiltrate mainly lymphocytes with scattered plasma cells & neutrophils in the fibrous septa and the expanded portal areas.There was moderate bile duct injury and bile ductular proliferation. Intreface hepatitis (piece meal necrosis) was seen continuous around < 50% of portal areas. There was moderate cellular and canalecular cholestasis with feathery degeneration of the hepatocytes.Upper & lower GI endoscopies with distal duodenal & colonic biopsies showed mild non specific dudenitis.The rectosigmoid biopsies showed Bilharzial colitis.The cecum & transvers colon biopsies showed intact villous pattern with superficial erosions & infiltration of the lamina propria by mild chronic inflammatory infiltrate,formed mainly of lymphocytes and plasma cells (microscopic colitis).

**Conclusions** Overlap of IgG4 positive PSC with AIH may be associated with Schistosomal proctitis and microscopic colitis.

### eP111 STANDARD VERSUS INTENSIFIED BOWEL PREPARATION FOR MORNING COLONOSCOPY

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**DOI** 10.1055/s-0040-1704879

**Aims** To check if an intensified bowel preparation (BP) regimen leads to a significant improvement in BP quality.

**Methods** A single center, retrospective observational study. 176 patients referred for morning endoscopic mucosal resection (EMR) received intensified BP (two split doses of Sodium Picosulfate/Magnesium Oxide/Citric Acid (Picosalax) with one dose (1500 cc) of polyethylene glycol between them). This group was compared with 208 ambulatory patients having morning colonoscopy following standard split-dose BP with Picosalax. Bowel preparation quality was assessed with the Boston Bowel Preparation Score (BBPS). Failed BP was defined as a colon segments with a score of 1 or a global score below 6.

**Results** The mean BBPS was similar in both groups (7.28 in both groups). However, the rate of failed BP was significantly lower in patients who had an intensified BP, both overall (3.4% vs 17.8%,  $p < 0.001$ ) and per colon segments (Right colon: 2.3% vs 13.5%,  $p < 0.001$ , Transverse colon: 1.1% vs 2.9%,  $p = 0.232$ , Left colon: 1.1% vs 5.3%,  $p = 0.025$ ).

**Conclusions** In this retrospective study, intensified BP reduced failed BP rates compared with standard split-dose BP.

### eP112 FOLLOW UP COLONOSCOPY AFTER ADENOMA RESECTION IN PATIENTS WITH DIVERTICULOSIS OF COLON

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**DOI** 10.1055/s-0040-1704880

**Aims** To compare the prevalence of colonic polyps, in recurrent colonoscopies, in patients with and without diverticulosis.

**Methods** A retrospective cohort study. All colonoscopies performed in our department, between 2007–2015 were reviewed. Patients with, at list, two consecutive colonoscopies, were included. Patients with IBD or prior colonic surgery were excluded.

Patient's demographics, complete medical history and full endoscopic data was documented.

**Results** A total of 595 patients met the inclusion criteria. 398 in the diverticulosis group (DG) and 197 patients in the non-diverticulosis group (NDG), mean age  $67.8 \pm 8.7$  vs  $64.7 \pm 10.5$  years, respectively ( $p < 0.0001$ ). 68% of DG were male, 49% in the NDG ( $p = 0.029$ ). In the NDG, larger polyps were found in the

first and second endoscopy ( $13 \pm 12.7$  mm vs  $9.7 \pm 9.2$  mm in first colonoscopy,  $p = 0.002$  and  $10.4 \pm 16.9$  mm vs  $7.6 \pm 7$  mm in the second,  $p = 0.04$ ), with more advanced histology compared to DG (21.8% vs 11.7% respectively,  $p = 0.003$ ). Multi variate analysis found the absence of diverticular disease, to be the only significant predicting factor for the presence of advanced adenoma. In the second and third colonoscopies the NDG had a higher rate of adenomatous polyps, compared to DG (78.2%, 65.6% respectively,  $p = 0.043$  in the second colonoscopy, 80.1%, 66% respectively,  $p = 0.041$  in the third colonoscopy). No significant difference was found in the time interval between colonoscopies between the two groups.

**Conclusions** In a prolonged follow up, we found that the presence of diverticulosis may be a protecting factor against the development of large polyps and advanced histology. Our results suggest that the presence of diverticulosis should not change the follow-up interval recommended. The pathophysiology of this protective effect should be further investigated.

### eP113 IBD PATIENTS EQUALLY TOLERATE BOWEL PREPARATION BUT NEED HIGHER DOSES OF SEDATION DURING COLONOSCOPY: RESULTS FROM A PROSPECTIVE, CASE-CONTROL, SINGLE-CENTRE STUDY

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**DOI** 10.1055/s-0040-1704881

**Aims** IBD patients are intended to undergo several times colonoscopy. To prospectively evaluate tolerability of bowel preparation and colonoscopy in UC and CD patients compared to subjects participating in a colorectal cancer population screening program.

**Methods** we consecutively enrolled CD and UC patients and screening subjects (SS). Bowel preparation was done by macrogol 4.000 + simethicone + sodium-sulphate-anhydrous. Cleansing was assessed by Boston Bowel Preparation Scale (BBPS, from 0 to 9, the best); sedation dose and need to increase the initial doses of midazolam (3.0 mg) and fentanyl (0.05 mg). Tolerability of bowel preparation, discomfort and pain during colonoscopy were assessed by Visual Analogue Scale (VAS) from 0 to 100 mm.

**Results** 65 UC (26 women, mean age  $50.6 \pm 15.4$  yrs), 65 CD (29 women, mean age  $44.7 \pm 3.9$ ) and 94 SS (47 women, mean age  $61.9 \pm 6.9$ ) enrolled. Bowel preparation was similarly tolerated in UC ( $70.3 \pm 17.7$  mm), CD ( $73.1 \pm 12.7$  mm) and SS ( $73.2 \pm 12.6$  mm) ( $p = 0.397$ ). Complete colonoscopy was similarly done in UC (61/65, 93.8%), CD (60/65, 92.3%) and SS (91/94, 96.8%) ( $p = 0.364$ ). BBPS did not show significant differences between UC ( $6.5 \pm 1.0$ ), CD ( $6.4 \pm 1.1$ ) and SS ( $6.4 \pm 1.0$ ) ( $p = 0.824$ ). The need to increase sedation doses was significantly higher in CD (26/65, 40.0%) and UC (16/65, 24.6%) than in SS (4/94, 4.3%) ( $p < 0.0001$ ). The mean increases in midazolam and fentanyl doses were significantly higher in CD ( $0.446 \pm 0.660$  mg and  $0.009 \pm 0.019$  mg) and UC ( $0.300 \pm 0.620$  and  $0.008 \pm 0.018$  mg) than in SS ( $0.042 \pm 0.250$  mg and  $0.001 \pm 0.007$  mg) ( $p < 0.0001$  in both cases). Discomfort and pain during colonoscopy were similar in UC ( $35.0 \pm 23.0$  mm and  $27.6 \pm 24.6$  mm), CD ( $37.5 \pm 22.2$  mm and  $28.8 \pm 22.5$  mm) and SS ( $33.7 \pm 18.7$  and  $26.9 \pm 19.8$  mm) ( $p = 0.530$  and  $p = 0.866$ ).

**Conclusions** in IBD patients, higher sedation doses are needed in order to warrant a tolerated colonoscopy. Bowel preparation is equally tolerated and efficacious in IBD patients and in screening subjects.

## eP114 IS COLORECTAL POLYP CHARACTERIZATION BETTER WITH PHOTOGRAPHS OR VIDEO CLIPS? RANDOMISED PROSPECTIVE STUDY WITH TRAINEES, SENIOR GASTROENTEROLOGISTS (GE) AND EXPERTS

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**DOI** 10.1055/s-0040-1704882

**Aims** Accurate real-time characterization of colorectal polyps during colonoscopy is important as it will allow the most appropriate treatment to be chosen. No study has ever shown if video clips or photographs are better for characterization.

The primary endpoint of this study was to compare histologic prediction of colorectal polyps between a group of GE watching video clips and another group characterizing with pictures of the corresponding polyps. The secondary endpoint was to compare size prediction of the same colorectal polyps according to the support used.

**Methods** Twenty colorectal lesions were shown to the participants: a video clip or 3 to 5 pictures of the corresponding lesion. The images were taken by two expert endoscopists, in HDWL and visual chromoendoscopy without zoom. The two groups had images of the most pejorative areas.

The randomization was done by stratifying according to experience and practice place. For each lesion, participants had to assess size and histologic subtype using the CONECC Classification (hyperplastic polyp, sessile serrated lesion, low risk adenoma, high risk adenoma or superficial adenocarcinoma and invasive adenocarcinoma). The correct histological status and size were defined by the pathology reports or combined criteria between histology and experts' opinion for the high risk lesions.

**Results** There were 233 participants: 118 trainees, 75 non experts and 40 experts. 48% were shown video clips and 52% pictures. The groups were homogeneous.

There was no statistical difference between the Video group and the Photographs group for histologic characterization ( $p = 0.7$ ), our primary endpoint. However, the size was better assessed using photographs rather than video clips ( $p = 0.025$ ). Seniors had better results than trainees, and experts than non-experts. A longer experience was not linked with better characterization, but a former characterization lesson was ( $p < 0.001$ ).

**Conclusions** Our study does not encourage to use video clips rather than photographs for colorectal polyp histologic characterization.

## eP116 ACUTE LOWER GASTROINTESTINAL BLEEDING IN ITALY (ALIBI STUDY): A MULTICENTRE PROSPECTIVE, COHORT STUDY

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**DOI** 10.1055/s-0040-1704883

**Aims** Acute lower GI bleeding (LGIB) is an increasing indication for hospitalization. However, data on clinical presentation, management and outcomes are limited. This Italian, multicentre, prospective observational study was designed to explore these areas.

**Methods** The study was conducted from October 1<sup>st</sup> 2018 to October 28<sup>th</sup> 2019 in 15 hospitals. Consecutive, unselected adult with acute LGIB were included.

**Results** Data on 1198 cases (1060 new admissions; 138 inpatients) were analysed. Mean age was  $74 \pm 15$  years and 76% had  $\geq 1$  major comorbidity; 31.6% were on antiplatelet agents, 26.7% on anticoagulants. At presentation, 356 (29.7%) patients underwent esophagogastroduodenoscopy that ruled out an upper GI bleeding. Colonoscopy and sigmoidoscopy were the primary investigations in most patients (736/1198, 61.4%), with therapeutic interventions in 208 (17.3%). Abdominal CT/US and CT-angiography represented the first diagnostic step in 281 (23.4%) and 62 (5.2%) cases, respectively. Overall, 523 (43.6%) patients required at least one further examination, this figure being significantly lower in patients undergoing colonoscopy first (29.5% vs. 67.8%,  $p < 0.001$ ). As a whole, 998 (83.3%) patients underwent lower GI endoscopy, 83 (6.9%) CT-angiography, 20 (1.6%) mesenteric angiography (8 with embolization), 32 (2.7%) videocapsule endoscopy; 117 (9.8%) patients did not undergo any inpatient investigation. A definite or presumptive source of bleeding was disclosed in 977/1081 (90.4%); diverticular bleeding was the most common diagnosis. Small bowel bleeding was found in 41 (3.8%) cases. RBC transfusions were administered in 526 (43.9%) patients, mostly following a non-restrictive strategy. The median (IQR) length of stay was 7 (5–12) days. In-hospital rebleeding and mortality were reported in 105 (9.7%) and 41 (3.4%) patients, respectively, both these figures being significantly higher for inpatients than outpatients (6% vs. 2.7%,  $p < 0.001$ ; 8% vs. 14.5%,  $p = 0.01$ , respectively).

**Conclusions** This is the first Italian prospective study on LGIB. Patients with LGIB are elderly, have multiple comorbidities and frequent antithrombotic use. Their management varies across centres and might benefit from a better standardization. In-hospital mortality is comparable to UGIB.

## eP117 PLEINVUE IN THE CLINICAL PRACTICE OF A PRIVATE HOSPITAL IN NORTHERN MADRID: INITIAL RESULTS OF COLONOSCOPIC PREPARATION

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**DOI** 10.1055/s-0040-1704884

**Aims** To evaluate the effectiveness, tolerability and safety of IL PEG + ASCORBIC ACID (PLEINVUE) in a real-life setting.

**Methods** Systematic registration and prospective analysis of patients undergoing screening/diagnostic colonoscopy. Bowel cleansing was assessed through the Boston Bowel Preparation Scale (BBPS). Tolerance and side effects were recorded. All patients received bowel preparation with PLEINVUE with a previous 48-hour fiber-free diet followed by 24 hours of clear liquids. We instructed patients to take PLEINVUE as follows: the first dose at 21:00 hours the day before and the second dose between 4–6 hours before colonoscopy, followed by ½ liter of clear liquids after each dose. We advised patients to divide the second dose in four glasses (125 ml) alternating between a glass of preparation and a glass of clear liquids and to drink it slowly for better tolerance.

**Results:** Between October 2018 and October 2019, 500 patients were included, 52% women and 48% men. Mean age was 58 years (18–83 years), 31.4%  $\geq 65$  years. Complete bowel preparation was taken by 95% patients.

Bowel cleansing by BBPS was  $\geq 6$  in 94%,  $\geq 7$  in 77% and  $\leq 5$  in 6% of patients and in the right colon BBPS = 3 in 47% and BBPS = 2 in 47%. In patients  $\geq 65$  years BBPS  $\geq 6$  in 93%, BBPS  $\geq 7$  in 76% and BBPS  $\leq 5$  in 5%. Tolerance was good 78%, regular 7% and bad 15%. Vomiting was reported in 15% patients, nausea in 5% without any serious side effects. In those patients reporting vomiting BBPS was  $\geq 6$  in 89% and BBPS 8–9 in 58%.

**Conclusions** Colonoscopy preparation with PLEINVUE obtains optimal BBPS levels in total colon cleansing, with an excellent right colon cleansing with only minor side effects. Nausea and vomiting do not seem to affect bowel preparation even in those patients without adequate adhesion.

### eP118 PALISADE TECHNIQUE AS AN EFFECTIVE METHOD OF ENDOSCOPIC SUBMUCOSAL DISSECTION FOR COLORECTAL TUMORS GREATER THAN HALF A LUMINAL CIRCUMFERENCE

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**DOI** 10.1055/s-0040-1704885

**Aims** Although ESD has become the effective therapeutic strategy for colorectal tumors, it still remains challenging to treat large tumors, especially those greater than 50 mm in size, the size that has been reported as an independent risk factor for post-ESD complications. We invented a new technique of ESD called palisade technique, which is effective in dissecting large colorectal tumors. In this study, we investigated the outcomes of colorectal ESD using palisade technique.

**Methods** We retrospectively collected data of colorectal ESD using palisade technique from August 2017 until November 2018. Dual knife was used in all colorectal ESD cases. All ESDs were planned according to Japanese guideline for ESD and EMR of colorectal cancer.

**Palisade technique** Sodium hyaluronate solution mixed with indigo carmine was injected to lift the tumor. Using dual knife, straight submucosal tunnel was made from anal to the oral side. Multiple straight tunnels are created parallelly, leaving pillars of submucosal tissues between the tunnels resembling a palisade, which are left for the purpose of “holding” the scope for stabilization during dissection. Circumferential incision was made after the entire tumor is undermined by the tunnels then submucosal palisade was dissected one by one for tumor removal.

**Results** 10 patients with 10 lesions were included in the study, five in rectum, and five in colon. All tumors extended for at least over half a luminal circumference. The average tumor width was 95.9 mm, the average dissection time was 152.3 minutes, and the average dissection speed was 33.5 mm<sup>2</sup>/min. There was 100% en bloc resection rate, and 80% R0 resection rate with no perforation. There was one case of post-ESD bleeding needing endoscopic hemostasis.

**Conclusions** Our results have shown high R0 resection rate without serious adverse events. Palisade technique of colorectal ESD is a safe and effective method even for lesions extending over half a luminal circumference.

### eP119 EFFECTIVENESS AND SAFETY OF NER1006 VERSUS STANDARD BOWEL PREPARATIONS: A META-ANALYSIS OF PHASE-3 RANDOMISED CONTROLLED TRIALS

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**DOI** 10.1055/s-0040-1704886

**Aims** We conducted a meta-analysis of randomised controlled trials (RCTs) to explore cleansing success, adenoma detection rate (ADR), and safety of NER1006 (Plenvu Norgine, Harefield, UK) versus standard bowel preparations.

**Methods** PubMed/Medline and Embase were systematically searched through September 2019 by two independent reviewers for phase-3 RCTs comparing the effectiveness of NER1006 versus standard bowel preparations.

**Results** Four arms of three RCTs (2151 participants) met the inclusion criteria and were included in the meta-analysis.

The analysis showed a significant higher overall cleansing success for patients receiving NER1006 compared to standard preparation both using the Harefield Cleansing Scale (HCS) (OR 1.29; 95% CI 1.02–1.61;  $p = 0.03$ ,  $I^2 = 0\%$ , 2151 participants) and the Boston Bowel Preparation Scale (BBPS) (OR 1.43; 95% CI 1.15–1.78;  $p = 0.001$ ,  $I^2 = 0\%$ , 2151 participants), as well as a significant greater high-quality cleansing of the right colon both when assessed with the HCS (OR 2.26; 95% CI 1.44–3.54;  $p = 0.0004$ ,  $I^2 = 70\%$ , 2151 participants) and with the BBPS (OR 1.74; 95% CI 1.09–2.79;  $p = 0.02$ ,  $I^2 = 66\%$ , 2151 participants).

The pooled estimate of the NER1006 effect on ADR showed no significant difference in terms of overall ADR (OR 1.03; 95% CI 0.85–1.24;  $p = 0.77$ ,  $I^2 = 0\%$ , 2151 participants), and a higher, although not significant, ADR of the right colon (OR 1.24; 95% CI 0.85–1.79;  $p = 0.26$ ,  $I^2 = 38\%$ , 2151 participants). When considering the impact of NER1006 on mild to moderate treatment-emergent adverse events (TEAEs), we observed a significant pooled estimate of TEAEs (OR 2.25; 95% CI 1.81–2.80;  $p < 0.00001$ ,  $I^2 = 0\%$ , 2060 participants). No serious adverse event occurred neither in NER1006 and standard preparation group.

**Conclusions** Compared with standard bowel preparations, NER1006 showed a higher overall cleansing success, a greater high-quality cleansing of the right colon and a higher, even if not significant, ADR of the right colon. NER1006 showed a higher incidence of mild to moderate TEAEs, in the absence of serious adverse events.

### eP120 V SALINE-IMMERSION THERAPEUTIC ENDOSCOPY (SITE) ASSISTED POCKET-CREATION METHOD (PCM) ENDOSCOPIC SUBMUCOSAL DISSECTION (ESD) OF A CIRCUMFERENTIAL 11 × 8 CM RECTOSIGMOID COLORECTAL TUMOUR

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**DOI** 10.1055/s-0040-1704887

In our institution, pocket-creation-method(PCM) for endoscopic-submucosal-dissection(ESD), is combined with saline-immersion-therapeutic-endoscopy (SITE); this further facilitates PCM-ESD by improving view quality (through refractive magnification and minimal lense fogging) and lesion lifting (through buoyancy).

A 82-year-old man presented a circumferential rectosigmoid 11 × 8 cm granular-laterally-spreading-tumour (mixed-nodular-type)(LST-G).

Two submucosal pockets were created on both lateral sides of the lesion. After adequate, deep submucosal dissection was achieved, the two pockets were connected. The circumferential, en-bloc-resected specimen was retrieved for histopathological evaluation, which reported tubular adenoma with low and foci of high-grade dysplasia, demonstrating complete excision.

SITE-PCM-ESD for giant circumferential colorectal lesions is a feasible minimally-invasive alternative to surgery.

## eP121 USEFULNESS OF SODIUM ALGINATE FOR INJECTION SOLUTION IN COLORECTAL ENDOSCOPIC SUBMUCOSAL DISSECTION

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**Aims** Colorectal endoscopic submucosal dissection (ESD) is technically difficult especially when the submucosal layer cannot be sufficiently lifted even after submucosal injection. Therefore, the choice of injection solution is very important, and hyaluronic acid has been considered as the best injection solution for colorectal ESD. However, hyaluronic acid is expensive, and some lesions cannot be sufficiently lifted or kept lifted for a long time even after its use. On the other hand, sodium alginate (Lifal K, Kaigen Pharma Co., Osaka) is a novel injection solution extracted from seaweeds, and has high viscosity. Sodium alginate is also used as medicines for protection of gastric mucosa or hemostasis, and costs lower than hyaluronic acid. It has recently been reported it is useful for gastric ESD and esophageal ESD, but its usefulness for colorectal ESD is not elucidated. We therefore investigated the efficacy of sodium alginate for colorectal ESD.

**Methods** Colorectal ESD for nineteen lesions of sixteen patients was performed with sodium alginate as injection solution at our hospital from September 2019 and November 2019. Seventeen lesions of fourteen patients were enrolled, and two lesions which revealed the muscle retracting sign suggesting deep submucosal invasion were excluded in this study. Treatment outcome were retrospectively analyzed.

**Results** All lesions were resected with ESD in *en bloc* manner without any traction systems, and without any complications. Average tumor diameter, resected diameter, and procedure time were 30.8 mm, 37.5 mm, and 28.6 minutes, respectively. High elevation by submucosal injection with sodium alginate was obtained and it showed long-acting in all cases, which enabled speedy dissection.

**Conclusions** Sodium alginate seems to be safe and a very good option for the injection solution of colorectal ESD.

## eP122 ANALYSIS OF AN OPEN-ENDED COAXIAL METHOD FOR DETECTION COLORECTAL CANCER OBTAINED THROUGH COLONOSCOPY BIOPSIES. PRELIMINARY RESULTS

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DOI 10.1055/s-0040-1704889

**Aims** Many technological advances have been made to optimize the detection of colorectal cancer lesions. Research has shown that the electromagnetic properties of healthy and cancerous tissues differ in many biological tissues. We aim at analyzing these differences between healthy and pathological colon tissues gathered from colonoscopy biopsies.

**Methods** The dielectric constant and the conductivity of healthy and pathological colorectal samples of 70 patients were analyzed using the open-ended coaxial technique and were later correlated with their pathology results. Since these properties depend on multiple factors like tissue's temperature, system calibration and the patient itself, polyps were analyzed by computing the difference between the healthy and the pathological samples within each patient. Measurements were performed on adenocarcinomas (CRC), adenomas without dysplasia, adenomas with low-grade dysplasia, adenomas with high-grade dysplasia, hyperplastic and hamartomatous polyps.

**Results** The differences obtained in dielectric constant between CRC and healthy pairs are higher than in the rest of pathologies. Within the frequency region where larger differences appear, the median of this difference is 4.8 units. Differences in conductivity are lower, having a median of 2 units. By selecting a threshold in the difference of dielectric constant that maximizes the diagnostic capability of CRC, the system showed a sensitivity of 75% and a specificity of 89% for detecting this disease.

**Conclusions** Results have shown that measurements of electromagnetic properties could aid in the detection of colorectal pathologies. The variability of the results is quite large, and hence the system should be improved prior to a potential implementation.

## eP123 LYNCH SYNDROME VARIANT PATHOGENICITY; THE IMPORTANCE OF REVIEWING RISK CLASSIFICATIONS

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DOI 10.1055/s-0040-1704890

**Aims** Lynch syndrome (LS) is the commonest known cause of hereditary colorectal cancer. It is caused by pathogenic variants in the mismatch repair genes (MMR)- MLH1, MSH2, MSH6, PMS2, EPCAM. Variant classification can have a significant effect on management/surveillance choices, whether pathogenic, of uncertain significance or benign. The risk classification of these variants is not permanent and can be upgraded or downgraded over time as more information on that variant becomes available.

The aim of this study is to compare original lab classifications of the hospital cohort of LS patients with up to date classification databases.

**Methods** A retrospective anonymised gene variant analysis of LS patients from the family clinic database was performed. Specific variants in the MMR genes were identified and their risk classification determined using the CanVar UK and InSiGHT databases.

**Results** There were 100 LS patients/variants identified. Gene distribution: MSH2 = 48%, MLH1 = 31%, MSH6 = 13%, PMS2 = 8%. The testing took place in 10 different labs. Original test lab classed these variants as Pathogenic = 80 patients, VUS = 1. When the same variants are analysed using the CanVarUK database there are 25 VUS, 3 likely pathogenic. The InSiGHT database gave 7 likely pathogenic and 13 VUS results. These variants were subsequently discussed at a genetics MDM and are awaiting review by the original test lab.

**Conclusions** This study highlights the ever-evolving nature of risk classification in variant analysis. The downgrading of variants from pathogenic to VUS adds a degree of ambiguity to the patient's diagnosis. It also shows the possible discrepancies that exist between different labs.

## eP124 MISMATCH REPAIR GENE VARIATION IN A COHORT OF IRISH LYNCH SYNDROME PATIENTS

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DOI 10.1055/s-0040-1704891

**Aims** Lynch syndrome (LS) is the commonest known cause of hereditary colorectal cancer, caused by pathogenic variants in the mismatch repair genes (MMR)- MLH1, MSH2, MSH6, PMS2, EPCAM. To date little research has been published on the specific variants that exist in Ireland. Variant classification can have a significant effect on management choices, whether pathogenic, of uncertain significance or benign. Pathogenic MMR variants vary in their predisposition to causing colorectal and gynaecological cancers.

To examine the genetic variants in the LS cohort of patients from a High-Risk Family Colorectal Cancer Screening Clinic.

**Methods** A retrospective anonymised gene variant analysis of LS patients from the family clinic database. We identified the specific variants in the MMR genes and analysed their risk classification using the CanVar UK and InSight databases.

**Results** There were 110 LS patients identified, 57 male, 53 female. Gene distribution: MSH2 = 50%, MLH1 = 36%, MSH6 = 13%, PMS2 = 11%. There were 100 patients with documented variants and 34 distinct variants identified. Of these, 13 variants (38%) were identified only once each. Indications for testing included predictive = 82, diagnostic (post-cancer diagnosis = 12). There were 10 different labs used for testing.

**Conclusions** This updated data raised concerns with isolated single variants, i. e. only one variant existing in the dataset. This may be due of a lack of cascade testing within the same pedigree. Cascade testing of a pedigree should reveal multiples of the same variant. Further testing of family members may be needed to properly risk stratify the family and arrange appropriate and cost-effective GI and non-GI surveillance.

### eP125 FULL THICKNESS RESECTION DEVICE (FTRD) DISPLACEMENT AS A CAUSE OF DELAYED PERFORATION: WHEN COLONOSCOPY IS SAFE?

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**Aims** Endoscopic full thickness resection (EFTR) yields excellent resection rates for benign recurrent adenomas with non-lifting sign, submucosal lesions which are not amenable of standard endoscopic resection and advanced histopathological lesions in patients unfit for surgery. The FTRD is the only commercially available over-the-scope device designed for EFTR with a one-step clip-and-cut technique. The major complications are bleeding and perforation that appears to be mostly related to an incomplete closure of the FTRD.

**Methods** We report a case of a 82-year old man, unfit for surgery, which was diagnosed with two colonic lesions: the first (20 mm) was located in the descending colon and it was highly suspicious for advanced adenoma with non-lifting sign and centrally depressed area. The second was a sessile adenoma (80 mm) located in the transverse colon. We decided to approach with EFTR the lesion of the descending colon and then, in a second session, to perform EMR in the transverse colon.

**Results** The EFTR was safe without complications and the patient was discharged the day after. One week later, a second colonoscopy was performed to treat the lesion in the transverse colon. During the procedure abdominal distension was noted and during withdrawal maneuver the FTRD appeared to be still in position. A CT-scan showed bubbles of extraluminal air in the abdomen closed to the FTRD. The day after we revised the FTRD site and two mucosal leaks were found and successfully treated with metallic clips deployment.

**Conclusions** Our case is the first description of a FTRD dislodgment occurred one week after the EFTR, maybe due to the colonoscope passage over the device. This case raises the question of when colonoscopy is a safe procedure in a patient who has undergone an EFTR to avoid device displacement and subsequent delayed perforation.

### eP126 LONG-TERM OUTCOMES AFTER ENDOSCOPIC REMOVAL OF MALIGNANT COLORECTAL POLYPS – RESULTS FROM A RETROSPECTIVE COHORT STUDY

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DOI 10.1055/s-0040-1704893

**Aims** To investigate long-term outcomes after endoscopic removal of malignant colorectal polyps (invasion confined to the submucosa).

**Methods** This single-center retrospective cohort study evaluated outcomes after endoscopic removal of malignant colorectal polyps between 2011 and 2017. Patients with prior histology suggestive of invasive adenocarcinoma were excluded. Residual disease rate and nodal metastases after secondary surgical resection, and local recurrence rate and distant metastases in case of surveillance-only strategy were investigated. Event rates for categorical and means for continuous variables with 95% confidence intervals were calculated.

**Results** Ninety-three lesions of 89 patients (mean age 68 years [65–70 years]; 45% female) were enrolled in our tertiary-care center. Mean post-polypectomy surveillance period was 4.0 years (3.5–4.5 years). Mean lesion size was 22.4 mm (19.8–25.0 mm), 42% located in the rectum. Proportion of pedunculated and non-pedunculated lesions was equal, with en bloc resection in 84% and 42%, respectively. Resection margins, depth of submucosal invasion, tumor differentiation, lymphovascular invasion, and budding was reported in 96.8%, 45.2%, 83.9%, 12.9%, and 5.4% of cases. Twenty-seven patients (30.3%) underwent secondary surgical resection with residual disease in 9/27 (33.3%) and nodal metastasis in 2/27 patients (7.4%). Surveillance-only strategy was chosen in the remaining 62 patients (69.7%). Two patients were lost to follow-up. Forty-four patients (73.3%) underwent surveillance colonoscopy (2.1 years [1.6–2.7 years] after polypectomy): 91%, 27% and 11% presented at 1-year, 3-year, and 5-year, respectively. Local recurrence was detected in one patient (1.7%) 22 months after polypectomy. Distant metastasis was found in 1/44 patient (2.3%) who underwent cross-sectional imaging.

**Conclusions** Residual disease rate in post-polypectomy surgical specimens was higher than previously reported. Adequate patient selection and polypectomy technique are necessary to obtain specimens allowing identification of unfavorable histologic features. In case of surveillance-only strategy, incidence of recurrence was low, but adherence to surveillance needs to be improved.

### eP127 ISOLATED TERMINAL ILEITIS AT COLONOSCOPY – DOES ULCERATION PREDICT CROHN'S DISEASE?

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**Aims** Faecal calprotectin (FC) is a biomarker that is elevated in active inflammatory bowel disease (IBD). Ileo-colonoscopy is usually performed to confirm a diagnosis of IBD, but isolated non-specific terminal ileitis is often inconclusive despite biopsy. We explored the the presence of macroscopic terminal ileum (TI) ulceration in predicting Crohn's disease, over and above endoscopic terminal ileitis alone.

**Methods** Retrospective review at a London district general hospital. GI reporting tool software was used to identify all endoscopic cases of isolated terminal ileitis (i.e. normal colon) diagnosed over a 4 year period (January 2015 to December 2018). We used > 150 µg/g as a cut-off for elevated FC.

**Results** 139 cases of isolated terminal ileitis were identified. 65 cases were excluded as they were known Crohn's disease. 74 cases were included for analysis

(mean age 43.9, female 44 (59.5%)). 38 (51.4%) had a faecal calprotectin performed of which 27 (71.1%) had a FC > 150. Median CRP 4 (range 0–220).

Histology demonstrated normal mucosa in 16 (21.6%), non-specific inflammation in 45 (60.8%), ulceration 9 (12.2%) and granulomas 1 (1.4%). Macroscopic terminal ileum ulcers were present in 60 (81.1%) but only 9 of these had histological evidence of ulceration (15%). A new diagnosis of Crohn's disease was subsequently made in 15 patients (20.3%). Binary logistic regression showed an odds ratio of 1.28 ( $p = 0.016$ , CI 0.45–0.047) in the TI ulcers + FC > 150 group vs. No TI ulcers + FC < 150.

**Conclusions** 1 in 5 patients with isolated terminal ileitis are subsequently diagnosed with Crohn's disease and almost 90% of these new cases have a faecal calprotectin > 150. There is poor correlation between endoscopic and histological terminal ileum ulceration. Terminal ileal ulceration in combination with a faecal calprotectin > 150 increases the likelihood of a new diagnosis of Crohn's disease.

## eP128 CORRECT IDENTIFICATION AND REMOVAL OF HYPERPLASTIC/SESSILE SERRATED LESIONS AMONG COLORECTAL CANCER SCREENING PATIENTS

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**DOI** 10.1055/s-0040-1704895

**Aims** How accurately we identify HP/SSL during colonoscopy and how frequently these are removed.

**Methods** All the patients who have had colonoscopy as part of bowel cancer screening programme from Jan 2018 till Dec 2018, their colonoscopy reports were screened as how accurately HP/SSL were identified, we then compared endoscopy findings with the histology report.

**Results** Percentage of patient with polyps (all lesions) 61.13%

Percentage endoscopist correctly identifies HP/SSL 16.7%

Percentage of patients having HP/SSL 25.9%

Percentage of patients having HP/SSL removed during endoscopy 87%

**Conclusions** Hyperplastic/sessile serrated lesions are still under identified/decided as main concentration is on detection of adenomas. There is emerging evidence and ongoing research about these lesions being potentially premalignant especially if > 10 mm in size.

There is also a need to update endoscopy softwares across UK to include widely recognised terms using WHO criteria.

## eP129 HIGH CLEANSING EFFICACY WITH OVERNIGHT SPLIT DOSING 1 L NER1006 ACROSS BODY MASS INDEX RANGES: POST HOC ANALYSIS OF TWO RANDOMISED PHASE 3 CLINICAL TRIALS

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**DOI** 10.1055/s-0040-1704896

**Aims** We compared, per body mass index (BMI) range, the cleansing performance of 1 L polyethylene glycol NER1006 (PLENVU) versus two preparations.

**Methods** This post hoc analysis of two phase 3 clinical trials compared the efficacy of pooled PLENVU versus pooled 2 L polyethylene glycol plus ascorbate (2 LPEG) or oral sulfate solution (OSS) using overnight split-dosing. Pooling increased subgroup sample sizes. The primary efficacy endpoint was the bowel cleansing success, assessed by treatment-blinded central readers using the Harefield Cleansing Scale (HCS). Patients with no primary efficacy data were imputed as failures; the resulting estimates of efficacy were therefore conservative. Overall cleansing success and the mean number of high-quality cleansed segments per patient were calculated per BMI subgroups < 25 (under- and normal weight), 25- < 30 (overweight), and > 30 (obese).

**► Tab. 1** Overall success rates and high-quality segments per patient in all patients and by body mass index subgroup

	All patients	BMI <25: Under- and normal weight	BMI 25–30: Over-weight	BMI >30: Obese
Overall cleansing success rate (Pooled PLENVU vs 2LPEG/OSS), % (n/N)	88.6% (488/551) vs 86.2% (476/552)	89.4% (135/151) vs 87.7% (143/163)	88.2% (186/211) vs 88.4% (198/224)	88.4% (167/189) vs 81.8% (135/165)
1-sided P-value	0.328	0.3573	0.4207	0.0535
High-quality cleansed segments per patient (Pooled PLENVU vs 2LPEG/OSS), mean ± SD	2.3 ± 1.8 vs 1.8 ± 1.8	2.3 ± 1.8 vs 1.7 ± 1.8	2.3 ± 1.8 vs 1.8 ± 1.8	2.4 ± 1.9 vs 1.7 ± 1.8
1-sided P-value	< 0.0001	0.0013	0.0046	0.0013

**Results** Among 1103 included patients, the pooled PLENVU arm (N = 551) achieved a numerically higher overall cleansing success than the pooled 2 LPEG/OSS arm (N = 552) (88.6% vs 86.2%;  $P = 0.328$ ) (Table). Overall cleansing success rates were consistently high for PLENVU across BMI subgroups (range 88.2%–89.4%) and numerically higher for PLENVU versus comparator in two out of three subgroups: < 25 (89.4% vs 87.7%;  $P = 0.3573$ ), 25- < 30 (88.2% vs 88.4%;  $P = 0.4207$ ), or > 30 (88.4% vs 81.8%;  $P = 0.0535$ ). The mean number of high-quality cleansed segments per patient was significantly greater with PLENVU than 2LPEG/OSS in all comparisons ( $P < 0.005$ ).

**Conclusions** Across BMI ranges, PLENVU achieved high overall cleansing success rates similar to the overall population and comparable to 2LPEG/OSS. The greater segmental high-quality cleansing is consistent with previous reports on trial-specific assessments.

## eP130 HIGH CLEANSING EFFICACY WITH OVERNIGHT SPLIT DOSING 1 L NER1006 IN BOTH MEN AND WOMEN: POST HOC ANALYSIS OF TWO RANDOMISED PHASE 3 CLINICAL TRIALS

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**DOI** 10.1055/s-0040-1704897

**Aims** We compared, per gender, the cleansing performance of 1 L polyethylene glycol NER1006 (PLENVU) versus two preparations.

**Methods** This post hoc analysis of two phase 3 clinical trials compared the colon cleansing efficacy of pooled PLENVU versus pooled 2L polyethylene glycol plus ascorbate (2LPEG) or oral sulfate solution (OSS) using overnight-split dosing. Pooling of arms increased the sample size for subgroup analyses. The primary efficacy endpoint was the bowel cleansing success, assessed by treatment-blinded central readers using the Harefield Cleansing Scale (HCS). Patients with no primary efficacy data were imputed as failures; the resulting

► **Tab. 1** Overall success rates and high-quality segments per patient in all patients and by gender

	All patients	Male	Female
Overall cleansing success rate (Pooled PLENUV vs 2LPEG/OSS), % (n/N)	88.6% (488/551) vs 86.2% (476/552)	86.7% (221/255) vs 88.9% (263/296)	90.2% (267/296) vs 83.2% (213/256)
1-sided P-value	0.328	0.7238	0.0071
High-quality cleansed segments per patient (Pooled PLENUV vs 2LPEG/OSS), mean ± SD	2.3 ± 1.8 vs 1.8 ± 1.8	2.2 ± 1.8 vs 1.7 ± 1.7	2.4 ± 1.8 vs 1.8 ± 1.9
1-sided P-value	< 0.0001	0.0006	0.0005

estimates of efficacy were therefore conservative. Overall cleansing success and the mean number of high-quality cleansed segments per patient were calculated per gender (males and females).

**Results** A total of 1103 patients were included. The pooled PLENUV arm (N = 551) achieved a numerically higher overall cleansing success than the pooled 2LPEG/OSS arm (N = 552) (88.6% vs 86.2%; P = 0.328) (► **Table**). Overall cleansing success rates were high for NER1006 across gender (86.7%-90.2%), and, versus 2LPEG/OSS, were comparable in men (86.7% vs 88.9%; P = 0.7238) and significantly higher in women (90.2% vs 83.2%; P = 0.0071). The mean number of high-quality cleansed segments per patient was significantly greater with NER1006 than 2LPEG/OSS in all performed comparisons (P < 0.001).

**Conclusions** PLENUV achieved overall cleansing success rates in men and women of similar high magnitude as the overall population. While comparable in men, in women PLENUV achieved a greater overall cleansing success rate versus 2LPEG/OSS. The greater segmental high-quality cleansing with PLENUV is consistent with previous reports on trial-specific assessments.

### eP131 ADVANCED ENDOSCOPIC RESECTION TECHNIQUES FOR LOCAL RECURRENT COLORECTAL ADENOMAS: A SINGLE CENTER PROSPECTIVE STUDY

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DOI 10.1055/s-0040-1704898

**Aims** Local recurrence occurs in up to 20% of piecemeal endoscopic mucosal resection (EMR) and re-treatment can be technically challenging. Advanced endoscopic techniques (endoscopic submucosal dissection (ESD), endoscopic full thickness resection (FTR)) allow deep en bloc large lesion removal, thus potentially achieving oncological radicality. Our study aims to access the efficacy and safety of ESD and FTR for the treatment of recurrent polyps.

**Methods** We prospectively included all ESD and/or FTR performed for locally recurrent adenomas defined as lesions: 1) reappearing at the site that was previously treated endoscopically, 2) with convergent folds, and 3) with a

polypectomy ulcer scar nearby. Data collection included lesions size, location and histology, endoscopic technique (ESD, FTR, hybrid-techniques), early (< 48 H)/late complications, and recurrence at 3/6/12-month endoscopic follow-up.

**Results** From April 2017 to January 2019 11 patients (M/F 5/6, median age 74 yrs [IQR 69–80]) were included in the study. Recurrent adenomas had a median size of 17 mm [IQR 10–24], being mostly located in the rectum (83%). In total 12 procedures were performed: n.5 ESD (two of which performed with hybrid ESD + EMR), n.6 FTR, and hybrid ESD + FTR in one case. At histological examination eight lesions presented tubulovillous architecture, three of which with HGD; n.3 were tubular adenomas with LGD. Recurrence was not confirmed at pathology in one case, which was excluded for efficacy analysis (n.11). No major early/late complications were observed. Only one patient presented post-polypectomy syndrome resolved with medical therapy. 7/11 cases completed endoscopic assessment at 12 months with a median follow-up of 9.8 months [IQR 5–12]. Recurrence was observed in only one case three months after hybrid ESD + EMR; FTR re-treatment was performed with negative endoscopic follow-up at 3 months.

**Conclusions** In our experience advanced endoscopic techniques (ESD/FTR) performed alone or combined in one session or sequentially represent safe and effective treatment options for locally recurrent adenomas.

### eP132 MANAGEMENT OF SUPERFICIAL RECTAL TUMORS BY SUBMUCOSAL DISSECTION: A CANADIAN EXPERIENCE

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DOI 10.1055/s-0040-1704899

**Aims** Our objective is to evaluate ESD efficacy in a Canadian practice.

**Methods** Retrospective analysis of consecutive patients that underwent ESD procedure between 07/2017 and 10/2019.

**Results** 20 patients (mean age 67 yo (50–79), sex ratio = 12 H/8 F) were included. 13 tumors had a mixed granular morphology while 7 tumors had a non granular morphology. Paris classification were 0-Is (n = 8), 0-IIa (n = 3), 0-IIa + Is (n = 6), 0-IIa + c (n = 3), and had Kudo pattern III (n = 4), IV (n = 13) or V (n = 3). Average procedure time was 157 minutes (73–473). 15 (75%) of ESD resection were en bloc, 4 (20%) by fragmented endoscopic mucosal resection (EMR) and 1 (5%) by surgery. The pathology revealed 2 LGD adenoma, 9 HGD adenoma and 7 adenocarcinoma (4 intra-mucosal, 2 sm1 and 1 sm3) The average pathology tumor length was 60 mm (13–110; n = 15). An adverse event happened in 9 cases (45%): 4 perforations were treated endoscopically, 4 urinary retentions and 1 hemorrhoidal thrombosis were treated medically. Average length of hospital stay was 2,1 days (1–5). The resection was R0 and curative in 9/20 (45%). The resections weren't curative because of a positive lateral margin (5), a positive deep margin (1), ESD failure (1) or P-EMR (4). 10 patients had an endoscopic follow up (average = 37 weeks post-ESD). 1 patient had an adenoma recurrence.

**Conclusions** ESD is a difficult endoscopic technique, but it allows a good treatment of advanced rectal lesions with a low recurrence rate.

## eP133 THE ADDITION OF CASTOR OIL AS A BOOSTER IN COLON CAPSULE REGIMENS SIGNIFICANTLY IMPROVES COMPLETION RATES AND POLYP DETECTION

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**DOI** 10.1055/s-0040-1704900

**Aims** Incomplete excretion rates are problematic for colon capsule endoscopy (CCE). Widely available booster regimens perform poorly. Recently published same day CCE protocol in IBD using castor oil appeared effective. Our aim was to assess the effectiveness of adding castor oil as an additional booster in our CCE practice.

**Methods** All patients received split bowel preparation with Moviprep<sup>®</sup> prior to CCE procedures. Control booster regimen included 750 ml of Moviprep<sup>®</sup> with 750 ml of water on reaching the small bowel, a further 250 ml of Moviprep<sup>®</sup> with 250 ml of water 3 hours later and a bisacodyl suppository 10 mg after 8 hours, if not excreted. Cases followed the same regimen with the addition of 15 ml of castor oil given with booster 1. A nested case control design with 4:1 (control: case) ratio was employed. Basic demographics, completion rates, image quality, transit time and polyp detection were compared between groups, using t or chi<sup>2</sup> tests as appropriate.

**Results** 140 CCEs (mean age 60 years (19–89), 52% females, n = 73), including 28 cases have been analysed. Cases and controls were matched for age and gender. Overall CCE completion was 75% (105/140), image quality was adequate in 83% (116/140), mean transit time 3.5 hours (0.5–12.5) and a polyp detection rate of 52% (73/140).

Completion rates were significantly higher with castor oil, cases 89% (25/28) vs 71% (80/112), p = 0.03. Similarly, polyp detection rates were higher 79% (22/28) vs 46% (51/112), p = 0.001, with an OR of 4.4, 95%CI 1.65–11.64. Transit times were similar, 3 and 3.6 hours, respectively. However, image quality was significantly poorer in cases being reported as adequate in 71% (20/28) vs 86% (96/112), p = 0.03.

**Conclusions** In our cohort, castor oil addition as a CCE booster significantly improved completion rates and polyp detection. Timing of castor oil administration may need to be adjusted to optimise proximal image quality.

## eP134 AUDIT OF ESD FOR COLORECTAL MUCOSAL LESIONS AT A SINGLE CENTER FROM A REGION NON ENDEMIC FOR COLORECTAL CANCER – CLINICAL OUTCOMES AND LEARNING CURVE

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**Aims** Colorectal ESD is technically challenging and has significant learning curve. Study reports results of in-house audit of ESD's for colorectal mucosal lesions at single center and analyses learning curve for ESD at center in region non endemic for colorectal cancer.

**Methods** Retrospective analysis of prospectively maintained database of ESD by single operator for colorectal mucosal lesions over 8-years (2011–19). Database divided into 3 phases (40 each) to assess learning curve. S graphically represented using Individuals & moving Range (XmR) trend chart. Procedural-mastery to achieve consistent beneficial outcomes graphically represented using cumulative sum (CUSUM) curve.

**Results** N = 120; mean age – 58 years (5–88), 70 males (58.3%). Mean S for phases 1, 2, 3 = 4.9, 6.3, 8.2 cm<sup>2</sup>/hour respectively. Failed ESD – 4 (3.3%) (deep invasion – surgery). En bloc resection – 116/120 ((96.7%), histological R0

resection – 90/120 (75%). AE's – 17 (14.2%)- muscle injury (7), bleeding (10); treated endoscopically. AE frequency uniform in all phases. Lesion location – proximal 20, distal 42, rectum 58. Lower S (5.2 cm<sup>2</sup>/hour) for proximal than distal lesions (6.8 cm<sup>2</sup>/hour) & rectum (6.6 cm<sup>2</sup>/hour) (OR = 3.36, 95% CI-1.19 to 9.46). Repeat procedure- slower S (4.2 cm<sup>2</sup>/hour) vs naïve (6.6 cm<sup>2</sup>/hour) (OR = 3.82, 95% CI-0.39 to 37.86). Histology -pre-malignant- 89, mucosal cancer – 18, invasive cancer – 7, other – 6. Malignant – slower S (5.2 cm<sup>2</sup>/hour) vs. benign (6.3 cm<sup>2</sup>/hour) (OR = 3.92, 95%CI-1.36 to 11.30). CUSUM analysis – approximately 80 resections required for colorectal ESD mastery. Median follow up – 12 months (IQR 3–60). Recurrence – 2 (1.7%) treated by ESD -R0 resection. Late AE – stricture – 3 (2.5%) – dilatation.

**Conclusions** Audit demonstrates that ESD can be safely implemented in clinical practice in region non endemic for colorectal cancer. Adverse events infrequent and managed endoscopically. Learning curve is approximately 80 procedures. Proximal lesions and mucosal cancers were factors associated with technical difficulty.

## eP135 V ENDOSCOPIC SUBMUCOSAL DISSECTION OF LOWER RECTAL LESION EXTENDING TO THE DENTATE LINE

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**DOI** 10.1055/s-0040-1704902

We present an endoscopic submucosal dissection (ESD) of a 50 mm sessile polyp, Paris Is, 2 cm from the anal margin.

It was used the ERBE VIO3 electrosurgery unit and hybrid-knife T. The procedure begun with the injection of glycerol, indigo carmine and adrenalin. Subsequently, it was made an incision on the mucosa and then performed the submucosal dissection. Pathology confirmed clear vertical and lateral margins. The narrow lumen, the risk of hemorrhage and nerve fiber injury are some of the challenges when performing ESD near the dentate line. Nonetheless, ESD is safe and effective treating large lesions involving the dentate line.

## eP136 BOWEL PREPARATION QUALITY: A CHALLENGE FOR EVERYONE?

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**DOI** 10.1055/s-0040-1704903

**Aims** It's important to know the factors affecting an adequate bowel preparation such as co-morbidities, split-dose regimens, the overall tolerability, among others. The aim of this pilot study is to evaluate if bowel preparation quality is improved after applying enhanced instructions before colonoscopy, such as nursing phone calls, delivery of leaflets about bowel preparation and clarification of doubts for patient training.

**Methods** This is a descriptive, quantitative and cross-sectional study. In 782 patients that underwent colonoscopy at our center, between 1<sup>st</sup>-October and 31<sup>st</sup>-December 2018, we assessed bowel preparation quality using the Boston Bowel Preparation Scale (BBPS). Statistical analysis was performed with t-student and chi-square methods using the SPSS software to analyze the correlation between BBPS scores and variables (sex, age, co-morbidities, bowel preparation method and procedure starting time) that may affect the quality of bowel preparation.

**Results** Eighty-seven percent of the patients underwent the procedure in the morning and of these 39% (N = 301) had BBPS ≤ 5. 41% of the patients had poor bowel cleansing (BBPS ≤ 5) and 3% had incomplete colonoscopies due to inadequate bowel preparation. Fourteen percent of the patients with BBPS ≤ 5 had univariable modeling factors associated with a sub-optimal bowel preparation, although with no statistically difference (p > 0.05). It was found that 91%

(N = 713) used 2L PEG and did not apply the split-dose regimen. The patients of older than 50 years, 41% (N = 245) had BBPS  $\leq$  5.

**Conclusions** Despite enhanced instructions before colonoscopy, the quality of intestinal preparations was generally low. No statistical significance was observed between BBPS scores and the variables analyzed. This means that other factors and/or nursing interventions may improve the quality of bowel preparation. It is also essential to know the health literacy of populations. Patient empowerment and involvement may be a stronger contributor and will be the aim of a follow-up study.

### eP137 OUTCOMES AND SAFETY OF ENDOSCOPIC SUBMUCOSAL DISSECTION FOR LESIONS WITH SIGNIFICANT SUBMUCOSAL FIBROSIS: A CASE SERIES

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**Aims** During endoscopic submucosal dissection (ESD), submucosal fibrosis can be an additional and unexpected obstacle to technical success. This study aimed to assess the outcomes and the safety of ESD as treatment for gastrointestinal lesions with submucosal fibrosis detected during the procedure.

**Methods** All consecutive patients undergoing ESD at our center as first treatment for gastrointestinal lesions, with detection of fibrosis during the procedure, were retrospectively reviewed.

Fibrosis was classified as F0 (no fibrosis), F1 (mild fibrosis in the blue submucosal layer), F2 (whitish submucosa or severe fibrosis). Complete resection was defined as a single piece (en-bloc) resection of the targeted lesion plus histological confirmation of horizontal and vertical free margins.

**Results** Overall, 12 ESD of lesions with significant fibrosis met the inclusion criteria. Of these 4 (33.3%) were located in the colon, 3 (25.0%) in the rectum, 4 (33.3%) in the stomach and 1 (8.3%) in the esophagus. The size of the lesions ranged from 25 to 80 mm. A mild (F1) fibrosis was found in 5/12 (41.7%) lesions and a severe (F2) fibrosis in the remaining 7/12 (58.3%) lesions. Technical success of ESD with en-bloc resection was achieved in 11/12 (91.7%) of cases and, only for one rectal lesion, the procedure was converted to piecemeal EMR. A R0 resection was achieved in 10/12 (83.3%) of patients. In one case, an invasion of resection margins was present, in the other one the histological examination revealed an adenocarcinoma with deep invasion of the submucosal, subsequently referred for surgery. One perforation of the right colon, successfully treated with endoclip closure, and one mayor intraprocedural bleeding treated with hemostatic forceps occurred. No case of recurrence after a mean follow-up of 9 months were registered.

**Conclusions** Based on our experience, ESD is feasible and safe even when fibrosis is detected during the procedure.

### eP138 THE YIELD FROM POLYP SURVEILLANCE AT A BOWELSCREEN CENTRE

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DOI 10.1055/s-0040-1704905

**Aims** Colorectal cancer is the second leading cause of cancer mortality in Ireland. BowelScreen was instituted in 2012 as a cost-effective programme for reducing mortality among the asymptomatic population. As the programme expands, the number of surveillance procedures is increasing without a significant increase in BowelScreen endoscopy capacity. Audit of BowelScreen clients attending the Mater Misericordiae University Hospital (MMUH) to determine volume and yield of surveillance.

**Methods** The local BowelScreen database was used to review clients assessed at MMUH in 2018. Clients who attended for polyp surveillance were identified

and their colonoscopy report history were analysed. Reports were divided into index and surveillance and compared based on polyp number and size.

**Results** In 2018 there was a 50% rise in patients pre-assessed for surveillance colonoscopy compared to 2017 without a significant rise in index cases performed. 124 clients attended for surveillance colonoscopy. 20 patients underwent more than one round of surveillance since index giving a total of 142 colonoscopies which were included within the scope of this audit. At index colonoscopy, an average of 4.1 polyps were found with 9% being 3 cm or greater, 52% between 1 and 3 cm, 32% between 0.5 and 1 cm and 7% less than 0.5 cm. In comparison, at surveillance an average of 2.1 polyps were identified with 32% of procedures revealing no polyps, 42% showing a polyp < 5 mm and only 6% showing a polyp larger than 1 cm. No interval cancers or polyps greater than 3 cm were diagnosed at surveillance colonoscopy.

**Conclusions** Surveillance colonoscopy performed in our BowelScreen population yielded half as many polyps with a higher likelihood of smaller uncomplicated polyps. There were no interval large polyps or tumours observed at surveillance. While adenoma surveillance is important, with the growing BowelScreen cohort and limited resources, there may be a role to outsourcing these procedures to non-BowelScreen endoscopy lists.

### eP139V DOUBLE-CLIP TRACTION ESD FOR RECURRENT ADENOMA

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DOI 10.1055/s-0040-1704906

We report a case of ESD of a 15-mm recurrent adenoma of the colon, following 4-cm piecemeal EMR. The submucosa was injected without elevation of the lesion. Mucosa was incised using a Dual Knife J remote from the lesion, to identify the submucosal plane. Our previously reported double-clip traction-ESD strategy was carried out on the rectal part of the lesion, with good exposition of the submucosa and fibrotic area. Good exposure allowed for rapid and safe complete R0 ESD of a 25-mm adenoma in 10 min. DCT-ESD is efficient with a high success rate for endoscopic resection of recurrent adenomas.

### eP140V ENDOSCOPIC CHARACTERISTICS OF GORHAM-STOUT SYNDROME

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DOI 10.1055/s-0040-1704907

The syndrome is characterized by a massive generalized osteolysis, which is rapidly progressive. Interestingly, there is also a proliferation of vasculature lymphatic and vascular structures in various parts of the body. Gorham-Stout is also known as evanescent bone syndrome.

A 51-years old female presented with recurrent hematochezia and transfusion-requiring anemia. During colonoscopy a variety of vascular lesions were encountered in the terminal ileum and the entire colon, some lesions were typical vascular ectasias, whereas others appeared as varices. In some areas there were conglomerates of fibrotic mucosal tissue, which corresponded to previous bleeding areas.

## eP141V BAND ASSISTED ENDOSCOPIC SUBMUCOSAL RESECTION: A SUCCESSFUL METHOD OF TREATING SMALL RECTAL NEUROENDOCRINE TUMORS

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DOI 10.1055/s-0040-1704908

Small rectal neuroendocrine tumors are usually incidentally diagnosed, yet early treatment must be established due to the risk of distant dissemination if not resected promptly. We carry out the procedure as noted:

1. Locating the lesion.
2. Building the band system, aspirating the lesion and releasing the band.
3. Resecting the lesion positioning the polypectomy snare below the band.
4. Retrieving the tissue and inspecting the eschar, which borders we usually approximate by placing hemoclips. In our four case series, all patients had free margin resection without complications. No recurrence has been detected in 6-18 months follow-up.

## eP142 INFLUENCE OF BMI (BODY MASS INDEX) IN POLYP AND ADENOMA DETECTION IN GREEK PATIENTS; PRELIMINARY DATA

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**Aims** The association of obesity with precancerous colorectal lesions is controversial. To assess if BMI correlates to the risk of colonic polyp and adenoma occurrence in a Greek cohort undergoing colonoscopy for the first time.

**Methods** Patients who underwent colonoscopy for the first time either for screening or diagnostic purposes were retrospectively included. Patients with IBD or polyposis syndrome were excluded. Demographics, colonoscopy and histology reports, history of drug, smoking, and medical history were reviewed from 01/05/2018 to 01/05/2019. BMI was evaluated before colonoscopy and stratified according to WHO classification.

**Results** Overall, 360 patients with a mean age of 59.9±11.7 years were included. 169 patients (46.94%) were males. 94 (26.11%) had BMI ≥30, 139 (38.61%) BMI 25-29.9 and 127(35.28%) BMI< 25. The majority (83.61%) underwent colonoscopy for screening purposes. Excellent preparation was noted in most cases (87.78%). In our study polyp (PDR) and adenoma detection rate (ADR) was 79.17% (95% C.I. 74.97-83.36) and 53.09% (95% C.I. 47.65-58.52), respectively. Our analysis revealed that male gender and age>60 were strongly associated with adenoma detection (p< 0,01). BMI did not correlate with the risk of polyp or adenoma development. However, there was a positive trend for BMIs 25-29.9, p=0,06. A very low positive correlation between BMI and the number (Spearman-R=0.16, p=0,01) or the size (Spearman-R=0.10, p=0,05) of polyps per patient was found.

**Conclusions** Preliminary data of our study have confirmed the positive correlation of age and male sex with adenoma detection. Overweight patients (BMI: 25.0-29.9 kg/m<sup>2</sup>) showed a trend (p=0,06) for higher polyp and adenoma detection rate.

## eP143 CAN IT BE RECOMMENDED TO DECREASE THE AGE TO BEGIN COLORECTAL CANCER POPULATION SCREENING AT 45 YEARS OLD?

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DOI 10.1055/s-0040-1704910

**Aims** The current screening age covers 50-69 years, however, the possibility of starting screening at 45 years has been suggested from the American Society of Clinical Oncology. The objective of our study has been to evaluate the impact of this measure by comparing the endoscopic findings between the groups of subjects aged 45-49 and 50-54 years. Our working hypothesis was that patients between 45-49 years present a rate of neoplastic or preneoplastic lesions similar to the group of patients between 50-54 years old, which would justify a decrease in the age of onset of screening.

**Methods** A retrospective cohort study on an endoscopy database collected prospectively. Endoscopies performed in 2018 to subjects aged between 45-49 years were included. Those between 50-54 years were chosen as a control group. Incomplete colonoscopies, BBPS < 5, IBD, CCR high-risk patients and who with a prior history of CCR or colon polyps were excluded.

**Results** A total of 1379 colonoscopies were performed in the selected period. 396 were excluded, finally resulting 349 in 45-49 group and 734 in 50-54 group. The endoscopic findings in both groups and the comparative study is shown in table 1. In 327 patients the reason for request was an FOBT +: 15 in 45-49 and 312 in 50-54 group, with a lower detection rate of advanced pathology or neoplasia in the first group (13,3% vs 28,2%, p=0,25).

**Conclusions** 27% of subjects between 45-49 years have presented preneoplastic or neoplastic lesions. However, these findings are significantly lower than those found in the 50-54 year group. Prospective cost/benefit studies are required on the asymptomatic population before recommending the decrease of the age of access to population screening programs of CCR.

## eP144 ACUTE COLONIC OBSTRUCTION IN PATIENTS TREATED WITH PALLIATIVE INTENTION. FACTORS RELATED TO MORTALITY

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DOI 10.1055/s-0040-1704911

**Aims** To evaluate factors involved in mortality in patients who presented an acute colonic obstruction treated without curative intention. Our objective was to determine the influence of endoscopic stent.

**Methods** We performed an observational and retrospective study of patients attended in a single center for acute colonic obstruction caused by cancer between 2007 and 2014. There were only included patients with palliative intention, with metastasis at the time of diagnosis, those treated with surgery with R1-R2 resection or treated with a colonic stent. We calculated the hazard ratio of the event death.

**Results** There were included data from 165 patients with a median of follow up of 8,1 months. In ►table 1 we describe some of the basal characteristics of the patients.

At the end of the study 13 patients (7,9%) were alive. In the univariate analysis age HR 1,03 (p=0,00), Charlson score HR 0,03 (p=1,09), surgery HR 0,33 (p=0,00), residual tumour HR 3,41 (p=0,00) and chemotherapy HR 0,23 (p=0,00) were associated to mortality. In the multivariate analysis allocation of a stent,

►Tab. 1

	n (%)
M1	132 (81)
Stent	113 (68)
Surgery	97 (55)
Chemotherapy	81 (48)

surgery, absence of metastatic disease, complete resection of tumoral tissue and chemotherapy were associated with lower mortality.

**Conclusions** In our study, colonic stent placement was associated with better survival in palliative acute colonic obstruction.

### eP145 EFFICACY OF DECENTRALIZED CRC SCREENING PROGRAM

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DOI 10.1055/s-0040-1704912

**Aims** The aim of this study is to compare the results of a decentralized CRC screening program conducted by the Serbian Ministry of Health in the municipality of Zemun, Belgrade with the results of total colonoscopies performed in the University Clinical Center CHC Bezanijska kosa from January 2014 to December 2018.

**Methods** This was a retrospective observational study. The data was gathered from Zemun Municipal Health Center and CHC Bezanijska kosa.

**Results** In 2013, a decentralized CRC screening program was introduced by the Ministry of Health. Patients of ages 50-74 from Zemun Municipal Health Center GP were invited to undergo an FOBT test. Patients who tested positive were advised to undergo colonoscopy. 5727 of 6195 invited patients (92,45%) accepted to be tested.

During the first year, 52,15% of invited patients were tested (434 of 976), but after a dedicated CRC screening unit at Zemun Municipal Health Center was formed, compliance was nearly 100%. FOBT proved positive in 564 (9,85%) patients, all of whom underwent colonoscopy.

Within our endoscopy unit, 285 screening colonoscopies were performed, with the following results:

- 42 patients with carcinoma

- 118 patients with adenomatous polyps, who underwent polypectomy.

Simultaneously, 10,405 colonoscopies were performed independent of the screening program, and 592 carcinomas were found.

The majority of patients were of ages 60-69 and 70-79, with 28 patients under 50.

**Conclusions** The vast difference in number of patients examined through the screening program compared to the total number of colonoscopies performed at the hospital's endoscopy unit was attributed to non-adherence to the screening program, with majority of patients avoiding GP and going directly to the hospital.

### eP146 ENDOSCOPIC SUBMUCOSAL DISSECTION OF UPPER AND LOWER GASTROINTESTINAL LESIONS IN A SINGLE WESTERN CENTER: A DESCRIPTIVE, STEP-UP APPROACH

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DOI 10.1055/s-0040-1704913

**Aims: Background** Endoscopic submucosal dissection has been adopted in Asia and Europe. However, there is lack of data on its implementation and usefulness in the United States.

**Aims** To evaluate the development of ESD in the United States by analyzing the steps of implementation, technique and outcomes.

**Methods** Retrospective, single-center cohort study reviewing all cases in which gastrointestinal ESD was used. All procedures were performed by one therapeutic endoscopist. The following information was collected: experience of endoscopist, type of training, process of implementation, location of the lesion, indication, procedure time, and instruments used, submucosal injection solutions, adverse events.

**Results** A total of 72 ESD procedures were performed during a 2-year period. The lesions treated by ESD were located in the esophagus (n = 7, Barrett neoplasia n = 3 early squamous cell cancer n = 4), stomach (n = 21, early stomach cancer n = 5, adenoma n = 8, submucosal tumors n = 6, other n = 4), duodenum (n = 6, adenoma n = 4, carcinoid n = 2), colon n=38. The mean lesion size was 32,25mm (SD ±3,35 mm, range 10-200 mm). En bloc resection was achieved in 91,7%, with complete R0 resection in 84,7%. The median ESD procedure time was 57,35±3,16 min (range 25-120). The most frequent instruments used included the needle (hook) knife (66,7%), IT knife in 33,3%. Complications included bleeding in 9 cases (12,5%) (5 intraprocedural, 4 post-procedure, only 1 requiring blood transfusion, and 1 perforation (1,4%) (treated with clip and over-the-scope clip, respectively).

**Conclusions** A structured approach to implementation and use of ESD in a USA center demonstrated that ESD was safe and efficient, reflecting current experience of other large centers in Europe and initial experience in Japan and Korea.

### eP146\_1 LOW PREVALENCE OF COLORECTAL NEOPLASIA IN MICROSCOPIC COLITIS: A PROSPECTIVE, MULTICENTER STUDY

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DOI 10.1055/s-0040-1704914

**Aims** Microscopic colitis (MC) is the most frequent condition in subjects undergoing ileocolonoscopy for chronic non bloody diarrhea (CNBD) in Western countries. Emerging evidences have shown a negative association between MC and colorectal cancer. We designed this prospective multicentre study to determine whether the risk of colorectal neoplasia differs significantly between MC and non-MC patients receiving for the first time ever colonoscopy with high-definition and dye-less chromoendoscopy for chronic non bloody diarrhea (CNBD) of unknown origin

**Methods** Patients with CNBD of unknown origin were prospectively enrolled for ileocolonoscopy with high-definition and digital or optical chromoendoscopy plus multiple biopsies in each segment in five referral centres in Northern Italy. The prevalence of colorectal neoplasia (cancer and resected adenoma or serrated lesion) in MC was compared to that observed in a control group negative for MC, inflammatory bowel disease or eosinophilic colitis.

**Results** From 2014 and 2017, 546 consecutive patients with CNBD were recruited. Among the 492 patients (mean age 53±18 years) fulfilling the inclusion and exclusion criteria, MC was the predominant diagnosis at the histopathological assessment (8.7%). The risk of colorectal neoplasia in MC patients was sharply lower than in non-MC CNBD subjects (odds ratio = 0.39; P ≤ 0.01).

**Conclusions** This multicenter study confirms MC as a low risk condition for colorectal neoplasia. No surveillance colonoscopy program should be performed for the diagnosis of MC.

The inflammatory pathways reflecting this protective effect against colorectal carcinogenesis should be now investigated.

## eP147V PREVENTION OF DELAYED BLEEDING AFTER ENDOSCOPIC PAPILLECTOMY: A RETROSPECTIVE STUDY

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DOI 10.1055/s-0040-1704915

**Background and Aim** Endoscopic papillectomy is a minimally invasive therapy for duodenal ampullary adenoma. We evaluated clip closure method for the prevention of delayed bleeding retrospectively.

**Methods** 53 Patients with ampullary adenoma who underwent endoscopic papillectomy were enrolled from 2012 to 2019. The incidence of adverse events and risk factors for delayed bleeding were evaluated using univariate analyses.

**Results** Delayed bleeding occurred in 7 patients. Sufficient closure using clips was a significant factor for the prevention of post-EP delayed bleeding (p=0.010).

**Conclusions** Ulcer closure after endoscopic papillectomy using clips should be used for the prevention of delayed bleeding.

## eP148 A COMMON BILE DUCT (CBD) STONE FORMED AROUND A SUTURE MATERIAL AFTER OPEN CHOLECYSTECTOMY: A CASE REPORT

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DOI 10.1055/s-0040-1704916

**Aims** Among the numerous and various known predisposing factors, has been shown that the use of non-absorbable suture materials in hepatobiliary surgery, can expose patients to the risk of iatrogenic stones formation in the CBD. We described a rare case of CBD stone formation around a migrated nidus of non-absorbable prolene suture, after open cholecystectomy.

**Methods** We observed a 51 years-old female admitted in Surgical Department, with a one-month medical history of intermittent episodes of right upper quadrant abdominal pain associated with jaundice. Open cholecystectomy and Kehr's T-tube insertion in CBD had been performed seventeen years earlier. In our Unit of Digestive Endoscopy, ERCP was performed three days after admission, and was demonstrated a large filling defect suggestive of a stone floating into a dilated

CBD. After endoscopic sphincterotomy, a large stone was removed using papillary large balloon dilation and subsequent guided EHL in the course of peroral cholangioscopy with SpyGlass Direct Visualization System. The fragments of crushed stone were removed successfully and recovered using a Dormia basket and a retrieval balloon catheter. At an initial macroscopic examination, the removed stone was dark brown-colored, with irregularly shaped and filament-like threads projecting from it, formed for induced and progressive crystallization of bile salts around a nucleus of a non-absorbable prolene suture.

**Results** The hypothesis of possible phenomena such as chronic compression of surrounding tissues, ischemical damage and gradual erosion, are the basis of suture material's migration in the lumen of CBD.

**Conclusions** The iatrogenic cause of CBD stone formation is mainly due to migration of foreign bodies such as surgical metallic clips, retained tubes or non-absorbable suture materials. Prolene has been widely used in hepatobiliary surgery, and in the literature, stone formation related to this kind of suture material is relatively uncommon but possible. Appropriate management requires timely identification and ERCP.

## eP149V A NOVEL TECHNIQUE FOR TREATMENT OF HEPATICOJEJUNOSTOMY STRICTURE IN A PATIENT WITH ALTERED ANATOMY

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DOI 10.1055/s-0040-1704917

**Aim** The aim is to report this case of laparoscopically assisted ercp, technical challenges in a patient with hepaticogastrostomy stricture.

**Methods** A 55 year old post whipple's surgery female presented with hepaticogastrostomy stricture with a stone above it. Site couldnot be reached by routine ercp. Hence planned for lap guided ercp.

**Results** HJ site was identified laparoscopically and enterotomy was done proximally. Endoscope was introduced thro 12mm port in the jejunum and hj site was identified.

Guidewire placed and balloon dilatation and trawling done.

**Conclusions** Its a newer cost effective technique in a patient with altered anatomy.

## eP150 ANATOMIC VARIATIONS OF PANCREATICOBILIARY UNION

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DOI 10.1055/s-0040-1704918

**Aims** This study was designated to evaluate the frequency of anatomic variations of the pancreaticobiliary union of Kosovo people and assessed the frequency and pattern of variations and anomalies of these structures.

**Methods** Our research was observational, comparative and analytical. The investigation was conducted from January 2016-May 2017. This study included 63 patients from Clinic of Gastroenterology and Hepatology - Prishtina, assessed pancreaticobiliary union with Magnetic Resonance cholangiopancreatography.

**Results** Union of the common bile duct and the major pancreas was biliary-pancreatic type The angle between common bile duct and the major pancreas duct had different sizes average 35.6°. We did not distinguish significant statistical significance in the size of the pancreaticobiliary angle. In men, the union angle was from the average 36.9°, while in females was average 34.3°. No correlation between the age and size of the angle between common bile duct and the major pancreas duct. The union of the common bile duct and the major pancreas duct was in most cases B-P Type. The common channel and angle between common bile duct and the major pancreas duct were normal in most cases.

**Conclusions** A knowledge of normal pancreaticobiliary ductal structures as well as the frequency and pattern of variations including anomalies is essential for the diagnosis and treatment of pancreaticobiliary disorders.

### eP151 ENDOSCOPIC MANAGEMENT OF DUODENAL PERFORATION SECONDARY TO EARLY MIGRATION OF BILIARY PLASTIC STENT

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**Aims** A 76-year-old woman with lung metastases and obstructive jaundice due to hilar cholangiocarcinoma was treated by a sphincterotomy and the insertion of a biliary plastic stent (BPS) (10F/12 cm). Two days later, she presented a duodenal perforation due to the displacement of the inserted BPS. In this context, therapeutic possibilities were valued (surgery or endoscopic treatment?)

**Methods** After discussing the case with the surgeon, it was decided to try closing the duodenal perforation by endoscopy. A distal cap was placed in the gastroscope tip. First, the plastic biliary stent was removed and then, the duodenal wall was closed with 3 clips. No duodenal contrast leak was noticed in Radiologic control. Finally, a self-expanding biliary stent was placed.

**Results** Steps: Removal of BPS/endoscopic closure of the duodenal wall (clips) using distal cap/Check for absence of duodenal leak/Placement of a self-expanding biliary stent.

**Conclusions** This endoscopic management allowed the duodenal perforation closure and the placement of a self-expanding biliary stent, with the resolution to both problems (perforation and jaundice), thus surgical intervention was avoided.

### eP152V BILIOBRONCHIAL FISTULA: RARE COMPLICATION OF HEPATIC HYDATIDOSIS

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**DOI** 10.1055/s-0040-1704920

**Introduction** The biliotoracic fistula is a fearsome complication of the hydatid cyst ruptured in the thorax because of the lung and hepatic injuries. Its frequency is according around 2.5 to 16%.

**Methods** We report the case of a 42-year-old gentleman admitted in the emergency department for management of biliptysis.

**Result** the diagnosis of a right Bronchobiliary fistula was retained. The treatment was at first endoscopic sphincterotomy and then an exclusive thoracotomy surgery to treat pulmonary and hepatic Hydatid disease and to repair diaphragm.

**Conclusion** Endoscopic sphincterotomy remains a key step in the management of biliobronchial fistulas with massive biliptysis.

### eP153 CLINICAL SIGNIFICANCE OF BILE JUICE AND UPPER GASTROINTESTINAL ENDOSCOPIC FINDINGS, BEFORE PERFORMING ERCP

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**Aims** An impacted bile duct stone is a risk factor for developing acute suppurative cholangitis (ASC). No study has classified biliary obstruction caused by impacted bile duct stones into complete and incomplete obstruction. Complete obstruction would show no bile juice on esophagogastroduodenoscopy (EGD), and it is more likely to be accompanied with ASC than with incomplete obstruction.

**Methods** We evaluated 191 patients who underwent EGD within 24 hours before endoscopic retrograde cholangiopancreatography (ERCP) for acute calculous cholangitis from January 2012 to August 2016 at Konyang University Hospital. Patients were divided into groups: bile juice present in the stomach or duodenum on EGD (bile (+) group) and no bile juice present (bile (-) group). The presence of biliary pus on the following ERCP was analyzed. We divided patients into acute suppurative calculous cholangitis (ASCC) (n=26) and acute nonsuppurative calculous cholangitis (ANSCC) groups. Predictive markers for ASCC were analyzed.

**Results** Fifty-five patients (41%) presented with no bile juice on EGD. In 21 patients (27.3%) of the bile (-) group and 5 (4.4%) of the bile (+) group (p<0.01), pus could be seen during ERCP. The absence of bile juice on EGD (odds ratio [OR] for ASCC: 6.170, 95% confidence interval [CI]=1.858-20.495) and total bilirubin (OR for ASCC: 1.232, 95% CI=1.058-1.436) were independent predictive factors for ASCC.

**Conclusions** The absence of bile juice on EGD and high total bilirubin level can be predictive markers for ASCC. Performing EGD before ERCP to evaluate the presence of bile juice can be beneficial to predict ASCC and determine the timing of biliary drainage.

### eP154 CHEMICAL ABLATION OF GB WITH PURE ETHANOL AND ENDOBILIARY RFA FOLLOWED BY ENDOSCOPIC BILIARY STENT PLACEMENT IN AN ADVANCED INOPERABLE CASE OF CBD CANCER

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**Aims** To remove the percutaneous transhepatic gallbladder drainage (PTGBD) catheter in a patient with an inoperable common bile duct cancer.

**Methods** We performed endobiliary RFA for such an unresectable CBD cancer. RFA was performed twice for 2 min at 5 W each. We placed the partially covered biliary stent against the narrowed CBD after performing endobiliary RFA. Subsequently, we removed the PTBD catheter. After performing two cycles of chemical ablation of GB using 5 cc of pure ethanol at 1-week intervals, PTGBD catheter was also removed.

**Results** Finally the patient did not have any complications, such as jaundice or cholecystitis, for 3 months.

**Conclusions** Doing endoscopic RFA before placing the biliary stent and subsequent chemical ablation of GB using pure ethanol could be alternative palliative option in a patient with far advanced GB or bile duct tumors.

## eP155 ERCP USING BALLOON-ASSITED ENTEROSCOPY IN PATIENTS WITH GASTRECTOMY AND RECONSTRUCTION ROUX-EN-Y: CASE SERIES

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**Aims** Gastric anatomy that is modified by surgery, is a challenge for the realization of a retrograde endoscopic cholangiopancreatography (ERCP). Difficulties consist of the identification of the bile loop, the papillary orifice, cannulation of the papilla and sphincterotomy/sphincteroplasty. In the case of Roux-en-Y reconstruction, balloon-assisted enteroscopy is the best endoscopic option although the success rates of this technique are not very high.

To review the cases of ERCP carried out by balloon enteroscopy in patients of our center.

**Methods** Series description of patients with Roux-en-Y reconstruction who needed ERCP between 2015-2019. We analyzed the type of technique, success, and complications.

**Results** We collected 8 patients, mean age 79 years (60-91). All of them had choledocholithiasis. 50% of the patients had a previous biliary colic pain. 12.5% were cholecystectomized. In 7 of them, the surgery reason was gastric adenocarcinoma, with Roux-en-Y reconstruction (6 patients with subtotal gastrectomy and 1 patient with total gastrectomy). The other case involved a Whipple surgery secondary to a IPMN with hepatic-jejunal anastomosis. The average time of the ERCP was 113 minutes (60-150) and there was a complication (mild pancreatitis). In all cases, a single-balloon Enteroscope was used and a papillary balloon dilation was made. The initial success rate was 75 %, with a total success rate of 100%. In two cases, it was not possible to cannulate the bile duct, in a first ERCP, being obtained in a second attempt during the same admission, using the same method.

**Conclusions** The single-balloon Enteroscopy for the treatment of choledocholithiasis in patients with modified gastric anatomy in our center has demonstrated a high rate success, efficacy, and safety, avoiding biliary surgery.

## eP156V PERCUTANEOUS ENDOSCOPIC NECROSECTOMY USING A FULL COVERED SEMS IN A PATIENT WITH WALLED-OFF NECROSIS

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**Aims** Stent-assisted percutaneous endoscopic necrosectomy is recognized as a main treatment for the WON.

**Methods** A 37-year-old man presented with peripancreatic necrosis. CT scan demonstrated a huge WON involving the pancreatic body, peripancreatic space, extending to the left pericolic space. A full covered self-expanding metal stent (20mm x 12cm) was placed across the abdominal wall. Necrosectomy using upper endoscope via the FCSEMS was performed. Basket, snare and alligator forcep were applied for necrosectomy.

**Results** The conventional upper endoscope was smoothly inserted into the sinus tract for necrosectomy.

**Conclusions** Endoscopic necrosectomy via FCSEMS is a useful and safe modality in WON.

## eP157 ACUTE PANCREATITIS AS A RARE COMPLICATION OF RUPTURE OF HYDATID LIVER CYST

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**Aims** The purpose of our work is to show the interest and outcomes of the management of liver hydatid cyst complicated with acute pancreatitis.

**Methods** It is a retrospective series including 16 patients admitted for hydatid cyst of liver with acute pancreatitis at the department of hepato gastroenterology between January 2013 and July 2018.

**Results** The average age of our patients was 44.33 years [20; 66] with a female predominance. Only 12.5% (n = 2) of the patients had past history of surgical cure of liver hydatid cyst. All patients had acute pancreatitis associated with cholangitis. Abdominal CT scan showed edematous pancreatitis in 87.5% (n = 14) and the necrotizing pancreatitis in 12.5% (n = 2). The common bile duct (CBD) was dilated in all patients and the kystobiliary fistula was identified in 68.75% (n = 11). ERCP was performed for all our patients, cholangiography showed filling defect in distal CBD and a communication between intra-hepatic biliary duct with the hydatid cyst. Sphincterotomy was performed with evacuation of membranes in 87,5%.

**Conclusions** Acute pancreatitis is an exceptional complication of hydatid liver cyst. It is often associated with cholangitis. The ERCP combined to surgery remain the key of the treatment.

## eP158 CLINICAL OUTCOME OF ERCP IN HULL UNIVERSITY TEACHING HOSPITALS NHS TRUST

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**Aims** Endoscopic retrograde cholangiopancreatography (ERCP) is predominantly performed as therapeutic procedure and carries substantial risk of complications when compared to other endoscopic procedures. British Society of Gastroenterology(BSG) in conjunction with Joint Advisory Group(JAG) for Gastrointestinal Endoscopy has recommended quality and safety guidelines for ERCP procedure. The purpose of audit was to compare our local ERCP practice to nationally agreed.

**Methods** This was a retrospective audit between 01/08/2018 and 31/01/2019. Data was collected from local endoscopy reporting system and clinical information system.

**Results** Total 173 patients underwent ERCP in 6 months. Average age was 69 years (range 18-96) while female to male ratio was 1.05(89 vs 84). CBD calculi was the most common indication (85%). Decompression of the intended duct was successful in 90% of the cases. Adverse events were reported in 9.2% (16/173) of the cases with post-ERCP pancreatitis been the most common complication i-e 5.7% (10/173). No perforation occurred. 2 patients died with in 30 days of the procedure (1 Severe Necrotising Pancreatitis, 1 Biliary sepsis). 8 days re-admission was 6.3%(11/173). Per rectal NSAIDs after ERCP was only given in 55% of the cases. Post-ERCP pancreatitis was more common among patients who did not receive NSAIDs (i-e 6/76) at the time of ERCP compared to those who was given per rectal NSAID (i-e 4/97). 15%(27/173) of the patients were on anticoagulant/anti-platelets at the time of procedure which were all managed appropriately as per recommendations.

**Conclusions** Therapeutic success of ERCP and adverse events are similar to nationally reported. Variation in use of post-ERCP NSAIDs use was noted which has been highlighted to standardise practice.

## eP159 11 YEARS FOLLOW UP (2008 TO 2019 OCTOBER) OF MANAGEMENT OF PATIENTS OF CHRONIC PANCREATITIS WITH DUCTAL DISRUPTION WITH FLUID COLLECTIONS

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**Aims** A retrospective analysis of our data of management of pancreatic cysts and fistulas in patients of chronic pancreatitis using no contrast technique with guide wire as the only guide.

**Methods** In cases of effusions and ascites with chronic pancreatitis, the fluid was tapped completely, fluid amylase and MRCP performed. Pseudocysts not aspirated. ERP performed, MPD or minor papilla cannulated, guide wire placed into duct bypassing the leak or in cyst if not traversing the leak. No contrast injected in any case. We excluded 7 cases done before this study where contrast injection led to severe sepsis. Pancreatic papillotomy done, 5 Fr single pigtail stents placed in cases of leaks and double pigtail stents placed if cysts rained. Results observed. Stents were kept insitu for three to six months and then removed or exchanged for larger diameter if stricture noted.

**Results** Total ERP: 1324

Leaks and pseudocysts: 321 (24.2%) - Ascites: 60 (18.7%)

Effusions: 34 (10.6%)

Pseudocysts: 227 (70.7%)

Technical Success: 301 (93.7%)

Failed Cannulation: 20 (6.2%)

**Leaks and Fistulas: 94**

Possible crossing leak: 81 of 94 (86.2%)

Failure to cross leak: 13 of 94 (13.8%) - Stents Placed till leak with response 8 of 13 (61.5%)

EUS Guided Drainage: 5 of 13 (38.5%)

**Pseudocysts: 227**

Transpapillary drainage in cysts: 194 (85.4%)

Stents in the cysts with response: 151 (77.8%)

Stents cross leak in cysts: 43 (22.2%)

EUS aspiration needed after stenting: 19 of 43 (44.1%)

Transmural Drainage after stenting: 8 of 43 (18.6%)

Transmural Drainage in failed ERP: 33 of 227 (14.5%)

Pancreas Divisum: 24 of 321 (7.5%)

**Conclusions** ERP is feasible and the treatment of choice in majority of cases of leaks due to chronic pancreatitis. Stenting till the area of leak and placing stents trans papillary in cysts gives excellent results. EUS Guided Transmural drainage is the option when ERP fails.

## eP161V CHOLANGIOSCOPY-GUIDED RADIOFREQUENCY ABLATION FOR BENIGN STRICTURE OF UNCOVERED SEMS

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DOI 10.1055/s-0040-1704928

We present a case of female patient born 1941. She had a cholecystectomy more than 10 years ago with surgical CBD lesion treated by percutaneous insertion of two SEMS. During last 5 years she experienced several cholangitis requiring ERCP and biliary drainage by plastic stents due to SEMS obstruction. We performed intraductal radiofrequency ablation using Habib Endo HPB bipolar RFA catheter (setting 10W, duration 2 × 60 s). Spyglass DS was used for initial and post procedure stricture evaluation and removal of necrotic tissue in between two steps of the RFA. Patient is free of biliary obstruction during 3month follow up.

## eP162 ENDOSCOPIC TREATMENT OF POST-CHOLECYSTECTOMY BILE LEAKS: A TERTIARY CENTER EXPERIENCE OF 100 CASES

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DOI 10.1055/s-0040-1704929

**Aims** Post-cholecystectomy bile leak is relatively a well-known surgical complication. Several potential treatment modalities for such leaks are used. The early use of ERCP to exclude significant bile-duct injury and to treat the leak by various endoscopic means is supported by a large bulk of data. However, there is no consensus as to the optimal endoscopic intervention.

**Methods** A retrospective review of ERCP database was done to identify all cases of bile leak related to cholecystectomy. Patient records including surgical and endoscopic reports were reviewed, and telephone interviews were conducted to collect data.

**Results** During the period 2004-2016, 100 patients (53 men, 47 women; mean age, 55 years) with post-cholecystectomy bile leak were referred for ERCP. Cholecystectomy was done laparoscopically in 82 patients (with an open conversion rate of 13%). In the majority of cases (77%), the leak was diagnosed by on going bile flow from the drains. The most common symptoms were pain (17%) and fever (4%). The most common site of the leak was the cystic-duct stump (79%) followed by the Duct of Luschka (7%). Low grade leaks were seen in 84% of cases. Treatment included stent insertion alone (9%), sphincterotomy alone (11%), combination stent/sphincterotomy (76%) and others (1%). Failed ERCP was encountered in 3%. Endoscopic therapy was successful in 90 patients (90%). In subgroup analysis, success rate of procedures with stent insertion (with or without sphincterotomy) is significantly higher compared to procedures without stent insertion (95.3% vs 72.7%, p<0.05). The failure rate of sphincterotomy alone procedures (3/11, 27%) is much higher compared to procedures with stent insertion (4/85, 5%) with p<0.05. Four patients (4%) developed post-ERCP pancreatitis (mild to moderate) and one patient (1%) suffered from retroperitoneal perforation.

**Conclusions** The optimal endoscopic intervention for post-cholecystectomy bile leak should include temporary insertion of a biliary stent.

## eP163 STENT-ASSOCIATED CHOLANGITIS FOLLOWING ENDOSCOPIC BILIARY STENT PLACEMENT - PREDICTIVE FACTORS AND OUTCOMES

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DOI 10.1055/s-0040-1704930

**Aims** Cholangitis is a rare complication in patients with biliary stents and is associated with a mortality rate of 5-10%. The present study aims to evaluate predictive factors of cholangitis after biliary stent placement

**Methods** Retrospective cohort study, consecutively included all patients undergoing ERCP with biliary stent placement between 2015 and 2018. Stent associated cholangitis (SAC) was defined as need for further intervention (ERCP, CPT or surgery) or by clinical criteria of acute cholangitis in patients with biliary stents. The following parameters were evaluated: indication (stenosis, malignant obstruction, choledocholithiasis, acute cholangitis, biliary leak), previous cholecystectomy, previous sphincterotomy, presence and location of strictures, size and caliber of the prosthesis, serum bilirubin variation and time to SAC.

**Results** 110 patients were included, with a mean age of 72±15 years, most female (51%; n=56). The most frequent indications were choledocholithiasis in 44.5% (n=49) and acute cholangitis 31.8% (n=35). The majority were patients without prior sphincterotomy (80%; n=88) and no cholecystectomy (64.5%; n = 71). In most cases plastic (91.8%, n = 101) pigtail (62.7%, n = 69) stents were placed. The median caliber was 7Fr (AIQ-3) and the length 4cm (AIQ-2). The median total bilirubin at the time of ERCP was 2.4mg/dL (AIQ-4,8mg/dL). In 62.7% (n=69) bilirubin normalization occurred after stent placement.

SAC occurred in 20% (n=22), with a median of 24.5 days (AIQ-82) after stent placement. In 45.5% (n=10) there was no need for reintervention and in 40.9% (n= 9) ERCP was repeated. There was a significant association between SAC and presence of anatomic biliary stricture ( $p < 0.001$ ) and choledocholithiasis ( $p = 0.040$ ).

**Conclusions** Patients at increased risk of SAC include those with an anatomic stricture, and choledocholithiasis. Future protocols may reduce the risk of cholangitis in these patients.

### eP164 ENDOSCOPIC RETROGRADE CHOLANGIOPANCREATOGRAPHY IN PATHOLOGYLITHIASIS: WHAT RESULTS IN PATIENTS OVER THE AGE OF 75?

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**DOI** 10.1055/s-0040-1704931

**Aims** In front of an increasingly aging population, the ERCP raises the question of benefit in the elderly. So we set ourselves the goal of comparing ERCP results in lithiasis pathology in elderly patients respectively less and more than 75 years old.

**Methods** retrospectiv descriptive and analytical study (May 2002 to November 2018).924 patients with ERCP for a lithiasic pathology. groups: I : younger than 75 years, and II : over 75 years old. a descriptive study of the characteristics of the elderly population, and a comparative analytical study of the results between the two groups concerning the success rate and the rate of complications.

**Results** The group II:10.1%, age:80.17 ± 5.43 (75 to 96), sex H / F ratio 0.9. 67.3% had no surgical history significant, 28.7% were cholecystectomized, and 4% antecedent of endoscopic biliary sphincterotomy.

1.1% had acute pancreatitis and 23.7% in acute cholangitis . Radiologically, the average diameter of the VBP was 15.2 ± 4.2mm. Choledochal stones were found in 37.8%, a large calculus in 10.9% . An SBE has been performed in 94.1% . The vacuity of VBP was obtained in 61.4% in group II, compared to 78.4% in group I ( $p < 0.001$ ), use of laborers additional endoscopy was 30.7% in group II, compared to 18.3% only in group I ( $p = 0.003$ ). The overall success rate was 85.2% in group II, compared with 92.5% in group I ( $p = 0.012$ ). The rate of early complications was 6.9% compared to 6% in group I, with no statistically significant difference ( $p = 0.48$ ).

**Conclusions** Although the overall success rate remains better in the young patient, the results of ERCP in lithiasis pathology in the patients aged over 75 years remainsatisfactory, with no statistically significant difference in terms of complications early ERCP.

### eP165 ERCP FOR THE TREATMENT OF BILIARY COMPLICATIONS FOLLOWING CHOLECYSTECTOMY

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**DOI** 10.1055/s-0040-1704932

**Aims** The purpose of this study is to evaluate the usefulness and efficacy of endoscopic treatment of biliary complications in patients undergoing cholecystectomy, as illustrated by decades of data.

**Methods** During the 01/2009 - 12/2018 period, 4,360 ERCPs were performed in our department. We selected and studied retrospectively cases with complications after cholecystectomy. We evaluated mainly patients with postoperative biliary leak and biliary stenosis. Patients with choledocholithiasis found after cholecystectomy were not included in the study unless coexisting with the above conditions. All data were retrieved from patients' files and electronic records.

**Results** A total of 78 ERCPs (1.8%) were performed in 54 unique patients for biliary complications following cholecystectomy. Patients range in age from 27 to 90, with relatively equal gender distribution (25 men, 29 women). The vast majority of patients (47 patients) presented with leakage. Of these 47 patients, 4 exhibited complete transection/discontinuation of the bile duct and in 4 biliary stenosis coexisted. Finally, there was 1 patient that ERCP (duct cannulation) failed. Thus, a total of 16 patients presented with biliary stenosis (4 postoperative stenosis and leak, 4 leakage and complete duct transection, 3 obstructive jaundice due to stenosis and 4 complete obstruction of duct). Patients with bile leakage: 30/47 (63%) presented with cystic duct leak, 6/47 (12%) had underlying choledocholithiasis (undetected at baseline evaluation) and 7/47 (15%) patients required more than one session. The success rate is > 85% (46/54).

**Conclusions** Endoscopic treatment of postoperative complications of cholecystectomy is possible and very effective and is accompanied by very high success rates. However, multiple sessions/hospitalizations are often required, and in cases such as the complete duct transection the solution remains surgical.

### eP166 ERCP ADVERSE EVENTS: RARE CASES

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**DOI** 10.1055/s-0040-1704024

**Aims** Adverse events in ERCP are relatively rare (2,5-8%) but often life threatening. Many guidelines are published in order to minimize complication rate. Still some adverse events are hard to predict and prevent. The aim of the study was to analyze the ERCP complication rate and pay attention to rare ones.

**Methods** From the period from 2013 to 2019 1080 ERCPs were done. As pancreatitis prophylaxis octriotide infusion was performed before and after manipulation. Pancreatic stent placement was performed in cases of multiple pancreatic duct cannulation. Diclofenac per rectum as a hospital standard of care was started from the beginning of 2019, results were not included.

**Results** We experienced 41 complications (3,8 %), the most frequent complication was pancreatitis with or without subsequent necrosis (n=12, 1,1%). Bleeding after papillotomy occurred in 11 cases (26,8 %), in 9 (81,8%) cases endoscopic hemostasis was effective. Perforations happened in 7 cases (0,65%). In 2 cases endoscopic closure by clips with biliary duct stenting was effective. Two infrequent perforations occurred. Once perforation of the bulbous duodeni occurred after the duodenoscope dislocation, no information in the literature of such type of perforation was found. In one case common bile duct (CBD) perforation by the guidewire was found 2 days after the procedure with no leak signs on control X-ray. Subcapsular hematoma occurred in patient after postcholecystectomy CBD stricture bouginage with sudden dislocation of bougie. Remarkably, contrast leakage on fluoroscopy during the procedure was found on the left lobe but hematoma 14,4x4,0x4,8 cm in size visualized in the

right liver lobe. Patient was treated conservatively and discharged after organization of hematoma.

**Conclusions** Even experienced team in big hospital should be ready to manage not only common complications but also with rare ones. Attention and post-procedural patient monitoring play a critical role as well as multidiscipline communication in patient management.

### eP167V CHOLANGIOSCOPIC FOLLOW-UP OF A SURGICALLY RESECTED INTRAHEPATIC BILIARY TYPE INTRADUCTAL PAPILLARY MUCINOUS NEOPLASM (BT-IPMN)

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DOI 10.1055/s-0040-1704933

A 54-year-old woman with episodes of acute cholangitis secondary to a mucus containing liver cyst communicating with the biliary system, underwent right hepatectomy (segments IVb-VIII) with hepaticojejunostomy to the common hepatic duct.

Histology revealed a BT-IPMN with high grade dysplasia and suspicion of positive margins. Therefore, cholangioscopy with the SpyGlass DS system was performed to assess possible residual disease.

The common bile duct, the hepatic ducts (common, right and left) and the hepaticojejunal anastomosis were visualized. Neither papillary lesions nor intraductal mucus were noted. Of note, the cholangioscope gained easily access into the intestinal loop through the anastomosis.

### eP168 AGGRESSIVE HYDRATION FOR PREVENTING POST ERCP PANCREATITIS: A SYSTEMATIC REVIEW AND META-ANALYSIS

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DOI 10.1055/s-0040-1704934

**Aims** Periprocedural intravenous hydration is suggested to decrease the risk of post-ERCP pancreatitis (PEP). However, quality of evidence remains poor. We performed a systematic review with meta-analysis to assess the hypothesis that aggressive hydration (AH) could be an effective preventive measure.

**Methods** Pubmed, EMBASE-, Google Scholar, were searched through January 2019 to identify randomized controlled studies comparing AH to standard hydration (SH) for prevention of PEP. Pooled odds ratio (OR) and 95% confidence intervals (CIs) were calculated using the random-effects model. RevMan 5.3 was used for analysis. Outcomes were incidence of PEP, incidence of Hyperamylasemia, incidence of abdominal pain, adverse event rate, and length of stay

**Results** A total of 9 RCTs (5 full text and 4 abstract), with 2094 patients, were included. AH had a lower incidence of PEP compared with SH (OR 0.44 95%CI 0.28-0.69). The rate of post ERCP hyperamylasemia was lower in the AH group (OR 0.51 95%CI 0.34-0.77) and length of stay was reduced in the AH group (MD -0.89 -1.36-, -0.43). No significant difference emerged in adverse events related to fluid overload between two groups (OR:1.29; p 1/4 0.81) and post-ERCP abdominal pain (OR:0.35; p 1/4 0.17). Numbers of patient to be treated with AH to prevent one episode of PEP was 17.

**Conclusions** Aggressive hydration is associated with a significantly lower incidence of PEP and it appears to be an effective and safe strategy for the prevention of Post ERCP pancreatitis.

### eP169 A COMPARISON OF NKS VS TPS FOR DIFFICULT CANNULATION: A SYSTEMATIC REVIEW AND META-ANALYSIS

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DOI 10.1055/s-0040-1704935

**Aims** The timing of the precutting intervention is important for reducing the complications. The number of transpapillary cannulation attempts and that of pancreatic duct cannulations are two of the most important factors contributing to PEP. The aim of our study was to assess the efficacy and safety of needle knife sphincterotomy (NKS) compared with transpancreatic septotomy (TPS)

**Methods** we searched multiple databases (Medline, Embase, Cochrane) to identify RCTs comparing the role of NKS vs TPS in patients with difficult cannulation. Outcome measures were the risk of PEP, cannulation rate and adverse events. Fixed and random models were used as appropriate. Heterogeneity was assessed by measuring I<sup>2</sup>.

**Results** we identified 5 RCTs for a total of 903 patients respectively randomized to TPS (551) and to NKS (352). No difference emerged in the rate of PEP (OR 0.62 95%CI 0.21-1.88), nor in adverse events (OR 1.71 95%CI 0.60-4.87), and in successful cannulation rate (OR 1.70 95%CI 0.60-4.79).

**Conclusions** There is no increased risk of PEP in the NES group compared to ES before stent placement in patients with distal malignant biliary obstruction. According to our data, ES is not mandatory. However, due to the small number of patients and the study heterogeneity more RCTs are required before a firm recommendation could be made

### eP170 IS THE DIVERTICULAR PAPILLA A FACTOR IN THE FAILURE OF CATHETERIZATION OF THE MAIN BILE DUCT IN LITHIASIS PATHOLOGY? EXPERIENCE OF A MOROCCAN DEPARTMENT

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DOI 10.1055/s-0040-1704936

**Aims** The duodenal diverticula are frequent (6 to 20%), and they preferentially sit in the papillary region and are called juxta-, peri-para-papillary or valerian. The latter may be a difficulty in the catheterization of the main bile duct and are more common in cases of associated cholelithiasis.

The objective of our study is to calculate the prevalence of juxta-papillary diverticula (JPD) in patients with VBP lithiasis and evaluate their influence on the success rate of main bile duct catheterization in lithiasis pathology.

**Methods** This is a retrospective study conducted from April 2004 until April 2019. There were included 846 patients having benefited from an ERCP for lithiasis of the main bile duct. The presence or absence of a juxta-papillary diverticulum has been noted. We compared the success rate of catheterization of the main bile duct in patients with juxta-papillary diverticulum (group I) versus patients without diverticular disc (group II).

**Results** The mean age of the patients was 58 ± 13 years, 515 women and 331 men (sex ratio H/F: 0.64). Patients with a diverticular disc (group I) accounted for 9.6% of the patients included (81 patients). Group II consisted of 765 patients (90.4%). The success rate of the main bile duct catheterization was 96.4% in group II versus 86.5% in group I (p: 0.007). The overall rate of early complications was 6% in group II versus 7.4% in group I (p = 0.12).

**Conclusions** The presence of a PDI appears to significantly decrease the success rate of the main bile duct catheterization in lithiasis pathology without

increasing the risk of early complications. Prospective studies with large series, however, remain necessary to confirm these results.

### **eP171 EFFECTIVENESS AND SAFETY OF COVERED SELF-EXPANDING METAL STENT IN BENIGN BILIARY STENOSIS DUE TO CHRONIC PANCREATITIS: OBSERVATIONAL RETROSPECTIVE STUDY**

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**DOI** 10.1055/s-0040-1704937

**Aims** To analyze the technical, clinical success and the complications associated with the placement of cSEMS in benign biliary stenosis secondary to CP in our center.

**Methods** Retrospective study between January 2012 - December 2018. Epidemiological and analytical variables were analyzed, also data from endoscopic procedure (stent residence time, technical complications, related incidents) and clinical (percentage of recurrences/surgical indications).

Technical success was defined as the correct placement and withdrawal of the cSEMS during the ERCP and clinical success as an analytical improvement (normalization of bilirubin) at 6 months post-withdrawal of the cSEMS.

Stent residence time (patent) was defined as the time in days from stent placement to withdrawal (scheduled, by occlusion/migration or by surgical intervention).

**Results** 37 cSEMS were included in 20 patients (85% men; mean age 52.55).

The mean basal bilirubin was 5.34mg/dL. In 75% of the patients, cytology and/or stenosis biopsy was performed during ERCP, with no evidence of malignancy. However, in 2 cases the stenosis later turned out to be of malignant etiology.

Technical success was 100% in stent's placement and removal. There were 25 complications (67.27%), with obstruction and proximal migration being the most frequent complications.

The average residence time of the stent was 305 days. The average bilirubin at 6 months post-stent withdrawal was 1.17mg/dL, achieving clinical success in 70% of cases. 10% required surgical intervention due to recurrence of stenosis.

**Conclusions** The placement of cSEMS for the treatment of benign biliary stenosis due to chronic pancreatitis is an effective and safe method that can be considered as an alternative to the placement of multiple plastic prostheses.

Our series consists of patients of habitual clinical practice, in which we have observed a clinical success rate of 70%, similar to previous data reported in multicentre trials with clinical success rates between 47-66% in post-withdrawal periods between 3-12 months.

### **eP172 DO ENDOSCOPIST NEED TO BE MORE AWARE OF THE RULES AND RISKS OF RADIATION DURING ERCP?**

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**DOI** 10.1055/s-0040-1704938

**Aims** The aim of this survey was to assess knowledge, practice and attitudes of ERCP endoscopists towards the use of fluoroscopic X-ray radiation.

**Methods** An online survey was shared through social media to endoscopists to assess knowledge, practice and attitudes towards the use of radiation by ERCP endoscopists.

**Results** 100 endoscopists completed the survey (55% trainees, 45% trainers). 50% of endoscopists were up to date with their radiation protection and hygiene course. 59% were not aware of the European basic safety directive for radiation safety. 39% of endoscopists regularly wear protective goggles, 82%

regularly wear thyroid protection. 39% of endoscopist know their average screening time.

**Conclusions** There needs to be improvement in the knowledge and attitudes towards the use of radiation by ERCP endoscopists. Without improvement there is increased risk to harm to both health care professionals and patients associated with radiation exposure.

### **eP173 DO CIRRHOTIC PATIENTS HAVE HIGHER RISK OF COMPLICATION FOLLOWING ENDOSCOPIC RETROGRADE CHOLANGIOPANCREATOGRAPHY? A SINGLE CENTER STUDY**

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**DOI** 10.1055/s-0040-1704939

**Aims** Endoscopic retrograde cholangiopancreatography (ERCP) is one of the most important procedures in the diagnosis and treatment of pancreaticobiliary disease. However, there is still insufficient data on the complication rate of ERCP in patients with liver cirrhosis (LC). The aim of this study was to investigate the rate of complications following ERCP in cirrhotic patients.

**Methods** A total of 51 patients with liver cirrhosis having CBD stones, who underwent ERCP at Yeungnam University Hospital from 2006 to 2017, were reviewed retrospectively and compared with age- and sex-matched non-cirrhotic patients (n=102). Clinical outcomes and the rate of complication were investigated.

**Results** Of 51 LC patients, Child-Pugh class A was 24 (47.1%), B, 16 (31.4%) and C, 11 (21.6%), respectively and the number of decompensated LC was 30 (58.8%). The rate of endoscopic sphincterotomy was higher in non-LC patients (76.5% vs. 58.8%, p=0.038) and the rate of balloon dilatation was higher in LC (41.2% vs. 22.5%, p=0.027). There was no statistical difference regarding pancreatitis, cholangitis and perforation between two groups. The incidence of bleeding in cirrhotic patient was significantly higher than in non-cirrhotic group (17.6% vs 4.9%, p=0.023) and in particular, immediate bleeding rate was higher in LC (13.7% vs. 2.9%, p=0.028). The rate of complications in patients with LC was not significantly different regardless of Child-Pugh score or the presence decompensated liver.

**Conclusions** Cirrhotic patients have a significant bleeding risk following ERCP procedure compared with non-cirrhotic patients. A large, prospective study is needed for elucidating the further outcomes of ERCP in cirrhotic patients.

### **eP174V THE SUMP SYNDROME: AN UNUSUAL CAUSE OF ACUTE CHOLANGITIS**

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**DOI** 10.1055/s-0040-1704940

Sump syndrome is recognized as a rare and long term complication of biliary enteric anastomosis. It results from the reflux of biliary and enteric contents into the distal segment of the common bile duct leading to biliary and or pancreatic complications. We report the case of a 90-years-old woman who presented to our department with an acute cholangitis. Her past medical history included a cholecystectomy with side-to-side choledochoduodenostomy performed 30 years ago. Imaging showed pneumobilia and a grossly dilated bile ducts. She was successfully treated by ERCP with multiple food debris and stones extraction as described in the video case.

### eP175 PREDICTORS OF COMPLICATION RELATED TO PLASTIC BILIARY STENT PLACEMENT SECONDARY TO CHOLEDOCHOLITHIASIS: A SINGLE-CENTER RETROSPECTIVE COHORT STUDY

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DOI 10.1055/s-0040-1704941

**Aims** ERCP with plastic biliary stent placement is considered as an alternative to surgery in cases of failed removal of common bile duct stones. Current guidelines recommend that it should be removed or replaced within 3–6 months to prevent complications. The primary aim of this study was to identify factors related to the development of stent-related complications such as stent migration, stent occlusion and cholangitis.

**Methods** This is a single-center retrospective cohort study of patients who underwent ERCP with plastic biliary stent placement secondary to choledocholithiasis from January 1, 2010 to September 30, 2019 at University of the East Ramon Magsaysay Memorial Medical Center, Inc. Statistical comparisons were made using one variable Chi-square test and Student T-test with a level of significance of  $\alpha = 0.05$ . Correlational analyses were performed using Spearman's correlation and Multivariate logistic regression analysis.

**Results** A total of 90 subjects were included in the study (mean age = 52 years). Seventy-seven percent (77%) underwent elective stent evaluation, while 23% had on-demand stent evaluation either due to signs of sepsis or biliary obstruction. The mean interval duration to elective and on-demand stent evaluation were 6.4 months (SD = 10.8, 95% CI 3.9–9.0) and 11.3 months (SD = 11, 95% CI 6.6–16), respectively. Several variables (age, gender, number of retained stone and interval duration to stent evaluation) were analyzed to identify factors related to the development of complications. Stent placement of > 3 months duration was found to be an independent predictor for developing complications (OR 7.9, 95% CI 1.9, 32.7,  $p$ -value = 0.01). Spearman's correlation showed a strong positive correlation between interval duration to stent evaluation and development of stent-related complications ( $r_s = 0.71$ ,  $p < 0.001$ ).

**Conclusions** We recommend stent evaluation after 3 months of plastic biliary placement secondary retained common bile duct stone to prevent development of stent-related complications.

### eP176V DUODENAL CHOLECYST FISTULA: UNUSUAL PRESENTATION OF GALLBLADDER CANCER

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DOI 10.1055/s-0040-1704942

80 year-old female was sent to our service for obstructive jaundice. Began 6 months ago with: abdominal pain, jaundice, dark urine, weight loss of 8 kg. Total bilirubin 7  $\mu\text{mol/L}$ . Abdominal ultrasound: common bile duct 12 mm.

ERCP duodenal stenosis, Cavity with bile-like material and purulent content was observed. Biopsies were taken.

**Abdominal CT scan** Abscessed vesicular neoplasia.

**Histopathological report** Well-differentiated adenocarcinoma of the gallbladder.

**Conclusions** Gallbladder cancer is an uncommon disease, early diagnosis is essential for improved prognosis; however, indolent and nonspecific clinical presentations like this clinical case leads to misdiagnosis.

### eP177 PERCUTANEOUS TRANSHEPATIC CHOLANGIOSCOPY (PTC) USING THE SPYGLASS SPYSCOPE SYSTEM FOR STRICTURES OF THE COMMON BILE DUCT

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DOI 10.1055/s-0040-1704943

**Aims** Bile duct strictures are challenging conditions that require a multidisciplinary approach involving gastroenterologists and radiologists. Endoscopic retrograde cholangiopancreatography (ERCP) is an important diagnostic and therapeutic tool for the evaluation of these strictures but is challenging in cases of gastrectomy and Roux-en-Y reconstruction. When conventional ERCP fails, common bile duct (CBD) strictures could be managed with percutaneous transhepatic cholangiography (PTC). The combination of PTC and cholangioscopy using the Spyglass system (Boston Scientific Inc., Massachusetts, USA) could provide a better tool to establish diagnosis and treatment.

**Methods** Three patients were referred to our department after a failed ERCP due to subtotal gastrectomy and Roux-en-Y reconstruction for evaluation of common bile duct strictures. CBD stenosis was revealed during PTC for treatment of recurrent cholangitis due to localized strictures. In collaboration with our interventional radiology department, we performed percutaneous transhepatic cholangioscopy using the Spyglass system to visualize the stricture, obtain tissue specimens, establish diagnosis and apply treatment. The Spyglass system was inserted, via percutaneous transhepatic way, then progressed throughout the biliary tree to the more proximal branches and finally to the common bile duct.

**Results** The mean age of the patients was 78 years old. Both technical and clinical success was 100% (3/3). Cholangioscopy revealed localized lesions of CBD with villous appearance without neovascularization. Histopathological analysis revealed a localized inflammatory reaction, a presence of an hyperplastic polyp and a fibrotic stricture, without evidence of malignancy in all patients. A fully covered metal stent (8 mm x 60 mm) was successfully applied to one of the patients.

**Conclusions** Percutaneous transhepatic cholangiography can resolve diagnostic dilemmas when conventional access to the biliary tree is impossible, as for example in cases of subtotal gastrectomy and Roux-en-Y reconstruction. The addition of Spyglass system improves the diagnostic accuracy and provides additional clinical benefit to histopathological assessment for the diagnosis and treatment of biliary strictures.

### eP178 ERCP TREATMENT OF BILIARY COMPLICATIONS AFTER LIVER TRANSPLANTATION IN MEXICO

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DOI 10.1055/s-0040-1704944

**Aims** Evaluate and compare the effectiveness, safety and long-term outcomes of endoscopic treatment of biliary complications after liver transplant at a National referral center in Mexico.

**Methods** Retrospective review of liver transplant recipients who underwent Endoscopic Retrograde Cholangiopancreatography (ERCP) after liver transplant between October 2015 and June 2019. Demographic data, indications for liver transplant, surgical technique employed, reason to perform an ERCP, number of procedures, complications, and technical, clinical and overall success rate were documented.

**Results** Between October 2015 and June 2019, eighty-eight deceased donor liver transplants were performed at National Medical Center November 20<sup>th</sup> in Mexico City. There were 20 (23%) biliary related complications, 11/20 were female, median age was 55 years old (IQR 48–59). Complete hepatectomy and piggyback technique was used in all procedures. Median time from surgery to first endoscopic treatment was 3 months (IQR 2–10). Overall success rate for stenosis was achieved in 67% (12/18), 22% (4/18) are still under endoscopic biliary rehabilitation and in 11% (2/18) endoscopic management was deemed unsuccessful. Median time for biliary rehabilitation was 8 months (IQR 5–12), requiring a median of 3 procedures per patient (IQR 1–3). Self-expandable fully covered metal stents presented more migration rate when compared with plastic stents (44 vs 9%). Morbidity was present in 7% of patients and no mortality was documented.

**Conclusions** ERCP has proved to be safe and effective in the treatment of biliary complications in Mexican liver transplant recipients.

### eP179V CHOLANGIOSCOPY-GUIDED LITHOTRIPSY OF CYSTIC DUCT REMNANT STONES

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DOI 10.1055/s-0040-1704945

Male with past history of Billroth II and cholecystectomy. He presented with biliary colic due to remnant cystic duct lithiasis which was resolved with cholangioscopy and EHL.

### eP180 NATIONAL RUSSIAN REGISTRY OF CHOLANGIO-PANCREATOSCOPY: MULTI-CENTER ASSESSMENT OF THE FIRST EXPERIENCE OF USING THE DIGITAL SINGLE-OPERATOR ENDOSCOPY OF BILIARY AND PANCREATIC DUCTS

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DOI 10.1055/s-0040-1704946

**Aims** To evaluate possibilities and adverse events of diagnostic and therapeutic indirect peroral cholangiopancreatography (POC) at the stage of implementation in Russia, using the national registry.

**Methods** From 06.12.2017 to 01.11.2019 in 4 clinics in Krasnodar (2), Moscow and St. Petersburg 109 interventions were performed in 101 patients (m-32, f-69; 27–89 years; average age 50.1±12.4 years) using SpyGlass DSsystem (BSC):84 cholangioscopies, 24 pancreaticoscopies and 1 cholangiopancreatocopy. The indications for cholangioscopy were: undifferentiated strictures (53), large stones (18), suspicion for Mirizzi syndrome (3), 'difficult strictures', after failure of cannulation under X-ray control (6), postoperative benign strictures (4); for pancreaticoscopy -pancreatic duct strictures, suspicious of malignancy (7) or IPMN (4), the need to introduce the guidewire under visual control (6) and large wirsungolite (6); for cholangiopancreatocopy – assessment of the spread of major papilla tumor on bile and main pancreatic duct (1).

**Results** The overall technical success was 91.7% (100/109). Intraductal biopsy was successfully performed in 43/44 (97.7%) cases. Histological confirmation of the diagnosis of cholangiocarcinoma was obtained in 25/43 (58.1%) cases; in other 18/43 (41.9%) cases the strictures were benign. Therapeutic interventions were performed in all 40 cases (laser lithotripsy of bile duct stones – 7, electrohydraulic

lithotripsy of bile duct stones – 11 and of pancreatic duct stones – 6, guidewire placement under visual control and further stenting – 12, removal of ligatures and clips of bile duct – 4). We had 3/101 (2.97%) complications – acute pancreatitis (2) and cholangitis (1). There were no deaths related to POC.

**Conclusions** The main indications for endoscopic peroralintraductal interventions are various types of undifferentiated and complicated strictures of the biliary tree and pancreatic ducts, as well as the 'difficult' bile and pancreatic duct stones. The technology of endoscopic interventions using the SpyGlass system is simple for ERCP specialists with comparable level of complications due to traditional transpapillary interventions.

### eP181 DIAGNOSTIC YIELD OF BRUSH CYTOLOGY AT ERCP FOR BILE DUCT STRICTURES

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**Aims** Commonly brush cytology samples are obtained from bile duct strictures during ERCP. According to a recent meta-analysis, their sensitivity to exclude cancer ranges 40%-50% with a specificity of 98%-100% (Gastrointest Endosc 2015). Our aim was to perform a clinical audit evaluating the diagnostic utility of brush cytology samples from patients undergoing ERCP due to bile duct strictures in our institution.

**Methods** All patients who underwent ERCP in 2002–2018 due to obstructive jaundice and were found to have a bile duct stricture from which brush cytology samples were obtained were retrospectively enrolled. Cytology results were reviewed and classified as a.non-diagnostic, b.negative for malignancy, c. atypia, d.suspicious for malignancy, or e.positive for malignancy. Diagnosis of cancer after cyto- or histopathology obtained in other procedures or clinical follow-up after a 12-month period served as the diagnostic gold standard.

**Results** A total of 84 specimens were obtained from 79 patients (median age 72, 56% male). Overall, 37 samples(44%) were negative for malignancy, 15 (18%) showed atypia, 9(11%) were suspicious and 21(25%) were positive for malignancy. Two samples were non-diagnostic(2%). A final diagnosis of pancreaticobiliary cancer was put in 53(67%) (gold standard). Considering suspicious specimens as negative for malignancy, the sensitivity and specificity of brush cytology was 39%(95%CI, 25%-53%) and 94% (95%CI, 80%-99%), respectively. Considering suspicious specimens as positive, sensitivity was 55%(95%CI, 37%-73%) and specificity 90%(95%CI, 82%-98%).

**Conclusions** The observed sensitivity(39%-55%) and specificity(90-94%) of brush cytology from bile duct strictures is in line with the current literature. The relatively low specificity may be attributed to specimen-processing pitfalls, or errors upon cytopathology review. To increase the diagnostic yield of brush cytology, we proposed the use of processing methods such as Thinprep, including a more detailed patient history with relevant imaging findings in the cytopathology referral, and using international nomenclature in the cytopathology report.

### eP182 TREATMENT STRATEGY OF POST-ERCP COMPLICATIONS

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DOI 10.1055/s-0040-1704948

**Aims** To analyze the results in treatment of post-ERCP complications.

**Methods** The retrospective study was held at the Pirogov Russian Medical University. The complications of endoscopic transpapillary interventions occurred

at the Moscow City Hospital #31, Moscow, Russian federation, from January 1<sup>st</sup> 2008 to November 1<sup>st</sup> 2019 were retrospectively evaluated.

There were 6257 endoscopic transpapillary interventions performed at the hospital. The morbidity rate was 1,5% (93), mortality rate – 0,22% (14). There were 16 (0,26%) cases of post-endoscopic papillotomy (EPT) bleeding, 52 (0,83%) cases of post-ERCP pancreatitis (PEP) and 25 (0,4%) cases of retroduodenal perforation.

**Results** Combined endoscopic hemostasis included epinephrine infiltration of the EPT margins and focal electrocoagulation of bleeding source in all 16 cases of post-EPT bleeding.

Pancreatic duct stenting was performed in 31 (59,6%) cases with technical success in 29 (93,5%) cases and clinical success in 28 (96,5%) cases. We reported 1 (3,5%) observation of PEP progression after stenting that lead to death. The mortality rate in non-stenting group was 23,8% (5/21).

An endoscopic treatment of ERCP-perforation was performed in 17 (68%) of 25 cases with success in 16 (94,1%) cases and mortality rate 5,9%. None of conservatively treated patients died (3 patients), while the mortality rate in surgically treated group after ERCP-perforation was 80% (4/5). So, the mortality rate in the group after ERCP-perforation was 24% (6/25).

**Conclusions** Treatment of patients with post-ERCP complication is a challenge. It is absolutely essential to remember about all possible risk factors, strictly follow the indications for ERCP, and clearly perform the technique of procedure to reduce the morbidity rate. We are stuck to the opinion that it is important to eliminate the post-ERCP complications endoscopically, because surgical treatment has a higher postoperative mortality rate and increases the duration and cost of treatment.

### eP183V PERCUTANEOUS CHOLANGIOSCOPY AN INSTRUCTIONAL VIDEO

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Gastroenterologists are increasingly being asked to perform ERCPs on patients with altered surgical anatomy, particularly bariatric patients whom have had gastric bypass surgery. In these patients retrograde biliary access may be difficult or impossible and percutaneous trans-hepatic access may be appropriate. This allows cholangioscopy access for the direct visualisation or management of calculi and the assessment of strictures.

Here we describe the equipment and set-up necessary to perform percutaneous cholangioscopy.

### eP184 PERCUTANEOUS TRANSHEPATIC CHOLANGIO DRAINAGE (PTCD) FOR MALIGNANT BILIARY STENOSSES – THE ONCOLOGIC OUTCOME IN A GERMAN TERTIARY CENTER

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DOI 10.1055/s-0040-1704950

**Aims** For more than 50 years, PTCD remains a palliative treatment option for patients with malignant biliary stenoses where ERCP fails. With this retrospective analysis, a closer look on the oncologic outcome of patients after PTCD drainage was taken. A primary endpoint was the ability to receive or return to a point where chemotherapy was possible again.

**Methods** Between 2014 and 2018, we conducted a retrospective analysis of patients with benign or malign bile duct stenoses at the University Medical Center Göttingen. General patient characteristics as well as procedure related data, PTCD success, laboratory results and mainly achieving chemotherapy were collected. A cut off bilirubin of 5 mg/dl was set for safe chemotherapy application.

**Results** A total of 147 patients received PTCD placement for benign (n = 38) or malign biliary stenoses (n = 102) at the University Medical Center Göttingen (90 m, 57 w). In seven patients, diagnosis was unclear. Causes for malignant stenoses were pancreatic head cancer (n = 34), Cholangiocellular carcinoma (n = 29), ampullar carcinoma (n = 6) and metastases of distant tumor entities (n = 23). Main reasons for benign stenoses were bile duct stones (n = 12) and stenosing biliodigestive anastomosis (n = 6). At the end of our analysis, 27 patients were alive. After PTCD placement, 58 patients with malignant stenoses experienced sufficient serum bilirubin regression and initiation or a return to chemotherapy was possible (56%). 42 patients with malignant stenoses received best supportive care (41%). 30d mortality after PTCD was 9.5% (n = 14/147 patients). Mean overall survival after PTCD for both entities was 123.19d. 5 patients died due to causes directly related to PTCD (3.4%).

**Conclusions** This retrospective analysis shows that chemotherapy after PTCD for malignant biliary stenosis was possible in 56%. Main reasons for PTCD placement are patients with non accessible bile ducts via ERCP due to pancreatic head cancer or cholangiocellular carcinoma. Prospective data are missing so far.

### eP185 STANDARD OF ERCP IN A GENERAL HOSPITAL: A UK PERSPECTIVE

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DOI 10.1055/s-0040-1704951

**Aims** To assesses ERCP practice at a general hospital and compare it with the standard UK Key Performance Indicators.

**Methods** At our centre, we conducted a retrospective descriptive and analytical study, we analysed all ERCP procedures data from the hospital-based registry carried out during the period (2016, 2017, and 2018), and reviewed information related to patients demographics, clinical data and post-procedure adverse effect.

**Results** Total number of cases during the study period was 588: 97.6% (n = 574) cases were done under conscious sedation, while 2.3% (n = 14) cases were done under general anaesthesia (GA).

Male/female 41% (n = 241)/59% (n = 347). Age range (17–99) years while mean 71.7 ± 15.8 years.

Physical health was assessed via ASA score; more than half of our cohort was classified as ASA II 53.9% (n = 317), while the rest was distributed as follows ASA 0 4.6% (n = 27), ASA I 21.6% (n = 127), ASA III 16.2% (n = 95), ASA IV 3.7% (n = 22).

Deep cannulation was achieved in 97.4% (n = 573), procedure was successfully completed in 93.2% (n = 548), incomplete procedure was 4.25% (n = 25), and failed 2.5% (n = 15). Mean sedation score for Midazolam for age below 70 was (3.2 mg), while for above 70 was (2.3 mg). Regarding Fentanyl for age below 70, the mean score is (81.8 mg), while above 70, the score was (57.84 mg), and mean comfort score was (2.5). Antibiotic for incomplete decompression of bile duct was given in 100%.

Complications: Pancreatitis was 2.9% (n = 17), no patient had serious bleeding requiring blood transfusion, perforation rate 0.34% (n = 2), and mortality related to the procedure 0.17% (n = 1).

**Conclusions** ERCP requires higher level of training to be performed safely, effectively and to achieve Standard UK key performance indicators. ERCPs carried out at our hospital were well tolerated, with an excellent outcome, and acceptable side effect profile, which is on par with Key performance indicators dictated by the BSG, ASGE, and ESGE.

## eP186 COVERED SELF-EXPANDABLE METAL STENTS FOR THE TREATMENT OF ERCP-RELATED PERFORATIONS: RESULTS FROM SINGLE CENTER EXPERIENCE FROM DISTRICT HOSPITAL IN JAPAN

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**Aims** Perforation is one of the most feared complications of ERCP. The treatments for ERCP-related perforation are diverse, depending on the location and mechanism of the perforation and the time of diagnosis. Covered self-expandable metal stents (CSEMS) has become a therapeutic option to seal perforation and prevent entry into the perforation site. The purpose of this study was to assess the safety and efficacy of CSEMS for the treatment of ERCP-related perforations.

**Methods** Between November 2011 and April 2019, consecutive 8 patients (2 men, 6 women, mean age 75.5 years, range, 67 – 87 years) who underwent CSEMS placement for ERCP-related perforations were enrolled in this study. We used 8–12 mm in diameter, 6 cm long, CSEMS (fully CSEMS in 7 patients and partially CSEMS in 1). We reviewed endoscopic and medical records of these patients to collect the following data: patients demographics, indications for ERCP, causes and sites of perforation, CSEMS removal, treatment outcomes and adverse events.

**Results** Indications for initial ERCP were choledocholithiasis in 6 patients and malignant biliary strictures due to pancreatic cancer in 2. Causes of perforation were endoscopic sphincterotomy in 5 and one case each of needle knife papillectomy, catheter and guidewire. Perforation sites were perivaterian in 7 and common bile duct in 1. In all patients except one, perforation was recognized during or immediately after the procedure. After placement, there were no need for surgery and median time to post-operative feeding was 6 (1–13) days. CSEMS were removed in 6 patients with choledocholithiasis after a median time of 16 (10–61) days with grasping forceps or polypectomy snare without any complications. Adverse events related to CSEMS placement were cholangitis in 1 and inward migration in 1. There were no procedure-related deaths.

**Conclusions** CSEMS placement is effective in patients with ERCP-related perforations. However, attention should be paid to the procedure-related complications.

## eP187 SINGLE CENTER EXPERIENCE OF ENDOSCOPIC PAPILLECTOMY

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**Aims** Operative endoscopy have significantly impacted the clinical approach to the patients with ampullary tumors. Pancreaticoduodenectomy or transduodenal papillectomy have been performed to treat ampullary tumors. However, endoscopic papillectomy (EP) is becoming the procedure of choice in the selected group of patients.

**Methods** 46 patients with ampullary tumors who underwent endoscopic papillectomy between 2014 and 2019 were reviewed. 27 women (58,7%) and 19 men (41,3%). Mean age 53 ±27y.o. Selection criteria for EP were: tumor diameter less than 4 cm, no endoscopic evidence of malignancy and no intraductal infiltration more than 1 cm.

Papillectomy was performed in snare technique. Submucosal injection was performed only for the lateral spreading components of the tumor. For lesions not resectable “en block”, a piecemeal was performed. In case of any residual tissue, it was obligatorily resected. Pancreatic stent was routinely placed in order to reduce risk of acute pancreatitis. Hemostasis was performed if needed

**Results** Papillectomy was successfully performed in all 47 cases (one patient underwent EP twice). En block resection was completed in 26 cases (55%), piecemeal resection in 21 (45%). Pancreatic stent was successfully placed in 33 cases (70%). Postoperative complication rate is 27.6 %, including bleeding (8 cases, 17%), perforation (3 cases, 6%), acute pancreatitis (2 cases, 4.2%). All of the episodes of bleeding were resolved endoscopically; episodes of acute pancreatitis were treated conservatively. One patient with perforation was treated using minimally invasive techniques, two patients underwent surgery. Procedure related mortality rate is 4.2 % (2 cases). Local recurrence rate occurred in 1 case (2.1%), patient underwent second endoscopic papillectomy. Histopathology reported adenocarcinoma in 5 cases (10%), neuroendocrine tumor in 1 case (2.1%)

**Conclusions** Endoscopic papillectomy is effective treatment for ampullary tumors in the selected group of patients. Regardless considerable morbidity rate, most of them can be managed conservatively or endoscopically

## eP188 COMPLICATIONS OF ENDOSCOPIC RETROGRADE CHOLANGIOPANCREATOGRAPHY (ERCP)

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**Aims** To determine the incidence of ERCP complications.

**Methods** A descriptive retrospective study for 32 months, at the Mohammed VI Oujda University Hospital, which included 512 ERCP procedures. All the patients had an abdominal X-Ray at the end of the procedure and close clinical monitoring for 24 hours, with biological control. The diagnosis of post-ERCP acute pancreatitis has been made using the diagnostic criterias.

**Results** During the study period, 512 ERCPs were performed for 400 patients, there was a female predominance 62%, with an average age of patients of 64 years, the indications are dominated by lithiasis pathology 68.1%, followed by tumor pathology 23.7%. Acute pancreatitis was the most common complication in 4.9% of ERCPs with predictive factors: the pancreatic duct cannulation and/or its injection with the contrast, difficult of common biliary duct cannulation, the pancreatitis was severe in 60% and mild the in 40%. All patients had rehydration and an analgesic treatment adapted Post-ERCP cholangitis was observed in 2.5% of cases, with a good progression with antibiotics. Digestive bleeding in 1.2% of cases (n = 6) Endoscopic hemostasis in a single patient by injection and clip placement at the margins of the sphincterotomy, perforation was suspected in 8 patients (1.5%), of which 4 patients were managed surgically, on the breach was only objectified as perioperative in 2 patients. No cases of death related to ERCP.

**Conclusions** ERCP is an invasive technique, its complications are well known and must be systematically researched and managed early in order to improve the prognosis.

## eP189 ENDOSCOPIC MANAGEMENT OF FISTULISED HYDATID CYST IN THE BILE DUCTS

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**Aims** To precise, the role of ERCP in the management of fistulised hydatid cysts in the bile ducts.

**Methods** A retrospective and descriptive study was carried out over 3 years, including all patients who have had an ERCP for fistulised hydatid cyst in the bile ducts.

**Results** 570 ERCPs have been conducted in 3 years, 17 cases was included; the indication was fistulised hydatid cyst in the bile ducts. The mean age was 44 years (25–62 years) with a female predominance (64.7 %), 58.8% was originated from rural backgrounds; three patients have had a history of liver hydatid

cyst surgery while one patient had a percutaneous treatment 2 months before. 76.4 % of patients presented with cholangitis. The Abdominal ultrasound showed the hydatid cyst and an intrahepatic biliary dilatation. Sectional imagery (CT scans or MRI) were realized for all patients showing intra hepatic dilatation in 94.1 of cases, CBD dilatation in 82.3% of cases and intraluminal material in the CBD in 35.3% of cases. ERCP was realized for all patients, before surgery for 13 patients and after surgery for 4, retrograde catheterization of the CBD was realized in all cases. The opacification showed a dilatation of the CBD in 70.5% of cases and a disparity of the caliber of the CBD in one case while the hydatid cyst was opacified in one case (5.8%), Sphincterotomy was realized in all cases, the extraction of the hydatid material was conducted with a balloon in 94.1% of cases and with a dormia in one case. In 58.8% of cases, hydatid membranes and/or vesicles were observed. No post ERCP complications were observed with a clinical and biological improvement post intervention.

**Conclusions** The results of our study confirm the efficiency and safety of ERCP in the management of ruptured hydatid cysts in the bile ducts.

### eP190V ENDOSCOPIC PAPILLECTOMY WITH CLOSURE OF THE DEFECT USING NEW RUSSIAN CLIP DEVICE

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DOI 10.1055/s-0040-1704956

The aim is to show the method of decreasing the risks of complication after endoscopic papillectomy. 68-year-old female was treated. Duodenoscopy and ultrasonography showed protruding tumor of papilla, size 3.0 × 1.5 cm. without invasion of the duodenal muscularis propria and no ductal infiltration. Papillectomy and pancreatic duct stenting was done, the resected area was checked and the resection defect was closed with 4 hemostatic clips 2 mm distal of stented pancreatic duct. No complications. Using the method of clip closure decrease postoperative bleeding and perforation. Advanced endoscopic equipment allows closing the resection defect, what decreases risks of complication development.

### eP191V GIANT AMPULLOMA, RESECTION WITH HOT SNARE POLLIPECTOMY AND CLOSING WITH SHORT STEM CLIP

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DOI 10.1055/s-0040-1704957

A 59-year-old woman underwent a routine gastroscopy showed a 5 cm polypoid lesion in papillary area. Performed a piece-meal resection in 2 pieces and recovered for histological examination. Pancreatic duct cannulated and 5F×7 cm plastic stent placed. Bile duct cannulated and common bile duct dilatation of 12 mm without pathologic content and placed a 10 F×5 cm plastic stent, with spontaneous bile outflow. After resection 2 visible nonbleeding vessels, placing a short stem clip in one and 2 large stem clips in the other and injecting adrenalin. Long stem clips can unwittingly release when using the duodenoscopy elevator system. 9 months follow-up without lesion recurrence.

### eP192 EFFICACY AND SAFETY OF A NEW ENDOSCOPIC BILIARY ACCESS TECHNIQUE

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DOI 10.1055/s-0040-1704958

**Aims** Biliary cannulation is a challenging and time expensive technique during endoscopic retrograde cholangiopancreatography (ERCP), as it may

fail in about 20% of cases. Several alternatives to conventional method of sphincterotome and guidewire have been proposed to date, although occur not negligible adverse events in such cases. Our primary endpoint was to assess the effectiveness and safety of deep common bile duct (CBD) cannulation after a new pre-cut with "short-incision" of papilla (fistulotomy-like). The secondary endpoint was to estimate the complication's rate and the procedural time.

**Methods** From June to October 2019 we prospectively enrolled 33 consecutive subjects with naïve papilla, undergoing ERCP for obstruction of the CBD. When the first attempt of biliary access failed using the guidewire-assisted technique, we performed an early "short-incision" of papilla. Then we carried out a rapid deep biliary cannulation followed by selective contrast agent injection.

**Results** The majority of our patients underwent ERCP for choledocholithiasis (63.6%) and in sometimes it was placed a stent at the end of procedure, as well as in cases of pancreatic cancer (24.2%) or papilla fibrosis (6.1%) (Table 1). A one-attempt effective cannulation of the CBP was gained in 60.6% (20/33) of subjects, using the standard technique. Whereas, in 39.4% (13/33) of patients undergoing 'short-incision' of papilla, a selective access of CBP was obtained in 36.6 ± 14.2 seconds. The overall procedural time did not significantly differ, as compared to the standard ERCP (p = 0.53). Three cases were complicated by self-limiting intra-procedural hemorrhage, and only one case by post-ERCP pancreatitis. They were reported in the first group. No intra-procedural or late complications occurred in the second group.

**Conclusions** The cannulation of the CBD during ERCP, using an early 'short-incision' of the papilla could be an effective and reasonably safe technique. Further randomized trials are needed to confirm these results.

### eP193 SINGLE-OPERATOR CHOLANGIOSCOPY GUIDED LITHOTRIPSY OF DIFFICULT COMMON BILE DUCT STONES IN THE VERY OLD

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DOI 10.1055/s-0040-1704959

**Aims** To evaluate the safety and efficacy of single-operator peroral cholangioscopy (SOPC) with electrohydraulic lithotripsy (EHL) in the very old and frail patient with difficult common bile duct (CBD) stones.

**Methods** Prospective and consecutive registration of one hundred SOPC procedures performed with SPYGlass DS from March 2016 to March 2019. All patients aged 80 years or above with difficult CBD stones, where conventional ERCP clearance had failed were included. SOPC with EHL was performed under general anaesthesia in an outpatient setting. A single dose of intravenous cefuroxime and a suppository of NSAID (diclofenac) were administered. Data regarding adverse events was collected manually from medical charts. All procedures were performed by a single operator.

**Results** Ten patients were included and they underwent 14 SOPC. The median age was 90 years (80–96). The majority (86%) had an American Society of Anesthesiologists (ASA) score of 3. Median stone size was 30 mm (20–50). SOPC EHL was combined with dilation assisted stone extraction (DASE) in 6/14 (43%). Difficult CBD stone clearance was successful in all patients, however, one patient had simultaneous bile duct tumour with malignant appearance on SOPC and lithotripsy was abandoned. Two patients needed one extra SOPC EHL procedure shortly after the study period. Post ERCP pancreatitis occurred in 0/14 (0%), cholangitis < 7 days post procedure in 0/14 (0%) and readmission rate < 30 days was 1/14 (7%). Readmission was due to transient abdominal pain and computed tomography scan was without signs of adverse events. In the long-term follow-up period of median 492 days (97–1215) after the final ERCP there were no admissions due to biliary events.

**Conclusions** SOPC guided EHL is a safe and effective treatment in very old and frail patients with difficult CBD stones. There was a low risk of adverse events and the procedure could be performed in an outpatient setting.

### eP194 MICRO- AND MACROFLUIDIC ASSAYS FOR BIOFILM FORMATION ON BILIARY STENTS: PRELIMINARY RESULTS OF A PILOT STUDY

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DOI 10.1055/s-0040-1704960

**Aims** Data on biofilm formation and basic mechanisms of stent occlusion in function of different type of stents are lacking. The aim of this study was to investigate biofilm formation in two model assays which reproduce two fundamental physical features of the stents: geometry and fluid flow.

**Methods** The microfluidic approach was exploited in order to reproduce smooth channels, in a macrofluidic approach representing smooth plastic stents (PS) involved six samples of different size of PS (7,8.5,10 Fr), and micro-patterned channels, reproducing the mesh of uncovered metal stents (UMS); Three clinically relevant bacterial strains, i.e., *Pseudomonas Aeruginosa* (PA), *Enterococcus faecalis* (EF) and *Klebsiella oxytoca* (KO), were tested in both cases to assess their ability of surface colonization and biofilm formation.

**Results** Preliminary results have shown that micro-patterned surfaces promoted a quicker and slightly higher bacterial coverage compared to the smooth ones in the same flow conditions; in particular, experiments with PA displayed a 60% increase in the growth rate and 140% in the production of biomass. Moreover, the biofilm seemed to concentrate along the walls and in the niches resulting from the intersection of the mesh pattern, while it developed uniformly on the flat surface. Macrofluidic experiments have shown a correlation with the device dimension for both bacterial species (EF, KO): the stent with the smallest diameter promoted the highest bacterial density per unit internal surface. Moreover, it was observed a stronger attachment of KO with respect to EF, regardless the type of stent. The mean optical density per unit surface area recorded with KO doubling the values of EF (0.042 in PS and 0.06 in UMS vs 0.018 and 0.03).

**Conclusions** Our preliminary data show that biofilm formation is related to environmental conditions such as the material and dimension of the biliary stents. Further studies are needed for confirming these results in order to prevent microbiological colonization and stent occlusion.

### eP195 PERCUTANEOUS SEMS INSERTION AS A SALVAGE TECHNIQUE IN CASES OF UNSUCCESSFUL RETROGRADE CANNULATION IN MALIGNANT HILAR BILIARY STRICTURES

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DOI 10.1055/s-0040-1704961

**Aims** The purpose of the study was to evaluate the technical and clinical efficacy, hospital stay and survival of antegrade stent placement following failed endoscopic cannulation of hilar strictures

**Methods** From 12.2016 to 11.2019 we included 21 patients in this retrospective study. All patients were with Klatskin type IV hilar biliary strictures with various etiology. In all patients we used combined ultrasound and X-ray guidance technique, beginning with ultrasound guided puncture of the undrained segment and continuing under fluoroscopy for guidewire and stent insertion. We have done various scenarios of stent deployment including combined

antegrade and retrograde stent insertion, single and double antegrade stent placement, and combination between plastic stents, self-expandable stents and percutaneous drainage. In five cases there were more than one intervention (23,81%) and Rendez-Vous was done in two cases. (9,5%)

**Results** Observed complications were hemorrhage in one patient (4,76%), pancreatitis in eleven patients (38%), cholangitis in seven patients (33,33%) and abscess in three (14,29%). There were two deaths following the procedure (9,5%), on day three and four. One from severe post procedural pancreatitis and one from emboly. The average hospital stay was 8.5 days and the average survival rate after the procedure was 119 days.

**Conclusions** Klatskin IV hilar stenosis is one of the most challenging procedures even for experienced endoscopists and often complete drainage of the biliary tree is not possible. In such cases undrained or unintentionally contrasted segments can be evacuated using the percutaneous antegrade SEMS placement as an effective salvage technique. The procedure harbors serious complication risks mainly pancreatitis and cholangitis, although average hospital stay and survival are comparable to retrograde drainage technique.

### eP196V HEPATIC SUBCAPSULAR HEMATOMA AFTER ERCP: AN UNCOMMON BUT POTENTIALLY VERY SERIOUS COMPLICATION

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DOI 10.1055/s-0040-1704962

Hepatic hematoma is an uncommon complication of ERCP, a potentially serious condition that requires specific treatment (surgery, embolization). A 37-year-old woman with choledocholithiasis underwent an ERCP with sphincterotomy and stone extraction, without incidents. 3 hours later she presented epigastric pain and anemia of 4 g of Hb. An urgent CT scan showed a left hepatic subcapsular hematoma of 14 × 6 cm, which compressed the hepatic surface, with gas bubbles in its deep portion, with no clear signs of active bleeding. Arteriography was decided without clear contrast extravasation points and empirical embolization was performed with Spongostan with good angiographic results, being discharged few days later.

### eP197 BILIARY OBSTRUCTION AFTER TIPS PLACEMENT IN A LIVER TRANSPLANT RECIPIENT

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DOI 10.1055/s-0040-1704963

**Aims** Transjugular intrahepatic portosystemic shunt (TIPS) is a method conventionally used in portal hypertension treatment. Refractory ascites and variceal bleeding are the most common indications. Complications frequently observed include bleeding and development of liver encephalopathy, those affecting the biliary tree as biliportal fistula and biliary stenosis are much less common. Placement of TIPS in a liver transplant patient is rare and implicate a technically challenging procedure.

**Methods** Case report.

**Results** A 40 year old Caucasian male, diagnosed with alcoholic cirrhosis, underwent orthotopic liver transplantation. The postoperative course was uneventful. Two months later, the patient presented with symptomatic ascites and fluidothorax, yet with normal liver function. Upper endoscopy revealed esophageal varices. His portosystemic gradient was 28 mmHg and liver biopsy showed microvascular damage corresponding with the sinusoidal obstruction syndrome (SOS). Implantation of a TIPS stent graft was successfully performed resulting in ascites and fluidothorax regression. However, shortly after the placement,

there was an apparent rise in cholestatic enzyme levels. A magnetic resonance study showed dorsal right-lobe bile ducts dilation with multiple small abscesses. Endoscopic cholangiography detected a tight stenosis of the right dorsal hepatic duct caused by external compression of the previously placed stent graft. Endoscopic stenting was unsuccessful. An internal-external catheter was placed percutaneously. The intervention was followed by a prompt reduction of cholestasis and disappearance of hepatic abscesses.

**Conclusions** To our knowledge, this is the first reported case of TIPS-related bile duct stricture in a transplanted liver successfully treated by percutaneous drainage. Awareness of this possible complication is important in patients with cholestasis after TIPS placement to allow for early diagnosis and management.

## eP198 ANALYSIS OF POST-ERCP PANCREATITIS RATES IN THE HUNGARIAN ERCP REGISTRY

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DOI 10.1055/s-0040-1704964

**Aims** Endoscopic retrograde cholangiopancreatography (ERCP) is one of the most frequently applied advanced endoscopic technique for therapeutic purposes. However, it comes with a significant risk of adverse events. We aimed to analyse the post-ERCP pancreatitis rates in the Hungarian ERCP registry.

**Methods** Post-ERCP pancreatitis (PEP) rates and prophylactic measures were analysed in the registry data. Until 15th of October 2019 we enrolled 3364 patients in the ERCP registry. From these patients 2706 cases were validated, 1596 were native papilla cases.

**Results** PEP occurred in 41 cases (1.5%) if all cases are considered, 2.3% (37/1596) in native papilla cases. PEP prophylaxis (indomethacin (IND) suppositories or prophylactic pancreatic stents (PPS)) were not applied in 35.5% (566/1596) of the cases. PEP developed in 2.3% (13/566) of patient without prophylaxis, 38.5% of these PEP cases were moderately severe (n = 4) and severe (n = 1). IND alone was administered in 53.3% of the cases (851/1596), the PEP rate was 2.5% (21/851) in these patients. PPS alone was inserted in 4.3% of the cases (68/1596), only 1 patient developed PEP (1.5%, 1/68). Both PPS and IND were applied in 111/1596 cases, 2 patients (1.8%, 2/111) developed PEP. In 186 patients with multiple pancreatic cannulation, PPS was inserted only in 93 (50%). PEP developed in 5 cases (5.4%), 3 of them were moderately severe or severe.

**Conclusions** While the average rate of PEP is low in our registry, prophylactic measures are underutilized. Potentially preventable PEP cases were identified in our analysis, and high ratio of these patients developed moderately severe and severe PEP.

## eP198\_1 RISK FACTORS FOR RECURRENCE OF STONE AFTER COMMON BILE DUCT STONES REMOVAL

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DOI 10.1055/s-0040-1704965

**Aims** Recurrent common bile duct stones (CBDS) after treatment by endoscopic sphincterotomy (ES) is not rare. Although loss of the function of sphincter or papillary stenosis and bile stasis may be an important factor contributing to the recurrence of CBDS, long-term complication of large ES remains controversial. The aim of this study was to compare the clinical characteristics in patients with or without recurrent CBDS after complete ES treatment.

**Methods** From January 2015 to December 2015, consecutive patients who underwent endoscopic retrograde cholangiopancreatography (ERCP) for CBDS removal in Korea University Guro hospital were included, if they met all of the following criteria: (i) age 18 years or more, (ii) were undergoing their first trial of ERCP, (iii) multiple CBDS more than two were removed completely, (iv) had undergone only ES without EPBD, and v) followed over 3 year. Enrolled patients were divided into recurrence group and no recurrence group according to the CBDS recurrence. Complete ES was classified to under-ES or over-ES by incised opening of bile duct after extraction of stone; under-ES was defined when opening of bile duct is under the duodenal wall and over-ES was defined when opening is extended the duodenal wall.

**Results** A total of 84 patients were included, with 24 patients in recurrence group and 60 patients in no recurrence group. Recurrence group was more female proportion and older age. The number of patients with gallstones and undergoing cholecystectomy during treatment period did not differ in the two groups. Also periampullary diverticulum was quite frequent in the both group, 58% and 48%. Diameter of CBD after stone extraction was larger in recurrence group than no recurrence group (p = 0.029). Over-ES was in 71 % of recurrence group and 43% of non-recurrence group (p < 0.05) and over-ES was shown in all 11 patients who recurred more than 3 times.

**Conclusions** Post-ES large bile duct opening was related with recurrence of CBD stone. In patients with multiple large stones and dilated CBD, stone removal by complete ES alone is cautioned.

Thursday, April 23, 2020

Endoscopic ultrasound

09:00 – 17:00

ePoster area

## eP199 OUR EXPERIENCES WITH EUS-FNA IN PATIENTS WITH MEDIASTINAL LYMPHADENOMEGALY OF UNKNOWN-ORIGIN

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**Aims** In Hungary there is limited access to perform EUS or EUS with fine-needle aspiration (FNA). Our aim was to overview the reports and the quality indicators of EUS(-FNA) interventions indicated by MLM.

**Methods** The reports of EUS-FNA interventions made with MLM indication at the First Department of Medicine, University of Szeged between 1. January 2015 and 31. August 2018 were studied. Epidemiological data, the characteristic of lymph nodes (LN), the rate and implementation of FNA, the quality of the collected samples, the diagnosis and the informativity of the reports (as quality indicators) were analysed.

**Results** In the given period of time EUS were made in a total of 23 cases with MLM, of which in 17 cases (73.9%) FNA was performed, too. MLM was present most often in the paraoesophageal, subcarinal (21,7%), the number of the affected LN ranged between 1-several. In 69% of the cases the size of the LN was given in one dimension (length: min. 5 mm max. 50 mm, median: 10–20 mm, average: 19 mm). In 17 patients FNA sampling was performed with an average of 4 passes pro patients. The rate of the slow-pull capillary technique and the suction technique were 66% and 34%, respectively (p = 0.025, p < 0.05). FNA was carried out with 22 G needle in the 67% of the cases. Cytology was diagnostic in 82%, and all cytological diagnosis was in accordance with the histological diagnoses. Non-diagnostical samples were collected with vacuum technique. Reactive LN was the most common diagnosis (7 cases), followed by sarcoidosis, neuroendocrine tumor/melanoma metastasis (2 cases respectively). By 2 patients mediastinoscopy/VATS lead to final diagnosis. No complication was observed after any EUS-FNA.

**Conclusions** In case of MLM EUS is a safe method with good diagnostic ability. Slow-pull capillary technique has a better value in getting diagnostic samples.

## eP200 FACTORS INFLUENCING DIAGNOSTIC ACCURACY OF ENDOSCOPIC ULTRASOUND WITH FINE NEEDLE ASPIRATION (EUS-FNA) IN PANCREATO-BILIARY TUMORS

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**DOI** 10.1055/s-0040-1704967

**Aims** To evaluate the factors influencing diagnostic accuracy of EUS-FNA in patients with suspected pancreato-biliary tumors.

**Methods** From 2010 to 2018, 557 consecutive EUS-FNAs were carried out by a single operator using an echo endoscope Olympus GFUCT140 or GFUCT180. EUS FNAs were carried out using a needle of different type (Echotip ProCore, Wilson-Cook, Expect TM Boston Scientific, Shark Core TM FNB Medtronic, Acquire Boston Scientific) and with different size (19, 20, 22 Gauge).

**Results** 308/557 EUS-FNAs were carried out for pancreato-biliary neoplasms. Overall sensitivity of EUS-FNA was 66%, specificity 100%, and diagnostic accuracy 69%. When tissue sampling was performed using a new fine needle biopsy (FNB) (Acquire/Shark needles), the diagnostic accuracy increased up to 90.5%. When EUS-FNA was targeted to both primary and metastatic lesions (33 patients) sensitivity raised to 98%. Diagnostic accuracy was influenced by the experience of the operator, reaching 87.5% after 250 procedures. Variables associated with diagnostic accuracy were FNB needle (OR 3.06), operator expertise (OR 1.21) and EUS-FNA of primary and metastatic sites (OR 9.67).

**Conclusions** EUS-FNA is a safe procedure with high diagnostic accuracy in pancreato-biliary neoplasms. The diagnostic accuracy increases during the learning curve period, being necessary at least 250 EUS-FNAs to achieve a good (> 85%) value in the absence of ROSE.

## eP201 EVEN IN CASE OF A 'SIMPLE' PNET...ONE NEVER KNOWS WHAT TO EXPECT

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**DOI** 10.1055/s-0040-1704968

**Aims** Pancreatic neuroendocrine tumors (pNETs) are known for their unpredictable behaviour. Even in case of apparent disease stability, progression of the disease must always be suspected.

**Methods** We describe the case of a patient with a surgically treated pNET with no signs of recurrence, with late liver metastases which were diagnosed only after biopsy since previous imaging modalities were inconclusive.

**Results** During a routine abdominal ultrasound (US) in a 61 y.o. male patient, a 6 cm mass in the pancreatic body was detected. A subsequent CT-scan confirmed the finding and EUS-FNA made the diagnosis of G1 NET with a ki67 < 1%. The patient's blood tests were normal, Chromogranin A was elevated (around 500 U/L) but the patient suffered from chronic gastritis and was on PPIs. After a 68Gallium-PET which excluded other localizations of the disease, the patient underwent body-tail pancreatectomy + splenectomy (R0 margins) with histological confirmation of G1 NET. After a 2-years silent follow-up, a CT scan revealed a single 6 mm hyperenhanced focal liver lesion in s6: a diagnostic work-up with MRI described the lesion as a focal nodular hyperplasia with visible central scar and a new 68Gallium-PET was negative.

Despite all these findings, we decided to perform a US-guided percutaneous biopsy of the lesion: the histology revealed a G3 well-differentiated NET with a ki67 of 25%. The patient then started somatostatin analogues (SSAs) at high doses and the focal lesion was treated with percutaneous ablation via microwaves. After almost 2 years now, the patient is fine with no signs of recurrence

and still on SSAs. Monitoring is now made with blood tests every 6 months (Chromogranin A is still elevated) and a yearly CT.

**Conclusions** "Tissue is the issue" in the diagnosis and management of pNETs. Disease upgrading and upstaging is possible and must be addressed with the right tools and timing.

## eP202V ENDOSCOPIC ULTRASOUND IN DIAGNOSIS OF GROOVE PANCREATITIS

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**DOI** 10.1055/s-0040-1704969

**Aim** To show cystic degeneration of muscularis and submucosa in the duodenum in patient with groove pancreatitis.

**Methods** For diagnosis we used convex ultrasound scope UCT140-AL5 7,4-12,4 Mhz.

**Results** An EUS show the duodenal wall circumferentially occupied by an intramural cystic formation with septa inside (multilocular) – 7 mm, nondependent on a pancreatic parenchyma with 53 × 23 mm in diameter and changes of chronic pancreatitis (indeterminate findings as per Rosemont classification). Pancreatic parenchyma demonstrating honeycombing lobularity.

**Conclusions** The data support the potential value of EUS as a tool to diagnose or exclude groove pancreatitis.

## eP203V DUODENAL CANCER COMPLICATED WITH BILIARY STRICTURE, DUODENAL OBSTRUCTION AND ACUTE CHOLECYSTITIS TREATED WITH BILIARY STENTING, EUS-GUIDED GASTROJEJUNOSTOMY AND EUS-GUIDED CHOLECYSTOGASTROSTOMY

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**DOI** 10.1055/s-0040-1704970

A 66-year-old female with duodenal cancer invading the mesenteric vessels presented with biliary and duodenal obstruction at segment D3. She underwent ERCP with biliary stenting. Following that, Balloon-assisted/EUS-guided Gastrojejunostomy was performed using a 2 cm LAMS. She was discharged soft diet. Three weeks later, she presented with sepsis due to biliary stent occlusion and acute cholecystitis.

The Gallbladder did not opacify on cholangiogram. EUS-guided Cholecystogastrostomy was performed using a 1.5 cm LAMS. Copious pus drained from the Gallbladder.

Biliary stents were then replaced.

Sepsis resolved. She was discharged on soft diet and was able to resume chemotherapy.

## eP204 ENDOSCOPIC ULTRASOUND-GUIDED SAMPLING OF MEDIASTINAL LYMPHADENOPATHY: 19-GAUGE TRUCUT BIOPSY VERSUS 22-GAUGE ASPIRATION BIOPSY

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**DOI** 10.1055/s-0040-1704971

**Aims** Endoscopic ultrasound (EUS)-guided transesophageal fine needle biopsy has been used as a method for histologic evaluation of mediastinal lymph nodes (LNs). This study aimed to compare the outcomes of EUS-guided sampling with mediastinal lymphadenopathy using a 19-gauge trucut needle and 22-gauge fine needle aspiration (FNA) needle.

**Methods** From May 2006 to January 2011, patients with mediastinal lymphadenopathy, who received an EUS-guided trucut biopsy or a FNA biopsy, were retrospectively reviewed. Demographic data, endosonographic characteristics of LNs including size, shape, border, echotexture, and echogenicity, diagnostic yield, and adverse events between the trucut needle group and aspiration needle group were compared.

**Results** A total of 69 patients (trucut group, n = 33 vs. aspiration group, n = 36) were identified. There were no significant differences in demographic data, indication for an EUS-guided biopsy, location of LNs, number of needle passes, and endosonographic features of LNs between the two groups. The sizes of LNs were larger in the trucut group than in the aspiration group ( $28.9 \pm 14.0$  mm vs.  $21.1 \pm 8.8$  mm,  $P = 0.007$ ). However, there was no significant difference in the ratio of LNs that were  $\geq 10$  mm in both groups. The overall accuracy of EUS-guided biopsy for the diagnosis of malignant lesions was 79.7% (55/69). There were no significant differences in the histological diagnostic yield of malignant LNs between the two groups. There were no significant procedure-related adverse events in both groups.

**Conclusions** EUS-guided biopsy can be a useful method for histologic evaluation of mediastinal nodal lesions.

### eP205V ABDOMINAL ABSCESS EUS-GUIDED DRAINAGE USING LUMEN-APPPOSING-METAL STENT

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DOI 10.1055/s-0040-1704972

Here the case of a 71-year-old-man affected by head pancreatic cancer, carrying on uncovered SEMS in CBD. During chemotherapy, septic shock occurred. CT-scan revealed abdominal abscess adjacent to major gastric curve. The collection was punctured obtaining purulent liquid for microbiological evaluation to target antimicrobial therapy. A 15mm x 10 mm LAMS was deployed with subsequent flowing of purulent fluid in the gastric lumen. Clinical scenario rapidly improved. Ten-days later CT-scan control confirmed resolution of the collection. The stent was removed with retrieval forceps and OTSC was placed to completely close the gastric hole. The patient remained in satisfying clinical condition; he was discharged home the day after and was referred to restart oncologic treatment.

### eP206 THE ROLE OF RECTAL EUS-FNA/B IN PRE-SACRAL UNDEFINED LESIONS IN PATIENTS WITH HISTORY OF LOWER GI NEOPLASIA

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DOI 10.1055/s-0040-1704973

**Aims** Colo-rectal neoplasia is one of the most commonly diagnosed malignancies. Pre-sacral lesions may arise in the follow up after colo-rectal surgery, after adjuvant chemotherapy (CT), or neo-adjuvant chemo-radiotherapy. CT scan and pelvic RM are the two most used diagnostic tool in these patients, but they can be inconclusive in the diagnosis of pre-sacral lesions. PET scan adds more information but, in presence of inflammation, can show false positive results. To evaluate the role and the efficacy of endoscopy ultrasound (EUS) and Fine Needle Aspiration or Biopsy (FNA/FNB) in the multimodal restaging of suspected local recurrence or progression disease in patients with history of rectal cancer. The number of EUS FNA/FNB passes was based on the gross morphology of the specimen.

**Methods** From September 2015 to August 2019 we retrospectively enrolled eight patients undergoing endoscopy ultrasound (EUS) and Fine Needle Aspiration or Biopsy (FNA/FNB) for pre-sacral lesions. In all cases the radiological findings (CT scan and or PET/MRI) were inconclusive for a final diagnosis.

**Results** In 7 of 11 patients pathological evaluation confirmed the suspicion of local recurrence and they were referred for oncological re-treatment. In four patients EUS-FNB of lymph-nodes or masses yielded a diagnosis of inflammation or fibrosis. Radiological follow-up for these patients confirmed the benign characteristics. In only two cases both cytology and histology were performed, and in both tissue acquisition by EUS-FNB allowed to reach a diagnosis. In only one of three cases in which lymph-nodes were targeted, cytology evaluation on an EUS-FNB of 15 mm lymph-node showed tumoral cells. Procedures were performed in out-patient setting. All patients underwent antibiotic prophylaxis with intra-venous cephalosporin before FNA/B. No adverse events or infection were observed.

**Conclusions** In presence of undefined pre-sacral lesions EUS-FNA/B, must be a mandatory diagnostic tool in patients with a history of lower GI neoplasia.

### eP207V SINGLE-SESSION BRIDGE-TO-SURGERY CHOLEDOCHO-DUODENOSTOMY AND DUODENAL STENTING IN PATIENT WITH MALIGNANT BILIARY AND DUODENAL OBSTRUCTION

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DOI 10.1055/s-0040-1704974

This is the case of a 73-year-old-man affected by obstructive jaundice, cholangitis and vomit due to resectable pancreatic-head cancer. Secondary duodenal infiltration not allowed to reach the Vater's papilla and cholecho-duodenostomy (EUS-CD) was performed. 8mm x 8mm LAMS was deployed, obtaining biliary drainage. In the same session, uncovered 60mm x 10 mm SEMS was deployed across the 30 mm duodenal stenosis. CT-scan confirmed stents correct position. Progressive jaundice resolution was observed; the patient restarted oral feeding; he was referred to oncologic surgical treatment. In patients with malignant distal biliary and duodenal obstruction, single-session EUS-CD and duodenal stenting is challenging for the risk of LAMS dislocation, but feasible and effective. It doesn't compromise further surgical treatment and it can be considered as a bridge-to-surgery approach.

### eP208 TRANSESOPHAGEAL EUS-GUIDED CORE BIOPSY OF LUNG MASSES USING 22 G FRANSEEN-TIP NEEDLE-INITIAL EXPERIENCE

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DOI 10.1055/s-0040-1704975

**Aims** The utility of EUS-guided transesophageal core biopsy of lung tumors has been rarely investigated. Most prior reported cases were performed with fine-needle aspiration or with smaller caliber FNB-needles. The aim of our study was to evaluate the diagnostic utility and safety of transesophageal EUS-guided core biopsy of pulmonary tumors using 22 G Franseen-tip needle.

**Methods** Data was collected retrospectively from January 2019 to October 2019. All the patients had pulmonary masses close to or abutting the esophagus, detected on CT-scan. They were referred for EUS-guided biopsy after failure of bronchoscopy to establish tissue diagnosis or judged as unsuitable for bronchoscopy due to the location. Patients underwent endoscopic ultrasound with a linear scope (Fujifilm EG-580UT) and fine needle biopsy using 22G

Acquire needle (Boston Scientific Corp.). The obtained material was assessed visually by the endoscopist without onsite cytologist.

**Results** Eleven patients (7 men, 4 women) underwent EUS-guided transesophageal core biopsy of lung masses during the study period. The procedure yielded tissue for histologic diagnosis in 100% of patients. Immunohistochemical analysis was possible in all cases. Non-small-cell lung cancer was proven in seven patients, small-cell lung cancer in two, metastatic lung disease in one and mesothelioma in one. No complication was encountered during the first 48 hours and after 30 days follow-up.

**Conclusions** EUS-guided core biopsy of lung masses using 22 G Franseen-tip needle is safe and established histologic diagnosis in all patients in this study. In cases of accessible lesions this procedure could be discussed as first-line diagnostic tool.

## eP209V ENDOSCOPIC RETRIEVAL OF A BI-FLANGED METAL STENT RELEASED INTO A PERIPANCREATIC FLUID COLLECTION THROUGH A LUMEN-APPPOSING METAL STENT

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DOI 10.1055/s-0040-1704976

A 16 mm bi-flanged metal stent (BFMS) was mistakenly released inside a peripancreatic fluid collection (PFC) during transgastric drainage. In an attempt to endoscopically retrieve the stent, the PFC was punctured under EUS with a 19 Gauge FNA needle and filled with normal saline. An electro-cautery enhanced 20 mm lumen-apposing metal stent (LAMS) was then placed under full EUS guidance and the middle portion balloon dilated up to 20 mm. This allowed introduction of a gastroscope through the LAMS into the cavity, where the dislocated BFMS was entrapped into a polypectomy retrieval net and safely extracted under direct endoscopic view.

## eP210 THE ROLE OF LINEAR EUS IN DIAGNOSIS OF EXTRAHEPATIC PRIMARY SCLEROSING CHOLANGITIS: A PICTORIAL REVIEW OF 2 CASE REPORTS

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DOI 10.1055/s-0040-1704977

**Aims** Early diagnosis of PSC is challenging. Current guidelines recommend MRCP as primary modality. If inconclusive, ERCP is recommended. EUS is a relatively low risk procedure which may have a role in diagnosis of PSC.

**Methods** We describe two cases where EUS helped reach a diagnosis of PSC.

**Results** Case 1: 69 year old male with previous cholecystectomy for gallstones was referred with loose stools and gradual rise in GGT to 506 and ALP to 286 but normal bilirubin over 2 years. Transabdominal US showed fatty liver and colonoscopy revealed pan colitis. CT abdo/pelvis and MRCP revealed mild intrahepatic duct dilatation with normal common bile duct (CBD).

A linear EUS revealed a ragged CBD with average wall thickness of 1.7 mm with CBD calibre of 6.7 mm. Diagnosis of PSC was made based upon the clinical history and EUS findings and repeat review of MRCP.

Case 2: 42 M with a background of pancolectomy and loop ileostomy for ulcerative colitis 16 years previously was reviewed with a 2 year history of worsening LFTs (ALT of 148, ALP 222, GGT 726 and normal bilirubin). MRCP 2 years previously was reported normal. A repeat MRCP showed mild left intrahepatic duct dilatation but normal CBD without strictures.

A linear EUS demonstrated an irregular wall thickness in the CBD, with a maximal wall thickness of 1.1 mm, in keeping with PSC. A CBD stone was demonstrated

distal to this measuring 2–3 mm. An ERCP was performed, showing intrahepatic duct structuring and a tatty and irregular CBD with a distal dominant structure.

**Conclusions** Linear EUS played a vital role in diagnosis of PSC in these patients. We suggest EUS could have a role in disease diagnosis prior to attempting ERCP, given inherent risks of infection and pancreatitis associated with ERCP. This may require international guidelines to set the parameters of PSC findings with EUS.

## eP211 'OVER THE SCOPE TECHNIQUE' (OTS) FOR PARTIALLY COVERED SELF-EXPANDABLE METAL STENT (PC-SEMS) PLACEMENT TO TREAT DUODENAL PERFORATION (DP) OCCURRED DURING EUS: CASE SERIES

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DOI 10.1055/s-0040-1704978

**Aims** Adverse events during EUS are rare. According to the literature, DP occurs in about 0,09% of patients and is associated with a high mortality rate. Surgical approach has been the main treatment for years. According to current version of the ESGE position statement, new endoscopic approaches to treat DP have been developed.

Aim of this study assessing the feasibility of use of PC-SEMS with the "OTS technique placement" as an endoscopic approach to treat large (> 1 cm) DPs occurred during EUS.

**Methods** Between June 2016 and May 2019 we collected data from 6 patients (4/2; M/F, median age: 66) treated for DP during EUS in 3 different endoscopic centers. We treated them according to the size and type of the perforation by placing 6 cm PC-SEMS implanted with OTS technique in order to achieve a large perforation closure and avoid stent migration. Moreover 'OTS technique' allowed us to preserve the Vater papilla thanks to the direct endoscopic view, without fluoroscopic guide during the placement of the SEMS.

**Results** Indications for EUS evaluation were: study of a pancreatic cyst in 1/6 patients, biliary pancreatitis assessment in 5/6 patients. Perforation occurred in the inferior wall of the duodenum knee in all patients. The mean size was 20 mm, range 15–25 mm). All stents were placed successfully. After 4 weeks the PC-SEMS were removed with foreign-body forceps; in 3/6 patients APC had to be used on the overgrowth tissue on the distal uncovered part of the stent. 4 weeks later endoscopic and radiological control confirmed the healing of the DPs in all patients.

**Conclusions** The use of PC-SEMS in skilled hands is feasible, safe and allows to treat large perforation; "OTS technique" allows the correct stent placement also in the case of radiological guide absence.

## eP212 CONCOMITANT MALIGNANT DUODENAL AND BILIARY STENOSIS: DUODENAL STENTING AND HEPATICOGASTROSTOMY DURING THE SAME PROCEDURE IS A SAFETY PROCEDURE (SAMETIME STUDY)

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DOI 10.1055/s-0040-1704979

**Aims** The concomitant biliary and duodenal malignant stenosis is a rare event, reflecting a locally advanced neoplastic process. We conducted a retrospective study to evaluate biliary drainage in association with duodenal stenting.

**Methods** Patients were included from 01.01.2011 to 31.12.2017. Patients included had palliative endoscopic management with **biliary drainage and duodenal stenting in the same time or within 7 days or less for concomitant bilio-duodenal malignant stenosis.**

The primary endpoint was the length of hospitalization required for double drainage. Secondary endpoints were biliary and duodenal reintervention rate, significant postoperative adverse events rate (Dindo-Clavien classification  $\geq$  III), and overall survival.

Patients were divided into several groups for statistical analysis.

SAMETIME drainage group if the two procedures were done on the same day VS DEFERRED drainage group if the two procedures were done in different days ( $< 7$  days).

And secondly, EUS-hepaticogastrostomy VS DUODENALACCESS if the drainage was done by ERCP, radiological or choledoduodenostomy.

**Results** 31 patients were included (19 women, mean age = 66).

Stenosis was related to pancreatic cancer in most of cases 17 patients (54%).

16(52%) patients were in the SAMETIME group, 15(48%) in the DEFERRED group.

11 patients(35%) had EUS-HG and 20(65%) had DUODENALACCESS: PCTBD for 11 (35%) patients, ERCP for 8 patients(26%) and choledoduodenostomy for 1.

Median survival was 76 days.

**Patients in the group SAMETIME had significantly shorter hospitalization than the DEFERRED group: 7.47 days vs 12,5 days ( $p = 0.035$ ).**

SAMETIME group trended to have a lower rate of postoperative complications (27% VS 56%;  $p = 0.0953$ ).

EUS-HG group trended to have lower rate of postoperative complications (18% VS 55%  $p = 0.065$ ) and less biliary endoscopic revision (9% VS 30%  $p = 0.37$ ).

**Conclusions** SAMETIME drainage is associated with a halved hospitalization time and probably with less adverse events than a two procedures drainage. EUS-HG should be preferred because of no more complication and a tendency to better patency.

## eP213 FEASIBILITY AND EFFICACY OF A NOVEL NEEDLE IN ENDOSCOPIC ULTRASOUNDGUIDED TISSUE SAMPLING FOR PANCREATIC SOLID LESIONS: A PROSPECTIVE RANDOMIZED COMPARATIVE STUDY

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DOI 10.1055/s-0040-1704980

**Aims** Histologic confirmation is crucial in the evaluation of pancreatic solid lesions. Recently, variable needles with different shapes for endoscopic ultrasound guided tissue sampling (EUSTS) have been used, however, most needles are expensive. Therefore, new needle with novel technology and reasonable price is needed. We evaluated the feasibility and efficacy of a newly designed prototype needle for pancreatic solid lesions.

**Methods** As a prospective randomized trial, a 22gauge needle (22 G, ClearTip, FINEMEDIX, Daegu, Korea) with side hole of both reversed bevel (test needle) was compared to three commercially available 22 G biopsy needles (control needles) in patients who undergoing EUSTS of pancreatic solid lesions. First two passes of EUSTS were accomplished in a random order between test and control needles. The procured specimens were prepared and compared specimen adequacy and diagnostic accuracy among needles. Additional two passes were performed using the control needle for histologic diagnosis. Two blinded pathologists evaluated the specimens based on predetermined diagnostic criteria for cytology and histology.

**Results** Between February and June 2018, 24 patients (median 63.5 years, 14 males) with pancreatic solid lesions were enrolled. Mean size of mass lesion was 32.4 mm  $\pm$  2.8. Among them, one patient had no final diagnosis due to inadequate specimen. Technical failure occurred in one case of test needle.

Final diagnosis was pancreatic ductal adenocarcinoma in 19, neuroendocrine tumor in 1, metastasis in 1, and chronic pancreatitis in 2. There was no significant difference between test and control needles in terms of specimen adequacy (95.5% vs. 95.7%) and diagnostic accuracy (69.6% vs. 82.6%) ( $p$  value = 1.000 and 0.491, respectively). There were no adverse events in all patients.

**Conclusions** The new prototype needle is feasible and efficient for EUSTS in pancreatic solid lesions. However, further study including large volume and for other lesions is needed to validate these results.

## eP214V PANCREATIC ASCITES TREATED BY PANCREATIC STENT THROUGH MINOR PAPANILLA BY EUS- GUIDED RENDEZVOUS

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DOI 10.1055/s-0040-1704981

30 years-old with acute alcoholic pancreatitis. Develops severe pancreatic ascites secondary to rupture of the pancreatic duct. It's not possible to cannulate major papilla in ERCP and EUS is performed appreciating a pancreatic duct  $< 1$  mm.

With 25 G needle, PD is punctured, confirming in the pancreatography the presence of contrast leak and a small collection in the tail which is drained with 10  $\times$  10 mm Axios stent. Subsequently, PD is punctured with 22 G needle and a 0.018" Novagold guide is passed to duodenum through minor papilla. Through rendezvous PD is cannulated and 6Fr plastic stent is placed. The ascites was progressively solved after endoscopic procedure.

## eP215 ACCURACY OF VISUAL ON-SITE EVALUATION (VOSE) IN PREDICTING THE ADEQUACY OF EUS-GUIDED FINE NEEDLE BIOPSY: A SINGLE CENTER PROSPECTIVE STUDY

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DOI 10.1055/s-0040-1704982

**Aims** EUS-FNA is the standard procedure for the diagnosis of pancreatic lesions with accuracy rate of 78-95%. Rapid onset evaluation (ROSE) decreases the number of passes but is not always available. New needles have been developed to obtain tissue acquisition (fine-needle biopsy, FNB) with a relatively better diagnostic adequacy with fewer passes. Without ROSE, there is no clear criterion for determining the number of FNA passes and therefore unnecessary passes are performed. We introduced an easy and rapid method of direct classification of EUS-FNB sample namely Visual on-site evaluation (VOSE).

To assess the accuracy of VOSE in predicting the histo-cytological adequacy of specimens to reduce unnecessary passes. To evaluate the diagnostic power of FNB and the rate of core tissue obtained.

**Methods** Prospective single center study on patients with pancreatic lesions that underwent EUS-FNB. VOSE parameters were: presence of blood, macroscopic visible core (MVC), number and length of specimen. The association between VOSE tool and cyto/hystological adequacy was assessed. Fisher's exact test and Student's t-test used to compare categorical and continuous variables.  $P < 0.05$  considered statistically significant.

**Results** From January 2017 to February 2019, 99 patients (58.6% male; mean age 68.4  $\pm$  10) were enrolled, including a total of 102 lesions. Total number of passes was 358. The 92.7% of samples were adequate and the rate was higher

with the 22-G needle than with 25 G (96.5% vs 89.2%  $p$  0.01). VOSE "presence of MVC plus multiple specimens plus long specimen" predicted histo-cytological adequacy with 49.7% of sensitivity, 58.3% of specificity and 94.5% of positive predictive value, saving about 50% of passes.

**Conclusions** FNB provides a high rate of adequate specimen especially with the 22 G needle. The VOSE tool 'presence of MVC plus multiple specimens plus long specimen' can be used as predictor of histo-cytological adequacy, with acceptable accuracy and a minor number of passes.

## eP216 THE DIAGNOSTIC EFFICACY OF CONTRAST ENHANCED-ENDOSCOPIC ULTRASONOGRAPHY IN DIFFERENTIAL DIAGNOSIS OF GASTRIC GASTROINTESTINAL STROMAL TUMOR (GIST) AND NON-GASTROINTESTINAL STROMAL TUMOR

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**DOI** 10.1055/s-0040-1704983

**Aims** The aim of this study is to find specific features on CE-EUS in differential diagnosis of GIST with other SETs.

**Methods** We retrospectively reviewed the findings of CE-EUS of 25 hypoechoic tumors, located in gastric proper muscle layer in 25 patients. The presence and degree of tumor vessel in the SET on CE-EUS was evaluated. The results were compared to histological diagnosis, in which obtained by EUS guided fine needle aspiration with biopsy or/and surgical resection.

**Results** 17 of 25 SETs were diagnosed as GIST by histological results. 6 SETs were diagnosed as leiomyoma and 2 SETs were schwannoma. In 14 of 17 GISTs tumor vessel was observed and in 8 non-GISTs tumor vessels were not observed. On statistical analysis, the presence of tumor vessel was significantly related to GIST (Odds ratio, 4.250; 95% confidential interval, 1.8–10.0;  $P < 0.001$ ); 1 or 2 tumor vessels (1+) in 5 cases, 2 or 3 tumor vessels (2+) in 6 cases, more than 3 tumor vessels (3+) in 3 cases and no tumor vessels in 3 cases. The sensitivity, specificity, accuracy and positive predictive value with vessel enhancement were about 100%, 66.7%, 77.4% and 84%. In 17 of GISTs hypoenhancement was observed in 5 cases, iso-enhancement in 11 cases and hyperenhancement in 1 case. In 8 of non-GISTs, hypoenhancement was observed in 5 cases, iso-enhancement in 2 cases, unenhancement in 1 case. The results showed that the tendency of correlation between iso-enhancement pattern and GISTs, but there was no statistical significance. (OR, 7.78 I; 95% CI 1.165–51.915;  $P = 0.061$ ).

**Conclusions** The findings of tumor vessel enhancement in CE-EUS is useful for differential diagnosis between GIST and non-GIST in gastric hypoechoic tumor of proper muscle layer. The echo patterns of contrast enhancement were insufficient for differential diagnosis between GIST and non-GIST.

## eP217 ENDOSCOPIC ULTRASOUND-GUIDED RADIOFREQUENCY ABLATION OF PANCREATIC METASTASIS FROM RENAL CELL CANCER: FEASIBILITY AND SAFETY

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**DOI** 10.1055/s-0040-1704984

**Aims** Renal cell carcinoma (RCC) is the most common renal cancer in adults. Up to 50% of patients will develop metastases after nephrectomy with a 5-year survival rate of 10%-15%. Pancreas is an elective site for RCC metastases. Surgery is the first choice treatment for pancreatic metastases. For not-resectable pancreatic metastases therapeutical options are limited. Radiofrequency ablation (RFA) has been successfully performed for the treatment of several not-resectable solid tumours. Previous studies have demonstrated the feasibility and safety of endoscopic ultrasound-guided radiofrequency ablation (EUS-RFA)

for the treatment of pancreatic lesions. However, there are no data regarding its use in the treatment of pancreatic metastases from RCC.

To evaluate feasibility and safety of EUS-RFA in the treatment of pancreatic metastases from RCC.

**Methods** Single centre prospective study on patients with non-resectable RCC pancreatic metastases or not amenable to surgery. All patients underwent EUS-RFA with a monopolar, 19 G RFA needle (Endoscopic UltraSound guided Radiofrequency Ablation electrode; EUSRA) with a RF power of 30 W.

All patients underwent CT/MRI scan after 24 hours from the procedure. Feasibility was defined as the possibility of inserting the needle in the lesion and applying the radiofrequency. Safety was defined by collecting data of any complication occurred within 3 months of follow-up.

**Results** From January to August 2019, three patients were enrolled (2 women; mean age  $64 \pm 19$  years). Overall, four lesions were treated (Mean size  $26 \pm 17$  mm). 3 out of 4 lesions were located in pancreatic head.

The procedure resulted feasible in 100% of cases. No complications occurred after the treatment.

The post-procedural imaging showed in all cases the presence of a necrotic area in the site of treatment.

**Conclusions** EUS-RFA seems to be a feasible and safe technique for the treatment of not resectable pancreatic metastases from RCC. Further studies are necessary to determine the efficacy of this treatment.

## eP218V ENDOSCOPIC ULTRASOUND-GUIDED THROUGH-THE-NEEDLE MICROBIOPSY OF PANCREATIC CYSTIC LESIONS

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**DOI** 10.1055/s-0040-1704985

Pancreatic cystic lesions are frequently encountered and diagnostically challenging. EUS-guided through-the-needle microbiopsy (EUS-TTNB) of the cyst wall has recently been introduced as an alternative to fine-needle aspiration (FNA) cytology. The technique provides histological samples which outperform cyst fluid cytology and/or carcinoembryonic antigen concentration, but may be associated with a higher adverse event rate compared to EUS-FNA. In this video, we describe the procedure in detail and discuss technical aspects. The method requires some procedural considerations but can, following a short learning curve, be performed with high technical success. Further studies are needed in order to define proper indications for EUS-TTNB.

## eP219 ROLE OF EUS IN CASES OF DILATED CBD WITH BORDERLINE LFT DERANGEMENT WITH INCONCLUSIVE OTHER IMAGING

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**DOI** 10.1055/s-0040-1704986

**Aims** To see the diagnostic yield of EUS prior to ERCP for patients with dilated CBD and other inconclusive imaging studies with normal or borderline derangement of LFT.

**Methods** Total 4491 ERCP were done in 18 months study period.

Of this total of 450 patients had inconclusive imaging study for dilated CBD and normal to borderline LFT derangement.

All these inconclusive were subjected to an EUS using linear EUS scope.

**Results** 300 cases (66.7%) were found to have definitive causes and were subjected to ERCP. Of these the main causes were:

241 (80.3%) – CBD stones 17 (5.67%) – Ampullary Tumor

15 (5%) – Impacted Stone at ampulla 04 (1.3%)- Pancreatic Malignancy  
 06 (2%) – Distal CBD polyps 06 (2%) – Distal Cholangiocarcinoma  
 03 (1%) – WON Compression 02 (0.7%)- CBD Sludge  
 06 (2%) – Chronic Pancreatitis Related Stricture  
**ERCP was deemed unnecessary in 150 (33.3%) cases. The reasons of CBD dilatation and altered LFT in these cases were**  
 43 (28.7%) – Spontaneous passage of stones  
 22 (14.7%) – Type 1 Choledochal cyst  
 30 (20%) – Periapillary diverticulum  
 20 (13.3%) – Stones in Hartman's pouch  
 17 (1.13%) -Small ampullary adenoma,  
 8 (5.33%) – Duodenal ulcers with scarring  
 10 (6.7%) – Post cholecystectomy dilatation

**Conclusions** EUS is more accurate than ERCP in detecting CBD stones. Compared to MRCP, sensitivity is equally impressive at 100% but EUS had a specificity of 95% as opposed to a figure of 73% reported for MRI. EUS has remarkable diagnostic yield in detecting etiology of dilated CBD and avoids unnecessary ERCP's even in patients who have had US, CT scan or MRCP.

### eP220 EUS-GUIDED LUMEN-APPRESSING METAL STENT (LAMS) PLACEMENT: FEASIBILITY, EFFICACY AND SAFETY FROM A SINGLE CENTER EXPERIENCE

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**Aims** LAMs are indicated for management of symptomatic pancreatic fluid collections (PFC), acute cholecystitis (AC) unfit for surgery and palliative biliary drainage after ERCP failure. The aim of this study was to evaluate feasibility, safety and efficacy of LAMS in a single-center setting.

**Methods** This is a prospective single-center study evaluating all consecutive patients referred for LAMS placement from August 2017 to April 2019. Technical success was defined as LAMS placed without immediate complications; clinical success as resolution of collections, decrease of bilirubin in obstructive jaundice, relief from symptoms and/or signs of inflammation in AC.

**Results** 22 patients (M:F = 15:7, mean age 66,2 y.o.; SD ± 19,2) underwent LAMS placement for pseudocyst (PC) (n = 10), walled-off pancreatic necrosis (WOPN) (n = 3), post-surgical infected fluid collection (n = 1), AC in unfit for surgery (n = 5), palliative biliary drainage (n = 3). 10 mm-diameter stents were used in all patients, except 15 mm-LAMS (n = 3) placed to perform necrosectomy in WOPN and 8mm-stent (n = 2) for common bile duct (CBD) drainage after ERCP failure. Mean procedural time was 44,6 minutes (SD ± 24,5). Technical success was achieved in 95,4% (21/22): a LAMS was trapped in the endoscopic balloon and accidentally removed, requiring urgent surgical intervention with positive outcome. LAMs were removed after a mean of 42 days (SD ± 28,2). Overall clinical success was achieved in 85,7% (18/21): definitive resolution of collections (12/14), persistent decrease of bilirubin in obstructive jaundice (3/3), clinical improvement in AC (3/5). Late (> 5 days) complications were recorded in 3 patients: one stent migration during necrosectomy, one symptomatic jaundice for CBD compression and one stent obstruction for food impaction. One patient with AC and severe multiple comorbidities died for sepsis one week after endoscopy.

**Conclusions** LAMs are an effective tool in management of PC, WOPN, post-surgical collections, AC and palliative biliary drainage.

### eP222V ENDOSCOPIC ULTRASOUND-GUIDED GALLBLADDER DRAINAGE AS RESCUE THERAPY IN A PATIENT WITH ADVANCED PANCREATIC NEOPLASIA AND SEVERE CHOLANGITIS

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DOI 10.1055/s-0040-1704988

An 84-year-old female with an advanced pancreatic cancer underwent an ERCP and a fully covered metal stent was positioned just under the cystic duct insertion. Then an uncovered duodenal stent was placed. 3 months later she was hospitalized for severe cholangitis due to biliary stent occlusion and worsened duodenal infiltration. An EUS-guided drainage from the common bile duct such as a percutaneous one were not feasible. We performed an EUS-guided gallbladder drainage using a Hot AXIOS stent. The procedure was quick, safe and technically successful as a rescue therapy to treat a severe cholangitis in a patient with advanced pancreatic neoplasia.

### eP223 EUS-FNA AND ERCP IN THE PRESURGICAL DIAGNOSIS OF MALIGNANT BILIARY STENOSIS: PRELIMINARY RESULTS OF A COMPARATIVE STUDY

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DOI 10.1055/s-0040-1704989

**Aims** Endoscopic ultrasonography (EUS) with fine needle aspiration (EUS-FNA) has been proposed in addition to cholangiopancreatography (ERCP) for tissue sampling in the diagnosis of a malignant from non-malignant biliary stenosis. Aim of the study was to evaluate the diagnostic power of EUS-FNA alone and in combination with ERCP in biliary stenosis.

**Methods** 134 patients, hospitalized for jaundice, underwent EUS plus CT scan or MRI. Tissue sampling by EUS-FNA and/or brushing-forceps biopsy during ERCP was performed if a cholangiocarcinoma (CCA) was suspected. Final diagnosis was defined based on histopathology of surgical specimen or outcome at follow-up.

**Results** 56 patients (42%) underwent EUS plus MRI, 42 (32%) EUS plus CT scan, and 36 (26%) EUS plus CT scan plus MRI. ERCP was performed in 65 patients, in 16/65 EUS-FNA and ERCP were carried out in a same session. A biliary stenosis was diagnosed in 19 patients, which was a CCA in 13 (10%) and a benign condition in 6. The remaining 115 patients had a non-stenosing benign condition. EUS findings were diagnostic in 11/13 patients with CCA. Sensitivity, specificity and diagnostic accuracy in CCA were: 85%, 97% and 95% for EUS-FNA alone; 82%, 100% and 88% for EUS-FNA plus ERCP forceps biopsy and brushing.

**Conclusions** EUS shows a high diagnostic accuracy in diagnosing malignant and non-malignant biliary stenosis. The possibility to perform EUS-FNA for tissue acquisition in a same session of ERCP may increase the diagnostic accuracy and reduce the time for diagnosis.

### eP224 NODAL RECURRENCE TREATED WITH ENDOSCOPIC ULTRASOUND-GUIDED RADIOFREQUENCY ABLATION

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**Aims** EUS-guided ablation procedures are emerging as a minimally invasive therapeutic alternative for locally advanced pancreatic cancer, pancreatic neuroendocrine tumors and pancreatic cystic lesions. This is a safe and technically easy procedure with few complications. In an animal model also demonstrated successful ablation of lymphatic nodes.

**Methods** Description of two cases of EUS-guided ablation of solid gastrointestinal tumors performed in our hospital between 2017–2019.

**Results** Case 1: 65-year-old patient diagnosed with stenosing colon adenocarcinoma T3N1M0, treated by surgery and adjuvant-QT. Four years later, a nodal recurrence (4x5 cm) that infiltrates the upper mesenteric vein was observed. Chemotherapy and radiofrequency ablation were subsequently proposed. Two ablation sessions (Dec-17, Apr-19) were held for which a EUSRA RF catheter 1 Fr (EMcision, London, UK) with 19 G needle (9–10 passes for 10–20 seconds at 50 W) was used. We had one intraprocedure complication (gastric wall hematoma). In the following month there was an increase of the lesion size and subsequently metastatic liver was observed.

Case 2: 66-year-old patient diagnosed with gastric fundus adenocarcinoma T4aN3, treated with perioperative chemotherapy and surgery. One year later, the patient experienced a single nodal relapse (20 mm) above the celiac axis. QT chemotherapy was initiated and radiofrequency ablation was subsequently proposed, for which a EUSRA RF electrode with 19 G needle (STARmed, Koyang, Korea) was used (two 10 second ablations at 50 W). The absence of the lesion and no signs of recurrence at other levels were observed in a follow-up CT performed 3 months later.

**Conclusions** A patient is currently kept free of recurrence and the other, despite presenting disease progression, we think of an increase in survival in relation to the technique. We can conclude that radiofrequency ablation of a local nodal recurrence of solid gastrointestinal tumors is a simple technique that might improve the results of chemotherapy and increase survival in selected cases.

## eP225 EUS-FNA FOR RECTAL HYPOECHOIC SOLID SUBEPITHELIAL LESION DIAGNOSED BY EUS

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**Aims** The frequency of histological types and the usefulness of EUS-FNA for rectal subepithelial lesions (RSEL) whose EUS image shows a hypoechoic solid mass are still unknown. The aim of this study is to clarify them.

**Methods** From January 2003 to March 2019, 25 consecutive patients who underwent EUS-FNAs for RSEL whose EUS image showed a hypoechoic solid mass were evaluated prospectively. The reference standards for the final diagnosis were surgery (n = 10), or clinical follow-up (n = 15). We used 22 G or 25 G FNA needles and performed rapid on-site cytopathological examination and immunohistochemical analysis in all lesions.

**Results** There were 6 FNA specimens from the recto-sigmoid colon, 5 from the upper rectum, and 14 from the lower rectum. The final histopathological diagnoses (Surgery or EUS-FNA) included 6 cases of endometriosis (24%), 4 cases of GIST (16%), 3 cases of recurrence of rectal cancer (12%), 2 cases each of carcinoid, rectal implantation cyst, and leiomyoma (8% each), and 1 case each of metastatic cancer, schwannoma, malignant lymphoma, and inflammatory change (4% each). The frequency of malignant tumors in RSEL whose EUS image showed a hypoechoic solid mass was 48% (11/23). The diagnostic rate was 92% (23/25). In 10 surgically resected cases, the diagnostic accuracy of EUS-FNA was 100%. There were no complications.

**Conclusions** About half of RSEL whose EUS image show a hypoechoic solid mass are malignant tumors. EUS-FNA for RSEL whose EUS image show a hypoechoic solid mass is a safe and accurate method. It should be taken into

consideration in decision making, especially in early diagnosis and early treatment for this condition.

## eP226 ENDOSCOPIC ULTRASOUND-GUIDED BILIARY DRAINAGE USING ELECTROCAUTERY-ENHANCED LUMEN APPOSING METAL STENTS IS A SAFE AND EFFECTIVE PROCEDURE FOR DISTAL MALIGNANT BILIARY OBSTRUCTIONS

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**Aims** Endoscopic ultrasound-guided biliary drainage (EUS-BD) for distal malignant biliary obstruction (MBO) is the treatment of choice after unsuccessful of endoscopic retrograde colangiopancreatography (ERCP). However the use of conventional, not dedicated stents carries a high risk of biliary leakage and adverse events. Lumen apposing metal stent with a cautery-enhanced delivery system (EC-LAMS) is a novel and promising tool that allows a BD in a single step procedure. In this study we evaluated the efficacy and safety of this stent in patients with MBO.

**Methods** We conduct a retrospective analysis of consecutive patients affected by MBO who, between April 2017 and September 2019, underwent a EUS-BD with EC-LAMS after ERCP failure. Primary outcome was to evaluate the technical and clinical effectiveness of the procedure. Secondary outcomes were occurrence of adverse events, procedure time, and stent patency.

**Results** Fourteen patients with MBO underwent BD using the study device. Technical success was obtained in 93% of patients (13/14), with a transduodenal bile duct access in 93% (13/14). Clinical success, defined as decline of serum bilirubin levels of 50% within 2 weeks, was obtained in 92% of the patients (12/13). Mean time of procedure was 17.8 minutes (DS 6.69). No procedure-related mortality was noted. In 2 patients with resectable pancreatic adenocarcinoma the Whipple procedure was performed after EUS coledocoduodenostomy for preoperative drainage and the duodenal LAMS did not interfere with surgery. Post procedural adverse events included fever (N = 2) and abdominal pain (N = 1), both treated conservatively. During the follow up 1 patient showed food impaction of the stent successfully treated by endoscopic debridement removal.

**Conclusions** EUS-BD with EC-LAMS is an effective and easy to perform treatment in MBO, with low rate of adverse events. Additional prospective studies are needed to validate this data, assess long term efficacy of the LAMS and its feasibility in patients candidate for pancreatic surgery.

## eP227 ENDOSCOPIC THERAPY OF AN AFFERENT LOOP SYNDROM WITH CHOLANGITIS IN A PATIENT WITH PANCREATIC CANCER

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DOI 10.1055/s-0040-1704993

**Aims** The afferent loop syndrom is a rare complication after roux-en-y gastric bypass (RYGB). Although surgical therapy is the standard, many patients are not suitable for surgery due to poor medical conditions. In those patients interventional endoscopy should be considered. We report the case of an endoscopic gastrojejunostomy in a patient with afferent loop syndrom and cholangitis.

**Methods** The 84-year old male patient was diagnosed with pancreatic cancer in 04/2018. Unfortunately the surgical exploration found peritoneal carcinosis and hepatic metastases. Thus a RYGB with a biliodigestive anastomosis was created. The patient refused palliative chemotherapy and presented in 10/2019 with jaundice and cholangitis.

**Results** Computertomography showed a widely dilated afferent loop with consecutive biliary dilation. We discussed all therapeutic options with the patient

and decided to perform an endoscopic gastrojejunostomy of the afferent loop. After transgastric endosonographic visualization of the dilated afferent loop a lumen apposing metal stent (LAMS) was placed. In the following days the patients condition improved and he was discharged three days later. Four weeks after endoscopic gastrojejunostomy endoscopy through the LAMS was performed and showed a regular biliodigestive anastomosis without stenosis. **Conclusions** The endoscopic gastrojejunostomy with LAMS is a new helpful procedure especially for patients in poor medical condition, which can prevent invasive surgery and help to improve prognosis and quality of life

### eP228V EFFECTIVENESS OF EUS GUIDED THROMBIN INJECTION FOR BLEEDING STOMAL VARICES

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DOI 10.1055/s-0040-1704994

Stomal varices are uncommon, but can have a mortality of 40% on initial presentation. Currently, there are no established standard treatments for stomal varices bleeding.

A 50 year old chronic liver disease patient who has had previous colectomy and ileostomy had presented with recurrent stomal bleeding. Patient was referred for transjugular intrahepatic shunt (TIPS). While waiting, patient had further significant bleeding. Linear EUS was passed through the stoma, and using 22 g needle, human thrombin reconstituted with 0.9% saline (2500 IU/5 mls), was injected. Complete obliteration of varices was noted with just 3 mls of thrombin. Varices remain obliterated at 4 weeks.

### eP229V EUS-GUIDED DRAINAGE USING LUMEN APPOSING METAL STENT AND TRANSCUTANEOUS ENDOSCOPIC NECROSECTOMY AS DUAL APPROACH FOR THE MANAGEMENT OF COMPLEX WALLED-OFF NECROSIS. A CASE REPORT

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DOI 10.1055/s-0040-1704995

A 61 years old man after 3 weeks from the onset of acute necrotizing pancreatitis (ANP) developed signs of severe sepsis. The CT scan showed a large WOPN, with extension to the pelvic paracolic gutter, so he underwent to EUS-guided drainage using EC-LAMS. After an initial resolution of sepsi, 3 weeks later the patient developed multiorgan failure (MOF). The CT-scan showed an increase of the amount of necrosis to the pelvic paracolic gutter. Therefore, we placed an esophageal SEMS transcutaneously and performed 5 sessions of necrosectomy. The patient rapidly resolved sepsi and a complete resolution of the necrosis was obtained.

### eP230 V NEEDLE TRACT SEEDING (NTS) OF THE STOMACH AFTER EUS-GUIDED-BIOPSY OF A RENAL CANCER METASTASIS OF THE PANCREAS – ARTERIAL BLEEDING AFTER BIOPSY MANAGED BY OTSC

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DOI 10.1055/s-0040-1704996

A 62-year-old patient underwent left-sided nephrectomy due to a renal cell carcinoma (RCC) in 2011. The postoperative tumor classification was pT1a, pNx, L0, V0, G2, R0.

Six years later, the patient presented with abdominal pain. A CT scan showed pancreatic lesions. EUS-guided transgastral needle biopsy was performed, which showed recurrence of the RCC. Pancreatectomy with splenectomy were performed. Six months later, an egd showed a mucosal lesion of the posterior stomach wall. Subsequent biopsy led to an arterial bleeding. An OTS-Clip was applied to control the bleeding. As the biopsy revealed RCC-metastases, a gastric wedge-resection was performed. The metastasis was considered as NTS of EUS-FNB.

### eP231 COMPARISON BETWEEN ACCURACY OF FLEXIBLE NITINOL FINE NEEDLE ASPIRATION(FNA) AND FINE NEEDLE BIOPSY(FNB) ENDOSCOPIC ULTRASOUND (EUS) NEEDLES FOR SOLID PANCREATIC MASSES-RETROSPECTIVE BICENTRIC ANALYSIS

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DOI 10.1055/s-0040-1704997

**Aims** to investigate the accuracy of flexible nitinol FNA and EUS-FNB needle for pancreatic masses in 2 Austrian centers(Klagenfurt and St.Pölten).

**Methods** Our bicentric study included EUS biopsies of pancreatic masses performed between 02/2017-03/2019-Klagenfurt and between 11/2018-03/2019-St.Pölten. Olympus (19 or 22 G)flexible nitinol needle were used for EUS-FNA and SharkCore (19 or 22 G) or Boston Acquire (22 G) were used for EUS-FNB.

Needles were chosen according to the availability in the centers or endoscopist preference.

124patients with 134EUS-FNA/FNB(Klagenfurt -90,St. Pölten-44) of solid pancreatic masses were enrolled in this retrospective study.Final diagnosis was established through a combination of histopathology, surgery, radiological findings, autopsy and clinical follow-up.

The accuracy was calculated as the proportion of true positive + true negative cases/total number of cases, while Se for malignancy represented the rate of true positive samples/all malignant cases.

Positive EUS-FNA/FNB was defined as the finding of at least atypical cells with dysplasia.

An“experienced”endosonographer had performed at least 225 EUS including 50 interventions (at least 25 performed for pancreatic tumors).

**Results** The mean age of patients was 64.9 ± 14.8 years(55.6% male).The most common final diagnosis was adenocarcinoma(61,2%), following by and pseudotumor due to chronic pancreatitis(11.2%) and inflammation(10.4%). Overall, 70.9% of cases presented with malignancy.

► Tab. 1

	Accuracy	Se for malignancy
Experienced endosonographers/Trainees	FNA:14/19(73.6%) vs. FNB:41/46(89.1%), p = 0.23/FNA:40/57 (70.1%)vs. FNB:9/12 (75%),p = 0.99	FNA:9/14(64.2%)vs. FNB:27/30(90%), p = 0.09/FNA:27/42 (64.2%)vs. FNB:7/10 (70%),p = 0.78

The EUS-FNA needle were used in 64/83(56.7%) cases. Trainees performed 51.4% of all EUS.

The overall accuracy and Se for detecting malignancy were: 77.6% and 66.1%, respectively.

The accuracy and Se for malignancy for EUS-FNB was significantly higher as compared with EUS-FNA needles: 86.2% vs. 71%,  $p = 0.04$  and 85% vs. 64.2%,  $p = 0.04$ .

The use of EUS-FNB needles by experienced endosonographers was associated with 90% Se for malignancy

**Conclusions** The use of EUS-FNB needles in centers without on-site pathologist is associated with increased accuracy for EUS-guided biopsy of solid pancreatic masses, especially when there are used by experienced endosonographers

## eP232V DIRECT ENDOSCOPIC NECROSECTOMY (DEN) OF WALLED-OFF PANCREATIC NECROSIS (WOPN) AFTER DRAINAGE WITH ELECTROCAUTERY ENHANCED LUMEN-APPPOSING METAL STENT (EC-LAMS): TIME FOR HOT-SNARE TREATMENT? A CASE REPORT

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DOI 10.1055/s-0040-1704998

A 60-years old woman developed a 10 cm-WOPN with signs of persistent infection. Therefore, she underwent to Endoscopic Ultrasound (EUS)-guided drainage using EC-LAMS. Because of the presence of large amount of solid necrosis, after 3 days we performed a contrast-enhanced EUS (CH-EUS) in order to exclude the presence of large vessels within the necrosis and therefore we performed DEN using both cold and hot-snare by bringing the tissue towards the gastric side. No complications occurred.

This is the first report of DEN using hot-snare and could provide an innovative approach for hard-to-treat WOPN.

## eP233 NEW INSIGHTS ON THE PROGNOSTIC VALUE OF KRAS MUTATIONAL STATUS EVALUATED ON EUS-GUIDED FINE-NEEDLE ASPIRATION SPECIMENS IN PATIENTS WITH UNRESECTABLE PANCREATIC CANCER

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**Aims** The aim of this study was to investigate the prognostic role of KRAS mutational status within the primary tumor in patients with unresectable locally advanced/metastatic pancreatic ductal adenocarcinoma (PDAC).

**Methods** We retrospectively examined a cohort of 24 patients with unresectable PDAC who underwent EUS-guided fine needle aspiration (EUS-FNA) for diagnosis at our institution. FNAs were collected in RNAlater and stored at -80 C. The Exon-2 KRAS mutational status was evaluated on the EUS-FNA samples using droplet digital polymerase chain reaction (ddPCR). The Kaplan-Meier method, log-rank test, and the t-test were used to evaluate the impact of KRAS status on the overall survival (OS), adjusting for age, gender, stage of disease and treatment regimen.

**Results** Sixteen patients with PDAC whose tumors harbored KRAS mutations (*G12D*: 7; *G12V*: 7; *G12R*: 2) and 8 patients whose tumor were KRAS wild type were included in the study. 80% (8/10) of the patients with metastatic PDAC had a KRAS mutation. An analysis of OS showed a trend toward a longer OS in the wild type group (mutant KRAS, calculated median OS of 188 days vs. wild type KRAS, median OS of 304 days;  $P = 0.14$ ). All patients received first-line gemcitabine-based chemotherapy. No significant difference was noticed in response to therapy between the KRAS wild type and mutant patients.

**Conclusions** Accurate determination of KRAS mutational status from EUS-FNA specimens has important clinical implications in the diagnostic, prognostic and therapeutic aspects of PDAC care. Patients with KRAS wild type tumors seems to have a longer OS and a better prognosis, independent of the therapeutic regimen. These findings provide further support for testing the KRAS mutation subtypes in advanced PDAC to evaluate prognosis. This may be an important factor in trial concepts and outcomes as well.

## eP234 DIAGNOSTIC PERFORMANCE OF FRANSEEN-TIP NEEDLE EUS-FNB IN COMPARISON TO EUS-FNA IN SOLID PANCREATIC LESIONS

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**Aims** The aim of the study is to compare the diagnostic yields of EUS FNA and EUS FNB with 22 G Franseen-tip Needle in patients with solid pancreatic masses.

**Methods** We have analyzed data from 60 patients with solid pancreatic lesions, who underwent EUS guided tissue sampling with FNA 22–25 G or FNB 22 G Franseen Tip Needle (Aquire, Boston Scientific) in our centre between November 2018 and November 2019. The number of needle passes in every procedure was exclusively related to endoscopist's opinion (not standardized). Biopsy specimens were evaluated by experienced pathologist, blinded to the sampling technique. Rapid on-site evaluation was not available. The final diagnosis was confirmed by surgical specimen, follow-up (clinical evaluation) and/or a second biopsy. Data was analysed in a prospective manner and diagnostic yield of FNA and FNB was compared.

**Results** Thirty six patients (20 male) underwent FNA puncture, 24 (14 male) were assessed with the FNB technique. Chronic pancreatitis was present in 18% (11/60) of the patients. Tumors' average size was 37 mm in the FNA Group and 30 mm in FNB group ( $p > 0.05$ ). The specificity and sensitivity for FNA were 96% and 82%, and for FNB 100% and 92% ( $p > 0.05$ ). Based on final diagnosis FNB technique was accurate in 92% vs. 82% in FNA group;  $p > 0.05$ . The average count of needle passes per patient was fewer in the FNB group compared to the FNA group (2.8 vs. 3.5,  $p < 0.05$ ). Further, in 69.23% of cases FNB provided histological specimen with preserved architecture, compared to 40.6%, in FNA  $p < 0.05$ . Post-biopsy complications were not detected in both groups.

**Conclusions** FNA and FNB provide equivalent accuracy in the diagnosis of pancreatic tumors with equivalent safety profile. FNB performs better in ensuring informative tissue specimen with fewer needle passes needed.

## eP235V ENDOSCOPIC DUAL BILIARY DRAINAGE FOR UNRESECTABLE MALIGNANT HILAR BILIARY STRICTURES (WITH VIDEO)

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DOI 10.1055/s-0040-1705001

EUS-guided hepatogastrostomy (EUS-HGS) is an emerging technique of biliary decompression. We evaluated the efficacy of endoscopic dual biliary drainage using a combination of right-sided transpapillary stenting and

left-sided EUS-HGS for unresectable malignant hilar biliary strictures (UMHBS). Three patients with high-grade UMHBS underwent endoscopic dual biliary drainage. Technical and clinical success rates were 3/3. Stent revisions were successfully performed via HGS route in all cases. The mean follow-up period was 180 days and stent patency was sustained in all the period with stent revision. Endoscopic dual biliary drainage may provide a possible chance of longer stent patency and easier stent revision.

### eP237V CHOLEDOCHO-NODAL FISTULA POST TACE OF LNS IN HCC PATIENT CAUSING OBSTRUCTIVE JAUNDICE

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DOI 10.1055/s-0040-1705002

60 years old male patient with hepatocellular carcinoma and history of previous TACE of hepatic focal lesion and one suspicious metastatic LN presented with extrahepatic biliary obstruction for ERCP. ERCP showed distal saccular lesion in the CBD that filled with dye on cholangiogram consistent with choledochal cyst type III despite distal CBD stricture. Successful insertion of straight plastic stent 10 cm 10 fr to bypass the stricture with good drainage. EUS examination revealed stent in CBD with cystic lesion 2.5 × 3.7 cm in diameter with echogenic debris. Needle aspiration revealed bile and necrotic material (Cholechocho-nodal fistula after degeneration)

### eP238 ENDOSCOPIC ULTRASOUND GUIDED GASTROENTERIC ANASTOMOSES IN FIVE PATIENTS WITH UPPER GASTROINTESTINAL MALIGNANCIES – A RETROSPECTIVE CASE SERIES

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DOI 10.1055/s-0040-1705003

**Aims** Gastric outlet obstruction (GOO) is a common complication to advanced malignancies in the upper gastrointestinal (GI) tract. Traditionally, first line palliative treatment consists of duodenal stenting or surgical gastroenteric anastomosis (GEA). The effect of duodenal stenting may be limited by tissue ingrowth (uncovered stents) or stent migration (fully or partially covered stents) and the patient may be unfit for surgery. Endoscopic ultrasound-guided GEA (EUS-GEA) may then be an alternative.

**Methods** From January to November 2019, all patients that underwent EUS-GEA in our department were included in a retrospective case series. The indication was GOO in all patients. The stents were all lumen apposing metal stents (HOT AXIOS, Boston Scientific Corp) with a diameter and saddle length of 15mm and 10 mm, respectively.

**Results** Five patients were included with age ranging from 66 to 91 years. Three patients had pancreatic cancer, one had duodenal cancer, and one had pancreatic metastases from a colonic cancer. The intervention was technically successful in all patients (100%). However, due to aspiration caused by a second lower obstruction, one patient deceased the day after the procedure. All patients resumed full per oral nutrition and none were readmitted due to GOO. One patient resumed palliative chemotherapy and is still alive seven months after the intervention, while the remaining three patients deceased between six days and 2 months post intervention due to their malignant disease.

**Conclusions** GOO is a severe and possibly life-threatening complication to upper GI malignancy. EUS-GEA can provide long-term palliation in GOO patients possibly enabling reinstitution of oncological treatment, making it an important tool in palliative patient care. However, prospective, comparative trials are warranted.

### eP239 SAFETY OF EUS FOR PANCREATOBILIARY LESIONS IN PATIENTS IN CIRRHOSIS

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DOI 10.1055/s-0040-1705004

**Aims** We aim to investigate the safety and adverse events of EUS with FNA and/or FNB in cirrhotics

**Methods** Case control study using the 2016 National Inpatient Sample (NIS) using ICD10-CM codes to identify patients who underwent EUS with and without FNA or FNB for pancreatobiliary solid lesions (PBSL). We compared cirrhotics with non-cirrhotic controls. Primary outcome was rate of procedural complications. Subgroup analysis to compare compensated and decompensated cirrhosis as per validated BAVENO VI classification.

**Results** A total of 9,731 EUS were performed in 2016 out of which 4% (n = 404) patients were cirrhotics. Of these, 41% (n = 169) had decompensated cirrhosis (BAVENO 3–4). 27% (n = 110) of cirrhotics underwent EUS with either FNA or FNB for PBSL. Non-cirrhotics were more likely to undergo EUS with FNA/FNB for a biliary malignancy when compared to other indications (29.2% vs. 9.1%; p = 0.02). Decompensated cirrhotics had higher rates of ascites (45.4% vs. 10.2%; p < 0.01). EUS with and without FNA/FNB was safe among compensated cirrhotics. However, decompensated cirrhotics were three times more likely to have immediate procedural complications (aOR 3.2; p < 0.01), more likely to have post-EUS perforation (aOR 74.1; p < 0.01), higher mortality (aOR 2.7; p < 0.01), post-procedural SBP (aOR 17.6; p < 0.01) and sepsis (aOR 4.6; p < 0.01), longer hospital LOS (10.7 vs. 7.6 days), higher total healthcare charges (\$47,940; p < 0.01), higher total hospital cost (\$9,356; p < 0.01).

**Conclusions** Decompensated cirrhosis a risk factor for post-procedural complications leading to higher mortality and poor outcomes. Purportedly, it is due to the presence of ascites that predispose to infection, SBP and sepsis rather than coagulopathy and bleeding. Guidelines do not recommend antibiotics for EUS FNA/FNB of PBSL, however our study suggest that a short course of peri-procedure antibiotics may be considered to improve outcomes of decompensated cirrhotics undergoing EUS with FNA/FNB for PBSL

### eP240 ROLE OF ENDOSCOPIC ULTRASOUND IN IDIOPATHIC ACUTE PANCREATITIS

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**Aims** Acute pancreatitis has no obvious cause after clinical, laboratory and radiologic investigation in 10%-30% of patients.

Endoscopic ultrasound is promising and is particularly effective in the exploration of the bilio-pancreatic region.

**Methods** This is a descriptive retrospective study, including 58 patients between January 2008 and September 2019. The epidemiological data of the patients and the etiology of acute pancreatitis were evaluated. The examination was performed using a radial endoscopic ultrasound in all cases. Data collection and statistical analysis were performed by the SPSS22.0 software.

**Results** 482 patients underwent high endoscopic ultrasound during the study period, of whom 58 had unexplained acute pancreatitis (12%).

The average age of our patients was 55.7±16.95 years with extremes ranging from 18 to 89 years. The sex ratio (H/F) was 0.8 with a slight female predominance.

Endoscopic ultrasonography was performed transbulbally in 63.8% of cases (n=37), transgastric in 3.4%(n=2) and combined in 32.8% of cases (n=19).

15.5% of patients had a history of cholecystectomy (n=9). Gall bladder was lithiasic in 29.3% of cases (n=17). Main bile duct was normal in 66.1% of cases (n=37) and dilated in 10.3%(n=6). Wirsung was fine in 86% of cases (n=49).

The diagnosis was retained in 37.9% of patients (n=22). Biliary origin was identified in 17.2%(n=10) of patients; of which 7 benefited from a complementary ERCP at the same time anesthetic. A tumor cause was found in 6.9% of cases (n=4). Chronic pancreatitis was detected in 13.8% of cases (n=8).

Otherwise, no obvious cause was found in 62.1% of patients(n=36).

**Conclusions** Endoscopic ultrasound is a very sensitive imaging modality for the detection of the etiologies of acute pancreatitis. Biliary stones and chronic pancreatitis are the most important etiologies in our study.

## eP241V GASTROPANCREATIC FISTULA WITH FISH-MOUTH SIGN

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DOI 10.1055/s-0040-1705006

We report a 72-year-old female with several pancreatitis episodes, including infected pancreatic fluid collection(PFC) drained at another institution. She was referred due to dilation of main pancreatic duct(MPD) in imaging and communication with gastric antrum. Endoscopically, a fistulous orifice in the antrum was apparent, with gelatinous content; endoscopic ultrasound showed dilated MPD (40mm-body) with loss of interface with the stomach. MPD fine-needle aspiration revealed a mucinous content. Cytologic analysis confirmed high-grade IPMN. Although IPMN can fistulize, in this patient most likely resulted from a prior procedure, underlying the importance of correct workup prior to PFCs drainage to exclude cyst neoplasm.

## eP242 ENDOSCOPIC ULTRASOUND-GUIDED FINE-NEEDLE ASPIRATION FOR SUBEPITHELIAL LESIONS: A SINGLE CENTRE EXPERIENCE

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**Aims** Endoscopic ultrasound-guided fine-needle aspiration (EUS-FNA) is commonly used for obtaining tissue from gastrointestinal subepithelial lesions (SEL). However, the diagnostic accuracy of this technique ranges widely (46%-93%) depending on multiple factors. The aim of our study was to evaluate diagnostic yield of EUS-FNA of SEL and factors related to sampling adequacy.

**Methods** Single centre retrospective study including consecutive patients with SEL submitted to EUS-FNA from January/2012 to October/2019. The final diagnosis was based on clinical and imaging follow-up and/or pathology. Data were collected from electronic medical reports.

**Results** A total of 44 patients were included (male: 52.3%; median age: 76 (59.7-74.7 years). The majority of patients (59.1%) were asymptomatic. Most lesions were gastrointestinal stromal tumours (45.5%) and carcinomas (13.6%), were mostly located at stomach (47.7%) and duodenum (22.7%) and were mostly originated from *muscularis propria* (54.5%) and *muscularis mucosa* (11.4%). The median size of lesions was 30.0 (19.9-50.0) mm, a 22G needle was used in 90.9% of cases and the median number of passes was 3 (2.3-4.0). Sensitivity, specificity, positive and negative predictive values and diagnostic accuracy for malignancy were 71.4%, 77.8%, 100%, 63.6% and 72.7%, respectively. No adverse events were documented. Esophageal or gastric localizations (vs. duodenum and rectum) was predictive for sampling inadequacy (OR: 7.56; 95% CI: 1.08-52.9) while no differences were found between different needle size (22G vs. 25G: 70% vs. 100%; p=0.30); number of passes (≤3 vs. >3: 78.1% vs. 50.0%; p=0.07); lesion size (≤20 mm vs. >20 mm: 50.0% vs. 78.1%; p=0.08); origin layer (*muscularis mucosa* vs. *submucosa* and *muscularis propria*: 90% vs. 64.7%; p=0.12).

**Conclusions** Our diagnostic yield is similar to reported in the literature, making EUS-FNA an adequate method for obtaining tissue from SEL. However, it is slightly lower than the standard defined by European Society of Gastrointestinal endoscopy performance guidelines. Lesion location was the only predictor for sampling adequacy.

## eP243V BLEEDING DURING ENDOSCOPIC ULTRASOUND-GUIDED FINE NEEDLE ASPIRATION (EUS-FNA) IN PANCREATIC CYSTIC NEOPLASM

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DOI 10.1055/s-0040-1705008

A 51-year-old female patient. Began 6 months ago with intermittent abdominal pain.

**Abdominal CT Scan** suggests as the first possibility serous cystadenoma.

**Endoscopic ultrasound:** bleeding during endoscopic ultrasound-guided fine needle aspiration.

**Follow up** The patient refuse surgical treatment. Then started enteral diet, the patient evolved satisfactorily. During her 2-year follow-up the patient is asymptomatic

**Conclusions** To avoid complications during endoscopic ultrasound-guided fine needle aspiration (EUS-FNA) in pancreatic cystic neoplasm we must look for a suitable window. Treatment of complications may not be surgical in some patients and still have a good outcome.

## eP244 LEARNING CURVE OF EUS-GUIDED TISSUE ACQUISITION, A TIMELAPSE STUDY AT A NEWLY ESTABLISHED EUS SERVICE

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DOI 10.1055/s-0040-1705009

**Aims** EUS is gaining ground in today's diagnostic routine due to its ability to get dynamic, accurate representation of peri-gastro-duodenal structures, but mostly due to its capability of obtaining tissue samples amenable to histopathologic studies.

**Methods** The accuracy of sampling pancreatic malignant tissue through EUS-FNA of a novice trainee at a tertiary center was retrospectively assessed over the first 150 procedures, spread over 25 months. Three tertiles of 50 patients each were used to define the measured parameters.

**Results** We detected increasing accuracy of tissue acquisition associated with growing number of procedures per month. This proportionality was assessed by the parameters of diagnostic accuracy with slight increase in the second and third groups as compared with the first one (from 82 % to 90% and 90% respectively), number of passes declining from an average of 3 in the first group to about 2 in the second and third tertiles, better evaluation of invasiveness of the primary tumor or metastatic spread as compared with CECT or MRI imaging. A total of 45 patients in the second and third groups were correctly diagnosed by both EUS and CT/MRI, up from 41 in the first group. Four patients in the third group were misdiagnosed by CT or MRI, up from 1 in the second and none in the first groups, but with adenocarcinoma found at EUS. Four patients in the first group and only one in the third were misdiagnosed by all imagistic methods, but interactive imaging ultimately led to surgery or definitive diagnostic. Altogether, a total of 40 patients were eventually sent to surgery, 15 of

which were offered curative surgery by means of Whipple operation, without any relation to diagnostic accuracy.

**Conclusions** We found that the EUS operator reaches pretty readily a plateau when it comes to accurately obtaining malignant tissue.

### eP245V TRANSCAVAL ENDOSCOPIC ULTRASOUND-GUIDED FINE NEEDLE ASPIRATION FOR A LYMPHOMA DIAGNOSIS

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**DOI** 10.1055/s-0040-1705010

A transvascular EUS-guided puncture facilitated the diagnosis of an inaccessible lesion in the inter-aortocaval region. The use of fine needles, to achieve a stable and perpendicular plane to the vascular axis, seems the recommended measures to perform a transvascular puncture. A 77-year-old patient with constitutional syndrome, fever and detection by imaging of a solid, hypercaptant retroperitoneal lesion compromising the aorta and inferior cava vein. (I) First, a EUS-guided transduodenal FNA (22G) of a periaortic lesion, was insufficient for diagnosis. Finally, a transcaval EUS-guided FNA of an adenopathy using 25G needle (slow-pull technique) was successfully performed. ROSE confirmed atypical lymphocytes.

### eP246 OFF-LABEL ENDOSCOPIC ULTRASOUND (EUS) APPLICATIONS OF ELECTROCAUTERY-ENHANCED LUMEN APPOSING METAL STENT (ECE-LAMS) IN GASTROINTESTINAL ENDOSCOPY (GIE): A SINGLE CENTER CASE SERIES EXPERIENCE

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**DOI** 10.1055/s-0040-1705011

**Aims** Advancements in endoscopic equipment accessories and technical improvements of endoscopists have permitted a worldwide expansion of EUS-guided procedures with progressive rise of its indications in gastrointestinal (GI) diseases, stole from more invasive interventions including surgery and intervention radiology. Recently, ECE-LAMS (Electrocautery enhanced delivery system - Lumen apposing metal stent) allowed a single-step exchange-free apposition of two hollow cavity, creating endoscopic anastomosis or transluminal drainages [1-3].

**Methods** We conducted a single-center, retrospective review of 105 adult patients requiring ECE-LAMS placement for multiple indications between May 2017 to September 2019 at IRCCS-ISMETT Palermo. 10 patients (M:F 5:5) with off-label EUS-applications were enrolled: gastro-jejunal anastomosis for malignant gastric outlet obstruction (GOO) (n = 7), malignant afferent loop syndrome treatment by creating afferent-efferent loops anastomosis (n = 1), gastro-gastro-anastomosis directed ERCP inpatient with gastric-by-pass (n = 1) and pelvic abscesses drainage (n = 1) (Table 1). All procedures were performed under general anesthesia by expert skilled endoscopists with radiological EUS assistance. We used the balloon-assisted technique for GOO management (Video 1) and the free-hand fashion in the other cases (video 2).

**Results** ECE-LAMS size were: 15 × 10 mm (n = 5) and 20 × 10 mm (n = 5). Technical success was 100%. Adverse events were: 1 maldeployment case successfully treated by LAMS-in-LAMS technique and 1 early-bleeding case managed endoscopically. Oral feeding with soft diet was resumed after 24 hours in all upper indications. Clinical success was 100%. 2/8 oncological patients were successively candidate to pancreaticoduodenectomy with good outcome. LAMS removal was executed after 4 weeks in benign etiology and left in place for palliative ones.

**Conclusions** EUS-guided interventions with ECE-LAMS are feasible and safe for off-label applications, allowing to replicate surgical anastomosis with advantage of minimal invasiveness.

### eP247V EUS-GUIDED COMPLETE EMBOLIZATION OF VOLUMINOUS GASTRIC VARICES USING COILS AND GLUE INJECTIONS IN ONE SESSION

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**DOI** 10.1055/s-0040-1705012

Complete embolization technique of bulky IGV1 in a single session, using a combined placement of coils and glue injection, guided by EUS and fluoroscopy. A 78-year-old patient with autoimmune liver cirrhosis had hematemesis with hemodynamic instability.

- (i) EUS-guided puncture with 19G needle;
- (ii) Placement of 3 coils (35-7-18; 35-7-14 Nester, Cook);
- (iii) Glue injection (NBCA-MS combined with contrast (etioliized acid) in a 1:1 ratio (total: 4.5 mL glue; 9mL mixture).

Total 3 punctures (1 transcrural; 2 transgastric route). Immediate obliteration of Doppler flow. EUS follow up at 8 weeks: complete obliteration with absence of Doppler signal.

### eP248 EFFECTIVITY OF SINGLE PASS EUS-GUIDED FINE NEEDLE BIOPSY WITH A RECOGNIZABLE TISSUE CYLINDER

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**Aims** Fine needle biopsy (FNB) is replacing fine needle aspiration (FNA) as the standard on EUS-guided tissue acquisition. It's main advantage being a need of less passes to obtain a diagnosis. We aimed to determine if recognizing visible tissue in the sample was prognostic of a final diagnosis.

**Methods** Since we began using FNB needles we reported the presence of non-bloody cylinders and sent passes individually to pathology. When a non-bloody cylinder was found either stopping the procedure or a second pass were made. All the passes used the same needle (SharkCore 22G, Medtronic), the same endoscopist and slow stylet pull aspiration. Records where no tissue was recognized in the first pass were discarded. The pathology report specified for every pass the presence of tissue adequate for histologic characterization and whether the tissue diagnosis was relevant considering the clinical suspicion.

**Results** We reviewed 130 lesions where we found a non-bloody cylinder after the first FNB pass. Of those in 71 only one pass was made while in 59 a second pass was completed. A total 189 passes were made. Tissue histologically characterizable could be found in all 189 cases (100%).

In a pass-by-pass basis, each pass was considered diagnostic in 71/71(100%) with a single pass, in 115/118(97,4%) with two passes. The 3 non-diagnostic passes were due to presence of necrosis.

A final diagnosis, considering all the passes per each lesion, was obtained in 129/130(99,2%) of the lesions. In one case necrosis was found in the two passes. Further biopsies revealed an adenocarcinoma.

**Conclusions** Histology needles obtain diagnostic tissue with a single pass in the majority of cases. Recognizing a non-bloody cylinder is not a guarantee of a final diagnosis when necrosis might be present. In those cases additional passes targeting other areas should be made.

## eP249 FOUR YEARS OF EUS-GUIDED PANCREATIC FLUID COLLECTION DRAINAGE: OUR EXPERIENCE AT ST JAMES' HOSPITAL

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**DOI** 10.1055/s-0040-1705014

**Aims** To examine our centre's experience with the LAMS for pseudocyst drainage over the first four years of its use.

**Methods** Data from January 2016-August 2019 was retrospectively reviewed. Size of collection, insertion route, progress, date of removal, resolution of collection, complications and mortality were all recorded. Analysis was descriptive in nature.

**Results** 20 patients had a LAMS inserted during the study period, with pseudocyst or walled off necrosis as the indication. Mean size of collections was 79mm (median 74mm, range 50-150mm). 19/20 were inserted via transgastric route, 1/20 was inserted through the duodenum. All patients had a 15x10mm stent inserted. Mean number of days before removal was 49 (data missing on two patients).

Two patients had immediate arterial bleeds, but haemostasis was quickly achieved using balloon dilatation, and expansion of the stent. One patient's stent was dislodged, but was removed using a grasper and resulted in no complication. One patient had a buried LAMS, which had to be resected from within gastric wall endoscopically. One patient had a free perforation, as the cyst was not as well defined as appeared on cross sectional imaging and CT. This was managed conservatively.

In terms of mortality, there were no deaths at 30 days post procedure. One patient died eight weeks post insertion, from overwhelming sepsis; this patient had their stent inserted for palliative purposes, so this was not unexpected. One patient had a recurrence of his collection upon recommencement of excessive alcohol use.

**Conclusions** Our centre has experienced low rates of migration/dislodgement (5%), low rates of complications (10%) and 5% one year mortality. These results are on a par with other centres internationally. Regular use of LAMS for management of this cohort of patients is important in reducing morbidity and mortality, as well as improving quality of life post severe acute pancreatitis.

## eP250V EUS-GUIDED CHOLECYSTOGASTROSTOMY AS A PALIATIVE TREATMENT OF MALIGNANT BILIARY OBSTRUCTION

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**DOI** 10.1055/s-0040-1705015

73-year-old man with inoperable pancreatic cancer with two liver metastases was admitted for obstructive jaundice and biliary dilation on abdominal CT. Retrograde drainage via ERCP failed due to duodenal stenosis even after balloon dilation. EUS-guided drainage was indicated. Anatomical situation was not suitable for hepaticogastrostomy or choledochoduodenostomy, therefore cholecystogastrostomy with LAMS (15 mm width, 10 mm length) was performed. Decrease of bilirubin level after procedure was very quick. Concurrent gastric outlet obstruction was treated with duodenal stent (23 mm width, 120 mm length). Palliative oncological treatment followed.

## eP251 FEASIBILITY OF ORAL AND DUODENAL MICROBIOTA ANALYSIS OF PANCREATIC CANCER PATIENTS AND CONTROLS

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**DOI** 10.1055/s-0040-1705016

**Aims** Periodontal disease is a risk factor for pancreatic cancer (PDAC) onset and, recently, there has been evidence for gut bacteria being able to migrate into the pancreas and have a protumorigenic effect. The duodenal microbiota of PDAC cases has been described only in patients with tumor of the head, without taking into consideration the changes of the microbiome due to impaired exocrine pancreatic function or bile flow, thus being a consequence and not a cause of the tumor. The aim of our study was to evaluate the feasibility of oral and duodenal microbiome evaluation in a selected cohort of PDAC patients and controls.

**Methods** Patients with PDAC not obstructing the bile or pancreatic duct and healthy controls were enrolled with collection of the saliva and duodenal mucosal brushing (through either diagnostic EUS or upper GI endoscopy) in dedicated stabilizing solutions. Bacterial 16S RNA gene was extracted, amplified through polymerase chain reaction (PCR) and underwent Next Generation Sequencing (NGS). Results were analyzed and compared through Qiime2 software.

**Results** 7 PDAC patients and 3 healthy controls were enrolled. Bacterial 16S RNA gene was successfully extracted and sequenced through NGS in all cases (technical success=100%). Rarefaction data show that all samples were adequate for analysis, with increased observed Operational Taxonomic Units (OTUs) in PDAC cases saliva and duodenal brush, although not significant. In terms of Alpha and beta-diversity there was no difference in paired samples, probably due to the small sample size.

**Conclusions** Extraction and NGS analysis of saliva and duodenal microbiome of PDAC cases and healthy controls has a 100% of technical success. No significant differences were seen among samples in terms of alpha and beta-diversity, despite in the rarefaction data the observed OTUs were increased in the samples deriving from PDAC cases. Further studies on a larger population are advocated.

## eP252 A RETROSPECTIVE REVIEW TO COMPARE THE VALUE OF PANCREATIC CYST FLUID ANALYSIS AT EUS WITH POST-OPERATIVE HISTOLOGY

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**DOI** 10.1055/s-0040-1705017

**Aims** To assess clinical value of EUS-guided pancreatic cystic lesion FNA performed in TUH from 2012-2019.

**Methods** A retrospective review of the EUS database to identify all PCL cases. PCL characteristics, fluid cytology and CEA results were reviewed. Post-operative histology was reviewed in patients with subsequent surgery.

**Results** 291 patients (166 female) with PCLs were identified. Mean size was 17mm ±11.5mm. 93(31%) PCLs underwent FNA and were significantly larger (25.6±12.5mm) than PCLs not aspirated (12.85±8.2mm), p< 000.1.

70 of 93(75.2%) FNA samples were sufficient for cytology analysis: 36(51.4%) were acellular, 12(17.1%) diagnostic of mucinous PCL, 1(1.4%) neuroendocrine tumour, 1(1.4%)

malignant, 10(14.2%) inflammatory, 10(14.2%) serous. Mucin stained positive in 16/93(17%). 46/93 samples (49.4%) were suitable for CEA analysis. 17 cases had CEA level >192ng/ml.

Overall 34 of 93(44%) had a positive cytology, positive mucin stain or raised CEA indicative of a mucinous PCL.

Post-operative histology was available for 13 cases; 1 poorly differentiated Adenocarcinoma, 7 IPMN, 3 MCN, 1 NET, 1 Serous cystic adenoma.

11 patients had an FNA prior to surgery, 4 with a diagnostic cytology. 3 cytology reports matched histology post resection. 1 histology was poorly differentiated adenocarcinoma with minor component IPMN which was reported as IPMN at cytology. The sensitivity of FNA cytology was low at 30.00% (6.67-65.25%) but highly specific with 100.00% (CI 2.5%-100.00%) of our diagnostic cytology from FNA at EUS matching definitive surgical histology. 5 had CEA >192, mucin was present in 3 patients. 5 patients had no positive markers for a mucinous PCL.

**Conclusions** Where FNA was performed the return of cytology was modest; mucin staining and CEA analysis were of additive value in the overall assessment. Where definitive surgical diagnosis was available we found that cytology was accurate when diagnostic but the overall yield was low and not a reliably sensitive biomarker for diagnosis in our patient cohort.

### eP253V A CYSTIC PANCREATIC METASTASIS FROM OVARIAN CANCER: A CASE REPORT

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DOI 10.1055/s-0040-1705018

Pancreatic cystic lesions are usually primary tumors of the pancreas though metastasis from distant tumors are possible, with ovarian cancer metastases rarely reported. An asymptomatic 57-year old woman with ovarian cancer diagnosed in 2013 and treated with hysterectomy and chemotherapy was referred on July 2019 for a newly diagnosed pancreatic tail cystic lesion. EUS showed a unilocular cyst with thickened wall and an enhancing mural nodule of 20 mm. A similar cystic lesion was seen in the spleen. Cytological evaluation from EUS-FNA showed neoplastic malignant cells with PAX8 positivity, similarly to the immunohistochemistry pattern of the original tumor.

### eP254 EXPERIENCE WITH CYTOLYT SOLUTION IN ENDOSCOPIC ULTRASOUND-GUIDED TISSUE SAMPLING FOR SPECIMEN PRESERVATION AND EVALUATION

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DOI 10.1055/s-0040-1705019

**Aims** Although Endoscopic Ultrasound (EUS)-guided tissue sampling is widely used, the optimal sampling strategy remains subject of debate. We present our initial experience with liquid based cytology with a special fixative (Cytolyt solution).

**Methods** Data from patients with accessible echoendoscopic solid lesions prospectively collected were retrospectively analysed. Samples were taken with EUS-needle aspiration from February 2018 to May 2019. Demographic data were collected. Fisher test was used in order to evaluate the difference in the success of samples between lesions bigger and smaller than 2 cm.

**Results** Thirty patients were included: 53,3% men, with a median age of 68,5 years. Most of lesions were masses (53,3%), being the pancreas the most frequent location (40,0%). Most of the needle we used were of 25G (36,7%), with a median number of samples of 2 (minimum-maximum: 1-5). We sent the specimens in a methanol solution (Cytolyt) to be analysed later. Overall, 86,7% of the samples were adequate for the anatomopathologic study. There were no

statistical differences in success of the sample between lesions bigger and smaller than 2 cm (p = 0,716).

**Conclusions** Cytolyt solution as a fixation and procession technique seems to be an adequate option to avoid the presence of an anatomopathologist for samples obtained by (EUS)-guided tissue sampling from solid lesions.

### eP255 VALUE OF ENDOSCOPIC ULTRASOUND GUIDED FINE NEEDLE ASPIRATION (FNA) IN THE DIAGNOSIS OF SOLID PANCREATIC MASSES

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DOI 10.1055/s-0040-1705020

**Aims** To determine the performance of endoscopic ultrasound guided FNA of solid pancreatic tumors.

**Methods** A Retrospective study, over a period of 3 years, included all patients who had FNA of pancreatic solid masses. Endoscopic ultrasound guided FNA was performed under sedation, using fine needle of 22G or 19G, depending on the location of pancreatic masses. The techniques used were Slow Pull and aspiration (10-20cc). The samples were spread on slides and/or put in cytolyt. Number of passage during all the procedure was three, except if it was a hemorrhagic specimen.

**Results** Sixty-one patients were included, 64% (n=39) had solid masses of pancreas. Mean age was 61 years (31-87) with a male predominance of 64%. The location of the mass was cephalic (n = 20), uncinate (n = 8), isthmus (n = 1), corporeal (n = 6), corporeo-caudal (n = 4). The average number of passage by the fine needle was 2.54. Histological findings (±immunostaining) were dominated by pancreatic adenocarcinoma in 53.8, undifferentiated tumor proliferation in 5.1%, atypical cells in 7.6%, one case (2.5%) of pseudopapillary and solid pancreatic tumor (TPPS), one case of pancreatic lymphoma, and one case of autoimmune pancreatitis. The sample was acellular in 20%. Only one case was hemorrhagic, and only one case had normal pancreatic tissue. No complication related to the procedure was observed.

**Conclusions** According to our study, endoscopic ultrasound guided fine needle aspiration (FNA) has a positive diagnosis in 80%. Patients with negative diagnosis required a second diagnostic method depending on the context (ultrasound-guided percutaneous biopsy, CT-guided biopsy or surgical biopsy) after discussion in a multidisciplinary team approach.

### eP256V AN UNCOMMON RETROPERITONEAL GANGLIONEUROMA DIAGNOSED BY ENDOSCOPIC ULTRASOUND GUIDED FINE NEEDLE ASPIRATION (EUS-FNA)

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DOI 10.1055/s-0040-1705021

A 72-year-old patient was referred for one-year intermittent abdominal pain. Abdominal ultrasound showed a 7.3 × 7.7 cm retroperitoneal mass, which partially compressed the inferior cava vein. Radiological imaging demonstrated a retropancreatic lesion, heterogeneous, with well-defined edges, without clear dependence of any adjacent structure. Cytological diagnosis of ganglioneuroma was made by EUS-FNA. The immunohistochemistry in the resection specimen revealed confirmed the previous finding. Ganglioneuromas are rare benign tumors, diagnosis is based on pathology and complete surgical resection is the treatment of choice.

EUS-FNA is a useful method in the investigation of retroperitoneal masses, for an early, rapid, minimally invasive diagnosis.

## eP257 BLEEDING RISK AFTER ENDOSONOGRAPHIC (EUS) PUNCTURE OF PANCREAS MASSES-COMPARISON BETWEEN ASPIRATION (FNA) AND BIOPSY (FNB) FINE NEEDLES

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DOI 10.1055/s-0040-1705022

**Aims** To compare the bleeding rate between EUS-FNA and -FNB for solid and cystic pancreatic masses regarding coagulation parameters and use of anti-thrombotic agents in two Austrian centers.

**Methods** Our retrospective analysis included EUS-FNA/FNB of pancreatic masses performed between 02/2017-03/2019 in Klagenfurt and 11/2018-03/2019 in St. Pölten. Bleeding rate was assessed separately for solid and cystic pancreatic masses. Minor bleeding was defined as an event with a duration of at least one minute, no need for intervention, large coagulum on puncture side or decrease in hemoglobin > 1.5g/dL (< 3 g/dL). Major bleeding was defined as reduction in hemoglobin ≥3g/dL or need of transfusion and interventional hemostasis.

**Results** 202 patients were assessed (141 with solid and 61 with cystic pancreatic masses). FNA was performed in 54.6% of cases with solid pancreatic masses and in 73.7% of cysts.

Bleeding with hemodynamic instability was not observed in our cohort. In pancreatic cysts minor bleeding was observed in 8.2% of cases and was associated with use of FNB needles and lower platelets count (table). In solid tumors one major bleeding (0.7%) from duodenal vessel occurred and was immediately treated with hemoclip. In this group minor bleeding was observed in 15.6% of cases. The bleeding rate seems to correlate with use of FNB needles in these patients (table).

**Conclusions** Use of EUS-FNB needles increase the rate of minor bleeding for both solid and cystic pancreatic tumors, while major bleeding is a rare occurrence, irrespective of the needle typ.

## eP258 COMPARISON BETWEEN EUS AND CROSS-SECTIONAL IMAGING FOR THE ESTIMATION OF PANCREATIC CYSTS SIZE: A SINGLE CENTER EXPERIENCE

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DOI 10.1055/s-0040-1705023

**Aims** The widespread use and advances in diagnostic imaging results to an increase in the incidental finding of pancreatic cysts. According to the published guidelines, the size of the cyst is a risk factor for the surveillance and management. The aim of the study was to compare the size of a pancreatic cyst measured by a cross-sectional imaging (CT/MRI) and the endoscopic ultrasonography (EUS).

**Methods** All the patients with a pancreatic cyst found in a cross sectional imaging referred to the Endoscopy Unit for EUS between 2018-2019, were included in this retrospective study. The size of the cyst in the CT/MRI report was compared with the size measured by the EUS (PENTAX linear EUS, Hitachi unit) performed by a single operator (DT).

**Results** Seventy-one patients (F: 45, M: 36) with a mean age of 62,2 years (59,2-65,2) underwent EUS. The mean diameter of the pancreatic cysts was 22,2 mm (range: 19,7-24,7 mm) and 19,5 (range: 17,4-21,6 mm) measured by CT/MRI and EUS, respectively with a significant difference between the two methods (p< 0,001). A linear correlation of the measured size with the two methods was found ( $\Delta_{EUS}=0,77 * \Delta_{CT/MRI}$ , p< 0,001). In the secondary analysis of the results we found that the size of the cysts with a dilated pancreatic duct was significantly greater (p=0,44), as well as the size of the cysts with a mural nodule, but without a significant difference (p=0,065).

**Conclusions** In the small number of the patients examined, a difference in the measured size of the pancreatic cysts by a cross-sectional imaging and the EUS was found. It seems that the EUS underestimates the size of the cysts and particularly the size of the greater ones.

## eP259 EUS-GUIDED FINE-NEEDLE ASPIRATION (EUS-FNA) IN SOLID PANCREATIC LESIONS WITH 2 PASSES IS EQUAL TO 3 PASSES IN COLLECTING ADEQUATE SAMPLE FOR DIAGNOSIS

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► **Tab.1** Risk factors for bleeding after FNA or FNB of pancreatic masses

Factor	Solid tumors with (n=23) vs. without bleeding (n=118)	p value	Cystic tumors with (n=5) vs. without bleeding (n=56)	p value
Use of Anticoagulants (A) ASS (%), (B) LMWH (%)	(A) 21.7% vs.12.7%, (B) 8.7% vs.10.2%	(A) 0.42 (B) 0.87	(A) 0% vs.21.4% (B) 20% vs.8.9%	(A) 0.57 (B) 0.98
Platelets (cells/mm <sup>3</sup> )	260.565 ±78.748 vs. 266.777 ±164.299	0.20	134.600 ±96.975 vs. 268.538 ±140.984	0.04
Pro-thrombin time (%)	85.7 ±18.9 vs.90.1 ±15.8	0.24	98.4 ±26.8 vs.97.2 ±18.5	0.84
Use of FNB needles (%)	65.2% vs.41.5%	0.04	80% vs.21.4%	0.02

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DOI 10.1055/s-0040-1705024

**Aims** EUS-FNA has been established as the standard for tissue sampling in solid pancreatic lesions. According to ESGE guidelines three or four needle passes are needed to achieve adequate sampling in >90% of cases in the absence of on-site cytologic evaluation. However, this suggestion is based on low-quality evidence and the 'perfect' number of passes is still a matter of discussion. From our historical records, even two passes can suffice for adequate tissue sampling. Thus, the aim of our study was to assess the yield of adequate material when two or three needle passes are performed and to compare these two strategies in terms of incremental tissue yield.

**Methods** Consecutive patients with solid pancreatic lesions who underwent EUS-FNA in two European tertiary centers between January 2016 and October 2019 were retrospectively included. All EUS-FNAs were performed using 22G or 25G needles; patients were divided into two different groups according to the number of passes (2 vs 3). Patients with more or less passes were excluded. There was no on-site cytologic evaluation. All patients underwent the procedures under propofol sedation.

**Results** A total of 135 patients were identified, (83=61,5% male). Mean lesion size was 28.4mm (SD 12,3). Of them, 89 lesions (66%) were in the head, followed by 24 (17,8%) in the body. The most common diagnosis was adenocarcinoma (67%).

In 95 patients (70.4%) 2 passes were performed, whereas in 40 patients 3 passes were performed. Adequate tissue sampling was feasible in 86 (90,5 %) and 36 (90%) respectively, with no statistical difference of adequate tissue acquisition between the two groups ( $p=0.9$ ).

**Conclusions** Our study suggests that even two EUS-FNA passes in solid pancreatic lesions can provide sufficient tissue to facilitate a diagnosis, with no significant incremental tissue yield if three passes are performed.

## eP260 WHICH EUS FEATURE BEST PREDICT THE DIAGNOSIS OF PANCREATIC NEUROENDOCRINE TUMORS

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DOI 10.1055/s-0040-1705025

**Aims** Endoscopic ultrasound (EUS) associated with fine needle aspiration (FNA) has become the standard when it comes to evaluate pancreatic mass lesions. Our aim is to determine if beside specific ultrasound characteristics, a particular hypoechoic rim feature can predict a pancreatic neuroendocrine tumor (pNET) diagnosis.

**Methods** We have conducted a retrospective analysis of EUS examinations performed for solid pancreatic lesions from 2015 to 2019 in a Tertiary Gastroenterology Center. There were 175 cases analyzed, out of which pNET diagnosis was established by FNA in  $n=19$  (10.8%). Mean age of patients with pNETs was  $56.1 \pm 10.3$  years, significantly lower than all cases in the study group and 47.3% of them were males. The following EUS features were analyzed by univariate and multivariate analysis: well defined margins, hypoechoic EUS aspect, homogeneous pattern, the presence of internal vascularization, stiff elastographic appearance, the presence of multiple lesions, the internalization of large vessels, Wirsung duct dilation and the presence of a hypoechoic rim delimiting the interior margin of the lesion.

**Results** The following EUS features were significantly associated with EUS diagnosis of pNET: well defined margins (63.1% vs 35.7%  $p=0.02$ ), homogeneous pattern (36.8% vs 16.9%,  $p=0.03$ ), the presence of internal vascularization (63.1% vs 24.3%,  $p=0.0004$ ), blue on elastography (89.4% vs 64.2%,  $p=0.03$ )

and the presence of a hypoechoic rim (47.3% vs 2.5%,  $P<0.0001$ ). In the multivariate logistic regression analysis only the presence of a hypoechoic rim was independently associated with the pNET diagnosis ( $p<0.0001$ ).

**Conclusions** EUS appearance can suggest the diagnosis of a pNET. The presence of a hypoechoic rim delimiting the interior margin of the lesion is an independent predictor of pNET diagnosis. During EUS for solid pancreatic masses, the presence of this rim, should determine the endoscopists to request further immunohistochemical stains.

## eP261V ENDOSCOPIC ULTRASOUND WITH 'BITE' FINE NEEDLE BIOPSY IN A PATIENT WITH PANCREATIC CYST

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DOI 10.1055/s-0040-1705026

**Aim** To highlight an unusual diagnostic method of a pancreatic cystic tumor with minimal solid component.

**Methods and Results** Endoscopic ultrasound performed in a 78-year-old male revealed a pancreatic transonic mass of 86/66 mm, relatively well defined, with hyperechoic septum and minimal solid content. We inserted a small biopsy forceps via a 19 Ga needle and collected solid tissue which resulted in fibrosis with red blood cells, rare lymphocytes and no epithelial/malignant cells.

**Conclusions** This is an innovative method using a small biopsy forceps through a 19 Gauge needle during EUS with accurate results of the specimen.

## eP262 PANCREATIC CYSTIC LESIONS: DOCTOR, DO I HAVE PANCREATIC CANCER!?

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DOI 10.1055/s-0040-1705027

**Aims** The prevalence of pancreatic cystic lesions (PCLs), both benign and malignant, has significantly increased in the past few years. We carried out a study aiming to evaluate the frequency of Endoscopic Ultrasound (EUS) based diagnosis of PCLs, with or without fine needle aspiration (FNA), in a tertiary emergency care center.

**Methods** We conducted a retrospective study assessing a total of 1155 EUS performed by a single operator between 2016 and 2019. Only the EUS findings that were relevant for PCLs were selected and divided into four groups, epithelial neoplastic (EN), epithelial non-neoplastic (ENN), non-epithelial non-neoplastic lesions (NENN) and non-epithelial neoplastic (NEN).

**Results** Among 1155 EUS performed, 103 (8.92%) met the criteria to be identified as PCLs. From this total, 62 were epithelial neoplastic lesions (60.19%), 26 were epithelial non-neoplastic lesions (25.24%) and 15 were non-epithelial non-neoplastic lesion (14.56%). In every group we assessed the percentage of each type of lesion. In the EN group we added 14 serous cystadenomas

(13.59%), 11 serous cystadenocarcinomas (10.68%), 2 mucinous cystadenocarcinomas (1.94%), 12 main duct intraductal papillary mucinous neoplasia (MD-IPMN) (11.65%), 23 branch duct intraductal papillary mucinous neoplasia (BD-IPMN) (22.33%). In the ENN group we added 26 retention cysts (25.24%), while in the NENN group there were 15 pancreatitis-associated pseudocysts (14.57%). FNA was performed in 30 cases (29.12%) with high suspicion for malignancies, with a confirmed positive diagnosis in 10 cases (9.71%) and were later referred to the surgery and oncological department. Further monitorization was recommended in all cases with low malignancy risk.

**Conclusions** Given their malignant potential and scarce evidence regarding their true prevalence,

PCLs have been in the medical world spotlight for some years. EUS with or without FNA has proven to be the go-to tool in the diagnosis and monitorization of PCLs with emerging evidence of their increasing frequency.

### **eP263V ENDOSCOPIC ULTRASOUND FINE NEEDLE ASPIRATION (EUS-FNA) OF A PANCREATIC MASS AFTER ROUX-EN-Y GASTRIC RESECTION - A LAPAROSCOPIC ASSISTED TRANS-JEJUNAL APPROACH**

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DOI 10.1055/s-0040-1705028

EUS in patients with altered upper GI anatomy represents a real challenge. We present the case of a 48 year male known with gastric resection for peptic ulcer disease with Roux-en-Y anastomosis and cholecystectomy who came to our hospital for jaundice and weight loss. Both CT scan and MRCP showed an expansive process of the head of the pancreas. EUS FNA laparoscopically assisted-trans-jejunal approach was performed and the histopathological exam revealed a mass-forming chronic pancreatitis. In spite of the scarcity of data, this approach has proved to be an appropriate solution in order to put a correct diagnosis

## **ESGE Days 2020 oral presentations**

### **eP264V MANAGEMENT OF ESOPHAGEAL AND PYLORIC COMPLEX CAUSTIC INJURY: A MULTIMODALITY APPROACH**

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Caustic-induced gastric outlet obstruction impacts patients' quality of life. Repetitive session of endoscopic balloon dilation has a limited efficacy in caustic induced injury and carries the risk of perforation and recurrence. Surgical gastrojejunostomy has a high complication rate for the management of both benign and malignant gastric outlet obstruction. The multimodality approach using the placement of fully covered self-expandable metal stents, biodegradable stents and EUS-guided gastroenterostomy could be an effective alternative in the management of complex mixed caustic-induced injuries. The multimodality approach produces long-term symptoms relief, weight regain, resuming the oral intake, improving the nutritional status and quality of life.

### **eP265 MEDIASTINAL MASS AS A MELANOMA METASTASIS, AN UNUSUAL PRESENTATION**

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DOI 10.1055/s-0040-1705030

**Aims** We present a case of diagnosis of metastatic melanoma in the form of mediastinal mass, which debuts clinically with an Guillain Barré paraneoplastic syndrome.

**Methods** A 66-year-old male admitted in the Neurology department because of weakness and strength loss clinic, diagnosed with Guillain-Barré syndrome (GBS). CT scan was performed as part of the etiological study and a 53x37mm, well-delimited, right paraesophageal lesion was found incidentally.

**Results** Endosonography (EUS) showed a heteroechoic mass with cystic areas, located adjacent to the aorta and extrinsic to the thoracic esophagus. Fine needle aspiration (22G) of the mass revealed a melanoma metastases (immunohistochemistry with diffuse and intense positivity for S-100, SOX-10 and HMB45).

**Conclusions** A mediastinal mass such as metastasis of a melanoma is an extraordinary form of presentation, with less than 20 cases described in the literature. However, the potential therapeutic possibility, thanks to the new treatment targets, makes the diagnosis of these lesions even more important. Regarding the diagnosis of mediastinal lesions, the aspiration puncture guided by echoendoscopy is positioned as the test with better diagnostic performance compared to other, being also a safe technique.

### **eP266 CASE REPORT: RECURRENT UGIB SECONDARY TO A PANCREATICODUODENAL PSEUDOANEURYSM - ROLE OF EUS IN THE DIAGNOSIS AND MANAGEMENT**

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DOI 10.1055/s-0040-1705031

**Aims** Aneurysms of the pancreaticoduodenal artery (PDA) are extremely rare, with a reported incidence of 1-2% amongst all splanchnic artery aneurysms.

**Methods** A 45 years old man presented with haematemesis, epigastric pain and syncope. He previously had a severe alcoholic pancreatitis in 2014 which required a laparotomy with wash-out. CT pancreas then described an abnormal soft tissue thickening at the head of pancreas which contacts the CHA & CA. An EUS reported atrophic pancreas with calcifications, but no abnormal tissue was identified.

He remained well until 2019, when he presented with recurrent episodes of haematemesis and melaena. Bloods on admission showed Hb 60, urea 3.9 and amylase 87. He had multiple OGDs which identified an unusual area in D1 which had a sessile erythematous appearance, but did not explain the source of bleeding. Histology showed non-specific chronic inflammation only. A repeat CT Abdo/pelvis showed the previously reported soft tissue at the pancreatic head.

**Results** An EUS identified a well defined blind ending turbulent vascular focus within the head of pancreas, in keeping with a pseudoaneurysm. It lied in close proximity to the gastro-duodenal artery. Further CT angiogram confirmed a 12mm pseudoaneurysm arising from the anterior or posterior superior pancreaticoduodenal arteries, branching from the gastroduodenal artery. Embolisation was planned but repeat CT angiogram showed that the pseudoaneurysm had thrombosed spontaneously. He had no further episodes of bleeding and was discharged from hospital.

**Conclusions** PDA aneurysms are rare and are often associated with pancreatitis, abdominal trauma and iatrogenic injuries. They are often only diagnosed after life-threatening rupture or bleeding into gastrointestinal tract or intraperitoneal cavity. Our case demonstrated the difficulties in identifying such pseudoaneurysm and that EUS can be a helpful aid alongside CT angiography.

## eP267 ENDOSCOPIC ULTRASOUND USING A SINGLE TYPE 22 GA NEEDLE FOR PANCREATIC LESIONS WITHOUT ROSE: A SINGLE CENTER, SINGLE OPERATOR RETROSPECTIVE STUDY

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DOI 10.1055/s-0040-1705032

**Aims** Endoscopic ultrasound with fine needle aspiration (EUS with FNA) has proven to be the gold standard in establishing the histopathological diagnosis for prior hard to reach lesions using conventional methods. The aim of our study is to compare the diagnostic accuracy between the EUS findings and the histopathological diagnosis using a single type of needle in pancreatic lesions.

**Methods** We designed a single center, single operator retrospective study between 2016 and 2019 with a total of 259 patients which performed EUS and FNA with a single type of needle (22 Gauge Boston Scientific Expect Needle), without ROSE (rapid on-site evaluation). EUS-FNA was performed using two needle passages and the initial EUS findings were compared with histopathological results. We divided the patients into two groups: EUS pancreatic benign lesions and EUS pancreatic malignant lesions.

**Results** From the total of 259 patients EUS with FNA, 194 were included in EUS malignant lesions group (74.9%) and 65 in EUS benign lesions (25.1%). After the histopathological result we observed that in the initial EUS pancreatic benign lesions group 15 were positive for malignancies (23.08%). While in the EUS pancreatic malignant group 28 were negative for malignancies (14.43%), 7 patients have undergone EUS with FNB of which 5 patients had a confirmation of malignancy.

**Conclusions** Given the high percentage (23%) of malignancies in the otherwise EUS pancreatic benign characterized lesions we can conclude that FNA is vital in the use of any type of pancreatic lesion. Two needle passages for EUS pancreatic malignant lesions in the absence of ROSE may prove to be insufficient, therefore more prospective studies are needed to properly evaluate different 22Ga needles types.

## eP268 SINGLE CENTRE REVIEW OF ENDOSCOPIC ULTRASOUND STAGING ACCURACY IN EARLY OESOPHAGEAL CANCER

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DOI 10.1055/s-0040-1705033

**Aims** To evaluate the accuracy of EUS in early oesophageal cancer T and N staging in a large tertiary care centre.

**Methods** The upper GI cancer registry was interrogated for pathologically confirmed T1 or T2 cancers post oesophagectomy or endoscopic mucosal resection (EMR). Patients who had a staging EUS in our institution prior to intervention were included. Patients who received neoadjuvant therapy, or those with incomplete staging were excluded. Final pathological staging was correlated with pre-op EUS staging.

**Results** 43 (14 female, 9 male) patients were included in the study. 34 patients had an oesophagectomy and 9 patients had EMR. The mean age was 68 years (range 48-83 yrs). 36 patients had adenocarcinoma and 7 squamous cell carcinoma (SCC).

The N staging accuracy was 86%. The T staging accuracy was 70%(30/43). On subgroup analysis, 50% (6/12) patient with OGJ pathology were correctly staged. 80% (16/20) patients with lower oesophageal tumours were accurately staged. 70%(7/10) patients with middle oesophageal tumours were accurately staged. A single patient had an upper oesophageal tumour which was accurately staged. 85% (11/13) of staging errors were related to 'over-staging' the lesion. The 2 patients who were 'under-staged' had surgery with subsequent adjuvant therapy, and are currently disease free (3 year follow up).

**Conclusions** Our study shows that our rates of accurate EUS staging in early upper GI cancers are comparable to published data. Our data highlights the difficulty of accurately staging junctional tumours.

## eP268\_1 COMPARISON OF LIQUID-BASED CYTOLOGY WITH CONVENTIONAL SMEAR CYTOLOGY FOR ENDOSCOPIC ULTRASOUND-GUIDED FINE NEEDLE ASPIRATION OF SOLID PANCREATIC MASSES: PROSPECTIVE RANDOMIZED NON-INFERIORITY STUDY

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DOI 10.1055/s-0040-1705034

**Aims** There is limited data on the efficacy of liquid-based cytology (LBC) for endoscopic ultrasound-guided fine needle aspiration (EUS-FNA) specimens. We aimed to evaluate the diagnostic efficacy of LBC for solid pancreatic neoplasms compared to conventional smears (CS).

**Methods** In this randomized, crossover, non-inferiority trial, we randomly assigned (1:1) patients with suspected pancreatic cancer to either LBC or CS groups. Aspirates from the first needle pass were processed by one method, aspirates from the second pass by the other method, and specimens from the last pass were processed as core biopsies. The primary endpoint was the diagnostic efficacy of each method, with the final diagnosis as the gold standard. A non-inferiority margin of 10% was assumed. This trial is registered with ClinicalTrials.gov, number NCT03606148.

**Results** Of 170 randomized patients, 165 were classified as "malignant" and 5 as "benign". Unsatisfactory samples were less frequent in LBC (1.78%) compared to CS (5.33%). The diagnostic accuracy, sensitivity, specificity, positive predictive value, and negative predictive value of LBC versus CS were 88.0% versus 83.8% ( $P=.276$ ), 87.7% versus 83.2% ( $P=.256$ ), 100% versus 100% ( $P=.999$ ), 100% versus 100% ( $P=.999$ ), and 16.7% versus 16.1% ( $P=.953$ ). When LBC was combined with core biopsy, the diagnostic accuracy was higher than that of LBC only (95.3% versus 88.0%,  $P=.016$ ). A bloody background was significantly more frequent in CS (CS: 85.2%, LBC: 1.8%;  $P<0.001$ ), while the nuclear features were similar for both groups.

**Conclusions** The diagnostic utility of LBC was comparable to that of CS. The cytomorphologic features did not significantly differ between the two methods, and the reduced bloody backgrounds allowed better visibility in LBC method.

## eP269 SAFETY OF ENDOSCOPIC RETROGRADE CHOLANGIOPANCREATOGRAPHY IN PEDIATRIC POPULATION: A MULTICENTER STUDY

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DOI 10.1055/s-0040-1705035

**Aims** Endoscopic retrograde cholangiopancreatography (ERCP) has an important role in pediatric pancreaticobiliary diseases. The aims of this retrospective multicenter study were to assess the technical success and adverse events of ERCPs in children in French and Belgian centers.

**Methods** All children aged from one day to seventeen years old who underwent ERCP between January 2008 and March 2019 in 15 tertiary care hospitals were retrospectively included.

**Results** 271 children underwent 470 ERCP. Median age at intervention was 10.9 years. Multiple ERCP were performed on 30% patients (81/271). ERCP were therapeutic in 90% (423/470) and diagnostic only, in case of neonatal cholestasis, in 10%. Proportions of biliary and pancreatic indications were 63% and 37% respectively. Most common biliary indication was choledocholithiasis and most common pancreatic indication was chronic pancreatitis. Biliary cannulation was successful in 92% of cases (270/294), pancreatic cannulation in 96% (169/176) and planned therapeutic procedure was successful in 91% (388/423). The overall complication rate was 19% (65/340). Most common complication was post-ERCP pancreatitis (PEP) in 12% (40/340) and sepsis in 5% (18/340). In multivariate analysis, pancreatic stent removal was protective against PEP

(OR 0.066; 95% CI: 0.005;0.826, p=0.035) and sepsis was associated with liver transplantation history (OR 8.64, 95% CI: 1.648;45.305, p=0.011). Five patients had post-ERCP hemorrhage and two had intestinal perforation. All complications were successfully managed with supportive medical care. There was no procedure-related mortality. There was no post sphincterotomy cholangiocarcinoma reported nor cancer radio-induced reported throughout the study period.

**Conclusions** Our cohort demonstrates that ERCP can be performed safely with high success rates in many pancreaticobiliary diseases of children. The rate of adverse events was similar to previous reports and no serious adverse events occurred. The beneficial impact of ERCP in this large multicentric pediatric cohort is highlighted.

## eP270 SUCCESSFUL CLOSURE OF AN ESOPHAGEAL PERFORATION BY ENDOSCOPIC VACUUM-ASSISTED CLOSURE (VAC) THERAPY IN A PREMATURE INFANT WEIGHING 980G

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DOI 10.1055/s-0040-1705036

**Aims** Endoscopic vacuum therapy (EVT) (=vacuum-assisted closure [VAC] therapy) has become a standard treatment method for esophageal wall defects in adults. However, there is little data on the use of EVT in infants.

**Methods** Case report: A 7day-old infant, prematurely born in the 31<sup>st</sup> week of pregnancy (980g), was diagnosed with an esophageal perforation of unknown origin, possibly following insertion of a feeding tube. Radiography showed a strong leakage of contrast agent into the mediastinum. The infant underwent thoracotomy as the perforation would not close spontaneously. The defect (Ø15mm) was closed by suture; however, the leakage persisted. Endoscopy revealed a partial insufficiency (Ø3mm) of the suture in the middle esophagus (10-11.5cm ab ore). Following interdisciplinary consensus, we commenced EVT. For the first 4 sessions we used a vacuum drainage film (Suprasorb-CNP), for the other 9 sessions an open-pore polyurethane foam sponge, both being fixed to a suction catheter and perorally placed with a nasal gastroscope (Ø4.9mm) on one level with the perforation. Initial vacuum pump settings: continuous suction, low intensity, 75mmHg, 7Fr catheter. These settings did not induce sufficient formation of granulation tissue, so EVT was gradually intensified to continuous suction, high intensity, 150mmHg via 12Fr catheter. Moreover, the frequency of film/sponge exchanges was increased from 2 to 3 per week. For the time of EVT the infant was mechanically ventilated and nourished via percutaneous jejunal tube.

**Results** Under intensified EVT we witnessed local formation of granulation tissue, eventually leading to a complete wound closure. EVT was discontinued on EVT day 30, involving 13 film/sponge exchanges. The infant was discharged from hospital on expected date of birth in good condition and orally nourished.

**Conclusions** EVT as therapeutical option for esophageal perforations can be also considered in infants. We succeeded in closing a possibly traumatic wall defect applying EVT settings also used for adult treatment.

## eP271 REVIEW OF EOSINOPHILIC ESOPHAGITIS REFERENCE SCORE (EOERS) FOR THE PRIMARY DIAGNOSTIC OF EOSINOPHILIC ESOPHAGITIS IN CHILDREN

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DOI 10.1055/s-0040-1705037

**Aims** Since 2017 EoERS has been used for detection of eosinophilic esophagitis (EoE) in children. All of them manifestate of dysphagia and disturbances of esophageal transit.

**Methods** Esophagogastroduodenoscopy with NBI and biopsy from three part of esophagus and recording was done. All recordings of esophagoduodenoscopy were retrospectively evaluated by two experts. The aim of evaluation was to detect endoscopic "red flag" of EoE.

**Results** From August 2017 to November 2019 24 new cases of EoE were detected (2017 -1; 2018 - 9; 2019 - 14). Data analysis showed that among 24 patients, males represent 86.96%, females - 13.04%. EoE was detected in one case among children up to 1-year-old (4.18%); 5 cases among children from 1 to 3 years (20.84%), 10 cases among children from 3 to 7 years (41.68%), 8 cases (33.3%) among patients from 8 to 18 years.

The allergological anamnesis of 15 patients indicates 9 cases of food allergy (37,5%), 2 cases of drug allergy (8,3 %), 4 cases of multiple allergies and 9 cases where anamnesis is not burdened. An analysis of the endoscopic signs included in EoERS showed "exudate" in 68% of cases, in 63% vertical "furrows" were detected. Fixed rings were observed in 21% of cases and transition rings in 37% cases, but when combined, the ring-shaped striation of the esophagus was observed in 58% of cases. Narrowing of esophagus's lumen of varying degrees was detected in 31% of cases.

Only one of the signs was found in 21% of cases, two signs in 42% of cases, three or more in 36% of cases. In two patients, signs of EoE were visualized only when illuminated in NBI mode.

**Conclusions** The use of the endoscopic index and the training of doctors to recognize endoscopic signs of EoE leads to improved diagnosis. The proposed EoERS is cumbersome and can be simplified for the primary detection of EoE in children.

## eP272 COMPARISON OF TWO BOWEL PREPARATION METHODS FOR COLONOSCOPY IN CHILDREN

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DOI 10.1055/s-0040-1705038

**Aims** To compare two methods of bowel preparation for colonoscopy in children, that is officially allowed in Russia: natrium picosulphate with magnesium citrate (NP+MC) vs enemas.

**Methods** Prospective two-center study included 109 children requiring colonoscopy at referral hospital. Patients were allocated to NP+MC (n=59) or

enemas (n=50). Effectiveness of cleanout was assessed using Boston bowel preparation scale (BBPS). Satisfactory result of bowel preparation was defined as BBPS $\geq$ 2 per colon segment. Tolerability was accessed by patient questionnaire (Likert scale) and frequency of side effects.

**Results** Satisfactory result was achieved in 48 (81.4%) children in the NP+MC group and in 25 (50%) patients in enemas group (mean BBPS score of NP+MC was 6,2 $\pm$ 1,2 vs 5,4 $\pm$ 1,5 for enemas, p< 0,001). Logistic regression analysis showed that there was no statistically significant evidence that age, body mass index and constipation affect the success of achieving a satisfactory result of bowel preparation in both groups (p>0,05), in contrast to the preparation method used (p = 0.02). Odds ratio in achieving satisfactory result was significantly higher in NP+MC group (OR=5,2, 95%CI 1,8-14,9; p=0,02) compare to enemas group (OR=0,19, 95% CI 0,067-0,548; p=0,02). The incidence of adverse events between the groups was almost the same, except for perianal pain, which was much more often observed in children with enemas (p = 0.02). In the NP+MC group, 48 (81.4%) children were "completely satisfied or satisfied" with bowel preparation, compared with 13 (26%) in the enemas group (p = 0.001).

**Conclusions** Natrium picosulphate with magnesium citrate cleanses the intestine more effectively and is better tolerated by children compared to enemas.

## eP273 ENDOSCOPIC ULTRASOUND IN PEDIATRIC PATIENTS WITH GASTROINTESTINAL DISORDERS IN MEXICO

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DOI 10.1055/s-0040-1705039

**Aims** Evaluate the feasibility, safeness and clinical utility of EUS in the management of gastrointestinal disorders in children at a national referral center from Mexico.

**Methods** Retrospective study in which nineteen pediatric patients (< 18yo) that were evaluated by means of EUS were included. The time period was from October 2016 to November 2019. Data was obtained from electronic charts and a local database. Indications, efficacy, safety and clinical utility were determined. Clinical utility was defined as a new diagnosis or therapeutic approach due to EUS results.

**Results** Twenty-one procedures in nineteen children were included (8 boys/11 girls). Median age was 14 yo (range 1.5 -17). Biliopancreatic disease was the main indication of EUS (90.4%). Rectal and esophageal indications account for one case each. EUS guided fine needle biopsy (EUS-FNB) was done in five patients (3 pancreatic and 2 hepatic). Eight procedures were therapeutic: pancreatic pseudocyst drainage, transgastric pancreatography and transduodenal cholangiography with biliary drainage. There was one self-limited bleeding complication. EUS was clinically useful in all patients.

**Conclusions** EUS is a safe and useful tool in pediatric patients, especially in children with biliopancreatic disorders.

## eP274 DEEP ENTEROSCOPY UTILITY AND SAFETY IN CHILDREN FROM A MEXICAN NATIONAL REFERRAL CENTER

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DOI 10.1055/s-0040-1705040

**Aims** The main objective was to evaluate clinical utility of Double Balloon Enteroscopy in Mexican children.

**Methods** Retrospective study of all pediatric patients (< 18 years old) that underwent DBE in a National Medical Referral Center in Mexico City

**Results** Fourteen patients were included (8 girls and 6 boys). Mean age was 11 ±4 years (range = 6–17 years). The first DBE in children was performed in May 2013 and the last one in February 2019. Gastrointestinal bleeding was the main indication for DBE accounting for 10 cases, two cases were related to Peutz-Jeghers (PJ), ileal stenosis and Roux-en-Y hepaticojejunostomy accounted for one case each. Four patients had a complete small bowel examination. All the procedures were performed under general anesthesia, and no complications were reported.

**Conclusions** DBE is a safe and useful tool in pediatric patients for the evaluation of the small bowel, especially in children with gastrointestinal bleeding with no evident cause in gastroscopy and colonoscopy.

## eP274\_1 GASTROINTESTINAL FOREIGN BODY IN KOREAN CHILDREN: A NATIONWIDE STUDY

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DOI 10.1055/s-0040-1705041

**Aims** Many children suffer from ingestion of foreign body (FB) and sometimes require an emergency endoscopy or surgery. Up to now, few domestic data study on FB ingestion in children by pediatric gastroenterologists has been reported. This study aims to investigate the clinical characteristics and outcomes of FB ingestion in children and clarify proper tools for evaluating FB patients.

**Methods** Total of 472 children (260 girls) with FB ingestion who visited Department of Pediatrics at twelve medical centers between January 2018 and December 2018 were reviewed. Our study include age, gender, time of accident, time to visit, presenting symptoms, types and size of FB, and diagnostic and therapeutic modalities with FB removal.

**Results** The median age of diagnosis was 2.8 years (0.3–18.3 years). Most common place of FB ingestion was their home (88.5%). Among the children with identified FB, coin (22%) was the most common gastrointestinal FB. Magnet (14%) and disc battery (10%) were also significant. The locations of identified FB were the esophagus (17.3%), stomach (53%), small and large intestine (23.7%), respectively. Endoscopic and surgical removal were conducted in 29%. Among them, toddler (ages 1–3 year) was most frequently identified in 38.4%. Nine children underwent operations due to failure to endoscopic FB removal and prevention of complications. Severe complications related FB ingestion were identified such as gastric or esophageal ulceration in 4 children, gastric laceration in 2, small bowel (SB) or esophageal perforation in 2, and SB bowel obstruction in 1, respectively. Sharp, large (> 2.5 cm), dangerous materials and multiple magnets showed significant differences ( $p < 0.05$ ) with surgery.

**Conclusions** The types of FB were very diversified with age, and mostly preventable in Korean children. Endoscopic evaluation is essential for investigating complications in unwitnessed event, even in rare emergencies. In addition, more meticulous protocols about pediatric FB would be urgently needed.

Thursday, April 23, 2020

Endoscopic technology

09:00 – 17:00

ePoster area

## eP275 V SUBMUCOSAL TUNNELING ENDOSCOPIC RESECTION (S.T.E.R.) OF A GIANT AND SYMPTOMATIC SUBCARDIAL LEIOMYOMA

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DOI 10.1055/s-0040-1705042

**Aims** S.T.E.R. is used as treatment for subepithelial lesions with success rates over 95%. We present a successful resection of a giant, symptomatic, subcardial leiomyoma.

**Methods** S.T.E.R. was performed in an 80-year-old patient non-fit for surgical approach, with a giant subcardial leiomyoma.

**Results** Complete resection of a 4 cm leiomyoma was achieved, with a post-surgical leak, treated with S.E.M.S for 2 weeks. Patient is completely asymptomatic and gaining weight.

**Conclusions** S.T.E.R. is effective for subepithelial lesions, specially in patients not suitable for surgery. Complication rate is higher for lesions  $\geq 3$  cm, but such are usually treatable by endoscopic techniques.

## eP276V ENDOSCOPIC MANAGEMENT OF PANCREATIC NECROSIS USING THE ENDOROTOR

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DOI 10.1055/s-0040-1705043

A 62 years-old-man with severe acute necrotizing pancreatitis had previously undergone unsuccessful conventional endoscopic management of pancreatic necrosis. Thereafter, we decided to use the EndoRotor system. It consists of a disposable catheter with a rotating blade at its distal end, which is connected to a suction and continuous irrigation pump. It is controlled by two pedals: one activates the rotation of the blade the other activates the aspiration. The removal of necrotic tissue is only performed when the aspiration is activated, which guarantees the safety and prevents complications. Three procedures using the EndoRotor were successfully carried out without adverse events.

## eP277 USE OF NARROW BAND IMAGING COLONOSCOPY IN DIAGNOSIS OF ULCERATIVE COLITIS, CORRELATION WITH CONVENTIONAL COLONOSCOPY & HISTOPATHOLOGY

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DOI 10.1055/s-0040-1705044

**Aims** Ulcerative colitis is a disease of increasing incidence and may progress to colorectal cancer (CRC). Early detection of dysplastic changes is required. Narrow Band Imaging (NBI) is an imaging procedure that is supposed to increase the yielding of diagnosis of ulcerative colitis.

**Aim of the study:** Validate the relation between histological pattern and NBI findings in diagnosing ulcerative colitis.

**Methods** 50 patients diagnosed with ulcerative colitis in Alexandria University Hospital were examined by conventional white-light endoscopy (WLE) colonoscopy and NBI then biopsies were taken from areas with suspected lesions and histopathological examination was done.

**Results** patients were divided into active (27) and inactive (23) according to the **Ulcerative colitis disease activity index (UCDAI)**. From the 23 patients that were supposed to be inactive, 14 showed honeycomb appearance and 7 showed irregular vascular mucosal patterns by NBI examination. Histopathological examination revealed metaplasia in 55% of the patients that were under the category of inactive patients. There was a significant correlation between histological examination and NBI findings. NBI showed sensitivity of 58.3%, specificity of 100%, PPV of 100%, NPV of 23% and accuracy of 62.9% in active patients.

**Conclusions** Narrow band imaging colonoscopy is an easy method that adds value for the conventional colonoscopic evaluation of the patients suffering from ulcerative colitis & seems to provide additional information that might lead to further classification of the endoscopic activity rather than the active or inactive.

### eP278 USEFULNESS OF NEAR-FOCUS MAGNIFICATION WITH NARROW-BAND IMAGING IN THE PREDICTION OF HELICOBACTER PYLORI INFECTION: A PROSPECTIVE TRIAL

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**DOI** 10.1055/s-0040-1705045

**Aims** It has been shown that conventional white-light (WL) endoscopic findings often labeled as *Helicobacter pylori* (*H. pylori*)-associated gastritis are poorly informative. Therefore, we investigated the performance of near focus (NF)-NBI, a novel simplified and modest magnifying endoscopy, for predicting *H. pylori* infection compared with WL endoscopy.

**Methods** A total of 115 consecutive patients who underwent esophagogastroduodenoscopy were prospectively enrolled. In NF-NBI endoscopy, we classified gastric mucosal patterns into four categories according to pit patterns, subepithelial capillary network (SECN), collecting venules (CV), and vascular density. Only type 1 pattern (small and round pits with regular SECN and visible CVs) was diagnosed as non-*H. pylori* infection, others as *H. pylori* infection. *H. pylori* status based on WL and NF-NBI images was judged by three endoscopist.

**Results** Interobserver agreement was moderate in both groups. The sensitivity, specificity, positive predictive values, and negative predictive value were 57.7%, 92.1%, 53.0%, and 72.5% for WL endoscopy and 86.5%, 84.1%, 84.1%, and 88.3% for NF-NBI endoscopy, respectively.

► **Tab.1** Diagnostic accuracy of conventional WL and NF-NBI endoscopy in the prediction of *H. pylori*-infected stomach

	Sensitivity	Specificity	Positive predictive value	Negative predictive value
WL	57.7	92.1	53.0	72.5
NF-NBI	86.5	84.1	84.1	88.3

**Conclusions** NF-NBI endoscopy may be more useful for predicting *H. pylori* infection than WL endoscopy.

### eP279V COLD SNARE POLYPECTOMY FOR UPPER GASTROINTESTINAL LESIONS

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**DOI** 10.1055/s-0040-1705046

Cold snare polypectomy is the method of choice for removal of colonic lesions up to 10 mm. The use of this technique in the upper gastrointestinal tract is not widely used. We describe the technique of cold snare polypectomy in two patients, for diminute Paris 0-IIa lesions in the oesophagus and stomach. Both the procedures underwent uneventfully besides mild bleeding that subsided. The pathologic result revealed an oesophageal squamous cell papilloma and a gastric lesion with low grade dysplasia, both with free lateral margins. Cold snare polypectomy can be an optional additional technique for the treatment of upper gastrointestinal lesions.

### eP280 ENDOSCOPIC TREATMENT FOR ZENKER´S DIVERTICULUM WITH THE STAG BEETLE KNIFE (SB KNIFE) – PRELIMINARY RESULTS FROM A SINGLE-CENTER EXPERIENCE

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**DOI** 10.1055/s-0040-1705047

**Aims** Flexible endoscopic treatment of symptomatic Zenker´s diverticulum (ZD) is an established treatment option. We report our experience with a scissor-shaped, rotating device with two insulated monopolar blades (SB knife) designed primarily for endoscopic submucosal dissection. Little data are reported about its use for Zenker diverticulum.

**Methods** From February 2014 to April 2019, n = 20 patients were treated at ASST-Rhodense with the SB knife junior. The insulated blades allowed to avoid the overtube. The procedures were performed with a cap to better evaluate the diverticulum and the septum. All patients underwent an esophagram pre- and post-procedure, to assess esophageal transit and perforation. Symptoms (dysphagia, regurgitation, respiratory symptoms) were analyzed before and at the follow up using a validated scale. Procedure duration, rate of complications, symptom changes after the procedure and rate of relapsing patients during follow up were also recorded.

**Results** The procedure was carried out successfully in all patients (ZD mean size: 3 cm (1–6 cm)).

18/20 (90%) patients received one treatment session. The mean procedure time was 28 min (18–60 min). Two patients (10%) required a second treatment after a mean of 14 months (2–26) due to symptomatic recurrence; both patients were at the very beginning of our experience. Two minor intraprocedural bleedings were easily treated by the ‘coagrasper’ use of the device. No major bleeding or late-onset bleeding developed. One minor perforation occurred and was successfully treated with medical therapy.

During a mean follow-up of 27 months (1–60), a significant symptom improvement was achieved in all the scores (dysphagia; regurgitation; respiratory symptoms).

**Conclusions** Flexible endoscopic treatment of ZD with the SB knife is safe, effective, and has lasting effects on symptoms also at long term follow up, with a relatively low recurrence rate.

## eP281V ACETIC ACID SPRAY AND BLUE LIGHT IMAGING PRIOR TO ENDOSCOPIC RESECTION OF SESSILE SERRATED ADENOMA: A VIDEO CASE

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**DOI** 10.1055/s-0040-1705048

**Aims** Sessile serrated lesions (SSLs) are sometimes difficult to delineate. We demonstrate the usage of acetic acid (AA) in combination with Blue Light Imaging (BLI) for SSL.

**Methods** 1.7% AA was used.

**Results** A 60-year-old man was referred for a screening colonoscopy. In the ascending colon SSL was found. The border of the lesion was unclear. The surface structure and the delineation of the lesion became clearer under AA with BLI. It was removed by endoscopic mucosal resection.

**Conclusions** Acetic acid in combination with BLI was easy to use and helpful for better delineation of SSL.

## eP282 HISINVIA: A HYBRID SOLUTION FOR COLONIC POLYP HISTOLOGY PREDICTION IN WHITE LIGHT COLONOSCOPY IMAGES COMBINING ARTIFICIAL INTELLIGENCE AND CLINICAL INFORMATION

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**DOI** 10.1055/s-0040-1705049

**Aims** In-vivo histology prediction is the cornerstone to improve the cost-efficiency of colonoscopy procedures. Artificial Intelligence (AI), specifically via Deep learning (DL) systems, can help physicians during colonoscopy in this task. However, its efficiency has not yet reached the levels of performance necessary to be used in the exploration room. In order to improve that, we propose a hybrid approach (HISINVIA) that combines DL methods with polyps characteristics indicated by doctors.

**Methods** HISINVIA combines features extracted from the polyp region in 1346 original white light HD colonoscopy images from 501 different polyps using a DL architecture (ResNet50) with three different features indicated by the clinicians: size (in mm), location and morphology according to Paris classification. Polyp region in each image was delineated by clinicians using GTCreator software. The system provided as output the probability of being an adenoma vs non-adenoma.

**Results** 926 images (69%) contained an adenomatous polyp whereas 419 (31%) showed a non-adenomatous polyp. 579 (43%) were < 5 mm, 331 (25%) 6–10 mm and 436 (32%) > 10 mm. Regarding the location, 598 (45%) were in the rectum-sigma and 167 (12%) in the right colon. Images were distributed into train (70%, 940 images), validation (20%, 269 images) and test (10%, 137 images) sets. Deep learning information was able to correctly identify 78/94 adenomas and 17/43 non-adenomas. HISINVIA was able to correctly identify 80/94 adenomas and 32/43 non-adenomas. Moreover, the processing time was very low (50 ms to process an image). Complete performance metrics are shown in the table.

► Tab. 1

	Sens	Spec	PPV	NPV
Deep learning	83%	40%	75%	52%
HISINVIA	85%	74%	88%	70%

**Conclusions** HISINVIA improves performance obtained by pure AI-based solutions, showing its potential to be used in the exploration room.

## eP283 LUMEN APPOSING METAL STENT HOT AXIOS IN ACUTE PANCREATITIS WALLED-OFF NECROSIS: COMPARISON STUDY BETWEEN 15 MM AND 20 MM STENT

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**DOI** 10.1055/s-0040-1705050

**Aims** The objective of this study is to compare the efficiency related to different sizes (15 mm vs 20 mm) of HOT AXIOS stents in the endoscopic treatment of AP collections.

**Methods** This is a monocentric retrospective study performed in Beaujon Hospital. The inclusion criteria were: placement of an AXIOS of 15 or 20 mm for the treatment of a PA (walled-off necrosis) symptomatic collection (suspicion of infection, compression of organ). The success of endoscopic treatment was defined by a composite criterion which was success without any surgical treatment and survival. Univariate and multivariate analyzes focused on the factors associated with the success of endoscopic treatment and those associated with 15 and 20 mm stent.

**Results** From May 2016 to May 2019, 97 patients underwent endoscopic drainage with a HOT AXIOS stent. 52 patients were actually treated for PA collections. The mean total length of endoscopic procedure was 122 ± 125 min for an average number of necrosectomies of 1.77 ± 1.89 per patient. Seven patients (13%) died.

Endoscopic management resulted in success for 41 (79%) patients including 27/29 (93%) in the group of AXIOS of 15 mm and 14/23 (61%) in the group of AXIOS of 20 mm (p = 0.007).

In multivariate analysis, patients with AXIOS 20 mm had a significantly lower Charlson score

(p = 0.04), a greater total duration of necrosectomy (p = 0.03), less nasocystic drain (p = 0.008) and more frequent failure of endoscopic treatment (p = 0.03).

**Conclusions** The efficiency of HOT AXIOS stent of 20 mm seems to be lower than that of 15 mm stent in the endoscopic treatment of necrotic post PA collections, with a potential risk of increased bleeding.

## eP284 ENDOSCOPIC FULL-THICKNESS RESECTION OF GI LESIONS: FEASIBILITY AND SAFETY – A RUSSIAN SINGLECENTER EXPERIENCE

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**DOI** 10.1055/s-0040-1705051

**Aims** To evaluate feasibility and safety of the endoscopic full-thickness resection (EFTR) in colorectal and duodenal lesions using over-the-scope device (FTRD, Ovesco Endoscopy, Tubingen, Germany).

**Methods** We prospectively analyzed the first 10 patients treated with FTRD in Moscow (Russia) between January 2019 and October 2019. Primary endpoint was technical success – en-bloc resection, R0 resection with histologic conformation of complete resection. Secondary endpoints were adverse events and recurrence at short-term follow-up (2 month).

**Results** Four patient (median age 63,5 ± 3,9 years; 75% males) with non-lifting or incomplete lifting sign adenomas (3 patients with high grade dysplasia) and subepithelial cancer (1 patient) underwent EFTR in the duodenum. To prevent mucosal damage and facilitate introduction, balloon dilatation (20 mm) of the upper esophageal sphincter and the pylorus was tentatively performed. All lesions were resected successfully. Median diameter of the lesion size was 9 ± 2,22 mm. There was no immediate or delayed bleeding/perforation. Histology confirmed complete (R0) full-thickness resection in 100% cases. Six patients (median age 67,0 ± 5,8 years; 33% females) with colorectal lesions were performed EFTR. Indication for the procedure were non-lifting sign recurrent adenoma in the scar in 1 patient, suspicious scar in 3, subepithelial lesion in 2 patients with severe co-morbidities (33%). Median diameter of the lesion size was 19 ± 3,54 mm. EFTRD was feasible in all six cases. Full-thickness resection (R0) was achieved in 6 patients. Minor bleeding was observed in 2 patients. To date, 2-month endoscopic follow-up has been obtained in 7 patients. The over-the-scope clip was in place in all cases, recurrences were not observed.

**Conclusions** In our study we demonstrate high technical success and safety of EFTR not only in the colorectum, but also in the duodenum. Minor complications occurred in 20% of patients.

## eP285 A POTENTIAL SIMPLE ENDOSCOPIC ANTIREFLUX METHOD, ‘THE RIPPLE PROCEDURE’ IN PORCINE MODEL

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DOI 10.1055/s-0040-1705052

**Aims** Currently available endoscopic or minimally invasive antireflux modalities are not widely accepted due to high procedure cost or inconsistent results. Therefore, a simpler and less technically demanding method is required. We evaluated the feasibility and efficacy of new endoscopic antireflux method (the Ripple procedure) using functional lumen imaging probe (FLIP).

**Methods** This 5-week survival study included 10 domestic pigs (control, n = 4; experimental Ripple), n = 6). The procedure includes the following steps: (i) semicircular marking along the lesser curvature of the cardia; (ii) submucosal injection; (iii) semicircular mucosal incision along the marking. Endoscopic and FLIP evaluations were performed preoperatively and on postoperative days (PODs) 14 and 35. Technical feasibility was evaluated, and FLIP parameters, including the distensibility index (DI) at the esophagogastric junction (EGJ) and histopathological findings, were compared between groups.

**Results** The median procedure time was 28 (23.5–33.8) minutes. There was no significant difference in dysphagia score and body weight between groups. On POD 35, the Ripple group showed significantly lower EGJ DI at 30 mL [2.0 (1.3–2.5) vs 4.9 (2.7–5.0), P = 0.037]. The EGJ DI was significantly reduced at 30 mL, compared with that at the baseline level [–59.0% (–68.8% to –32.1%) vs 27.8% (–26.3% to 83.1%), P = 0.033]. Histologic evaluation revealed submucosal granulation tissues near the mucosal incision site, with increased intervening fibrosis between lower esophageal sphincter fibers in the Ripple group.

**Conclusions** The EGJ DI significantly decreased after the Ripple procedure; hence, the procedure appears to be feasible and effective in this porcine model.

## eP286 V USE OF ARTIFICIAL INTELLIGENCE TO IMPROVE POLYP DETECTION RATE

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DOI 10.1055/s-0040-1705053

**Aims** Investigate the effect of Artificial Intelligence (AI) on polyp detection rate (PDR).

**Methods** Seven patients underwent two consecutive colonoscopic examinations by two different endoscopists blind to each other, first one using high definition (HD) and the second one using AI.

**Results** PDR was 51.14% using HD and 71.42% when adding AI. The mean number of polyps per patient (MPP) was 1.57 with HD (mean size 5.42 mm) and 3.71 when adding AI (mean size 2.8 mm).

**Conclusions** AI represents a new endoscopic tool that allows to improve PDR as well as to increase MPP, especially of diminutive polyps (< 5 mm).

## eP287 FIRST TRIAL OF REVERSE PERORAL ENDOSCOPIC MYOTOMY FOR REFRACTORY BENIGN ESOPHAGEAL STRICTURE

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DOI 10.1055/s-0040-1705054

**Aims** The most commonly implicated caustic agent is the alkali-sodium hypochlorite (lye: detergent). Benign strictures of the esophagus are presumed to be sequelae of deep esophageal injury. Dilatation with bougies or balloons is the classic treatment for esophageal strictures. Kochman defined refractory benign esophageal stricture (RBES) as more than 3–5 dilations having been performed without clinical and endoscopic response. This report is believed to be the first trial of POEM on lye ingestion induced esophageal stricture.

**Methods** A 25-year-old female presented with dysphagia since she accidentally drank detergent at age 7. She had several bougie dilations, a stent insertion, and 2 times esophagectomy with esophageal stricture from upper incisor 20 cm to 27 cm. However, no symptom has been improved and only soft diet was available. Upper gastrointestinal endoscopy showed an esophageal narrowing situated from anterior incisor 30 cm unable to pass. We diagnosed RBES and tried to perform conventional peroral endoscopic myotomy (POEM), however due to too much advanced fibrosis, we could not find the submucosal layer to perform submucosa tunnel. Then we tried “reverse” POEM which is known to be the new procedure; starts from incision to mediastinum and tunneling reversely upto right near the mucosal layer. The total length of the myotomy was 8 cm.

**Results** After the operation, esophagography and esophagogastroduodenoscopy showed the lumen to be widened at the previous stenotic site. At 1 month after “reverse” POEM, the patient was able to eat solid diet and started to gain weight.

**Conclusions** This case demonstrates an obviously positive response to our treatment. However, controlled trials with long-term follow-up are necessary to establish “reverse” POEM as a standard treatment for refractory benign esophageal stricture.

## eP288 EVALUATION OF TISSUE OXYGEN SATURATION (STO<sub>2</sub>) BEFORE AND AFTER CHEMOTHERAPY FOR ADVANCED ESOPHAGEAL CANCER BY OXYGEN SATURATION (OS) IMAGING

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DOI 10.1055/s-0040-1705055

**Aims** Oxygen saturation (OS) imaging (FUJIFILM Corporation, Tokyo, Japan) is a novel endoscopic technology which can directly measure and visualize the tissue oxygen saturation (StO<sub>2</sub>) of gastrointestinal tract pixel-by-pixel without any additional drugs. OS imaging is expected to contribute to cancer research which leads to predict the efficacy of anti-cancer treatment. The purpose of this study is to evaluate StO<sub>2</sub> and their changes due to chemotherapy in advanced esophageal cancer.

**Methods** From March 2018 to August 2019, 29 patients with advanced esophageal cancer who would receive preoperative chemotherapy (Cisplatin/5-FU or Docetaxel/Cisplatin/5-FU) and surgery were enrolled, and StO<sub>2</sub> were evaluated with OS imaging before and after chemotherapy. Tumor with mean StO<sub>2</sub> value of 5% lower than normal area was defined as hypoxic tumor, and chemotherapy response were compared between hypoxic and non-hypoxic tumors. Marked reduction was defined as 90% or more tumor volume reduction with endoscopic evaluation.

**Results** 9 of 29 were excluded due to poor imaging with bleeding or stenosis, and therefore 20 cases (T2: 2 cases, T3: 18 cases) were analyzed. In normal and tumor area, mean StO<sub>2</sub> value (median [range]) were 60.2% [55–66.6%] and 54.6% [35.8–66.6%] and standard deviations were 6.2 [5–8.7] and 8.5 [6.5–12.6], respectively. Median (range) difference of StO<sub>2</sub> value between tumor and normal area was –3.3 [–25–6]. 9 (45%) of 20 cases were shown as hypoxic tumor. After one course of chemotherapy, the saturation level was improved in all hypoxic tumor. Regarding chemotherapy response, marked reduction rate was 44% (4/9) in hypoxic tumor and 55% (6/13) in non-hypoxic tumor.

**Conclusions** OS imaging could evaluate the change of StO<sub>2</sub> value before and after chemotherapy, and oxygen saturation level in hypoxic tumor may improve after chemotherapy.

## eP289 EFFICACY OF PURASTAT AS A RESCUE THERAPY FOR REFRACTORY ACUTE GASTROINTESTINAL BLEEDINGS: A THREE CENTRE EXPERIENCE IN ITALY

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DOI 10.1055/s-0040-1705056

**Aims** Acute gastrointestinal bleeding (AGIB) results in significant mortality and morbidity. Topical haemostatic products have been developed for endoscopic use to help in the management of difficult bleeding. Our aim is to demonstrate the feasibility, efficacy and safety of PuraStat, a novel haemostat, to control acute gastrointestinal bleedings

**Methods** We describe 45 patients (25 males) treated for acute upper and lower AGIB in a 12 months period. In 32 patients bleeding occurred as a complication of a previous endoscopic procedure, mainly EMR and ERCP, while in 13 it derived from peptic ulcers, angiodysplasia, leiomyoma and surgical anastomosis. Bleeding was spurting in 7 cases and oozing in 38. PuraStat was used after the failure of at least two conventional haemostatic methods.

**Results** A mean of 2.7 haemostatic methods were attempted prior to inject PuraStat. Application of PuraStat achieved successful haemostasis in 93.3% of cases. In 20 patients, once haemostasis was obtained by PuraStat, endoscopist

stabilized haemostasis by using at least one further method. Recurrence of bleeding was observed in 8.9% of cases. In 10 patients with intraprocedural bleeding, the procedures (9 EMR and 1 ERCP) were completed following PuraStat haemostasis. No adverse events related to PuraStat were recorded.

**Conclusions** PuraStat is feasible, effective and safe in controlling different types of gastrointestinal haemorrhages after failure of current haemostatic methods. Its application does not hinder continuing endotherapy

## eP290 THE CLINICAL VALIDATION OF OXYGEN SATURATION IMAGING FOR VISUALIZING THE MODE OF ACTION OF PHOTODYNAMIC THERAPY FOR ESOPHAGEAL CANCER

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DOI 10.1055/s-0040-1705057

**Aims** Photodynamic therapy (PDT) consists of a photosensitizer and specific wavelength laser illumination, and the mode of action of PDT is known as production of reactive oxygen species in cancers cells and vascular shutdown effect. However, it is difficult to confirm the effect of PDT with ordinary endoscopy. Oxygen saturation (OS) imaging (FUJIFILM, Co., Tokyo) is a novel endoscopic technology which can directly measure and visualize the tissue oxygen saturation (StO<sub>2</sub>) of the surface of gastrointestinal tract. OS imaging is suspected as an ideal modality in theory for observing the vascular shutdown effect due to PDT. The purpose of this study is to validate the OS imaging for visualizing the mode of action of PDT for esophageal cancer.

**Methods** 13 patients with local recurrence after chemoradiotherapy for esophageal cancer were treated with PDT consisting talaporphin sodium and diode laser, and enrolled. Endoscopic observation using ordinary endoscope and OS imaging were performed before PDT, after illumination of 100 J/cm<sup>2</sup>, after illumination completion and one day after. StO<sub>2</sub> was measured at three points in the lesion using the OS imaging sampling tool for each evaluation.

**Results** OS imaging showed the extreme change to hypoxic state in accordance with the illuminated area, even though there was the almost invisible change with WLI. The median StO<sub>2</sub> value (%) at tumor lesion was 62 (range: 17–99) before PDT, and significantly decreased immediately after illumination, as follow; 3 (range: 0–57) at 100 J/cm<sup>2</sup> illumination, 1 (range: 0–6) at the completion of PDT and 3 (range: 0–32) at the second day.

**Conclusions** OS imaging was validated to visualize the changes of StO<sub>2</sub> in tumor before and after laser illumination. It can be the ideal imaging modality to observe the mode of action of PDT in clinical.

## eP291 USE OF ROADMAP FLUOROSCOPY IN UPPER GI ENDOSCOPY

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DOI 10.1055/s-0040-1705058

**Aims** Road Map fluoroscopy (RM) is a radiologic technique that enables visualization of anatomic structures using image subtraction at peak opacification. Our group has reported positive initial experience using RM during interventions.

**Aim** To evaluate the usefulness of RM to guide endoscopic interventions in the esophagus.

**Methods** Monocentric observational trial of consecutive patients with upper GI strictures in a university hospital. 38 investigations using RM were performed in 32 patients undergoing endoscopic interventions. Indications for interventions were: balloon dilatation: n = 15 including pneumatic balloon

dilatation for the treatment of achalasia, bouginage: n = 9 and diagnostic radiography without following intervention: n = 1.

In addition 14 stents, 7 partially covered and 6 fully covered and one duodenal stent were placed using RM as a guide for exact determination of stent length and diameter. Stents were also deployed under RM guidance.

**Results** In all procedures RM successfully guided the intervention. Endoscopic control revealed adequate stent position in all cases. The predicted length of stents by radiological measurements was correct in cases. Later dislocation of stents did not occur.

The resistance during bouginage was matching the location for RM projection of the stenosis. With the help of RM imaging dilatation balloons were easily centered inside the stenosis and thus slipping of the balloon was avoided and not observed.

Adverse events did not occur.

The average radiation dose expressed as dose area product was  $86.57 \pm 11.8 \text{ Gy}^2$ .

**Conclusions** As previously reported Road Map fluoroscopy is a safe and simple method for radiographic illustration of stenosis or anatomic changes throughout an endoscopic intervention.

## eP292 CONVOLUTIONAL NEURAL NETWORK BASED ALGORITHM FOR CECUM ACHIEVEMENT CONFIRMATION

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**DOI** 10.1055/s-0040-1705059

**DOI** 10.1055/s-0040-1705059

**Aims** Cecum intubation is the key criterion for the quality of colonoscopy. We tested the ability of computer-assisted image analysis using convolutional neural networks (CNNs) to confirm the achievement of the cecum.

**Methods** We designed and trained deep CNNs to detect the orifice of the appendix using a diverse and representative dataset of 1696 hand-labeled images from screening colonoscopies collected from more than 200 patients. This database was split in two datasets: training and validation with the ratio of 80% and 20%. Thus, 1356 images were used for training, which were additionally augmented using the geometric transformations. To evaluate the results during training, the validation set was used. In addition, the test set of 104 images was collected manually for the final evaluation of the results. We used a ResNet-50 network, which was pre-trained on the ImageNet dataset, and the output layer was replaced by three fully connected layers with dropout.

**Results** We used AUC and F1-score (the harmonic mean of the precision and recall) as an evaluation metrics. The threshold for computing F1-score was chosen optimal by the ROC-curve (receiver operating characteristic curve). The results are presented in the table.

As can be seen from the table the values of evaluation metrics are close for the validation and test sets, which indicates the strong generalization ability of the algorithm.

► **Tab.1** Results of evaluating algorithm.

	Validation set	Test set
ROC AUC	0.98	0.90
F1-score	0.873	0.886

**Conclusions** The CNN identified the appendix orifice with AUC of 0.98 and F1-score of 0.873. The CNN system detected the appendix orifice in real-time constraints using an ordinary desktop machine with a contemporary graphics processing unit. This system could carry out an automated control for the quality of colonoscopy

## eP293V CUTTING-EDGE EFFECTIVE ENDOSCOPIC TECHNIQUE TO REMOVE SCARRED POLYPS

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**DOI** 10.1055/s-0040-1705060

We report the case of a 80-year-old female with a scarred polyp in the rectum previously treated by multiple endoscopic mucosal resection (EMR) and APC. Surveillance colonoscopy showed, three centimeters above the anal verge, a LST-G of 40 mm, hemircircumferential with adenomatous pit pattern (Kudo III). After circumferential mark with APC and submucosal injection, by using EndoRotor, complete resection was achieved. PuraStat was applied over the resection base. The patient was discharged the same day. The resected tissue fragments were collected and histological assessment showed a tubule-villous adenoma with low-grade dysplasia. No recurrence was endoscopically revealed at 6 months' follow-up.

## eP294 ENDOSCOPIC INTERNAL DRAINAGE VS. LOW NEGATIVE PRESSURE ENDOLUMINAL VACUUM THERAPY FOR LEAKAGES AFTER ONCOLOGIC UPPER GASTROINTESTINAL SURGERY

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**DOI** 10.1055/s-0040-1705061

**Aims** Endoscopic internal drainage using pigtail stents (EID) serves as treatment option for leakages after upper GI oncologic surgery. Endoluminal vacuum therapy (EVT) also offers high closure rates and active therapy surveillance. Secretion drainage and mucosal irrigation are mechanisms of action. Both treatments have not been compared in larger studies.

**Methods** Between 2016 and 2019, patients treated for postoperative leakages after oncologic upper GI surgery at five reference centers for digestive endoscopy in France (group A) and Göttingen (group B) were included. General

patient- and procedure related data were retrospectively analyzed and compared using propensity score matching. Group A was treated with EID, group B received low negative pressure EVT (-20/-50 mmHg). Pigtailed were changed every 4 weeks, whereas EVT was repeated every 3–4 days. Besides descriptive analysis, comparison was performed using Fishers exact test and Poisson regression test.

**Results** A total of 35 (A) and 27 (B) patients were included. Age ( $62 \pm 8.8y$  A vs.  $66 \pm 10y$  B), Charlson Morbidity score ( $4 \pm 1.1$  A vs.  $5 \pm 2.1$  B) and diagnosis after surgery ( $12 \pm 9.8d$  A vs.  $8 \pm 8.5d$  B) were equal in both groups. Type of surgery was Ivor Lewis Esophagectomy in 48.6% (A) and 70.4% (B). Leakage sizes ranged from 5 mm to over 2 cm. Treatment success was higher in group A ( $n = 35/35$ ) than in group B ( $23/27$ ;  $p = 0.03$ ). Less endoscopies were necessary for leak closure in group A when compared to group B ( $n = 2.5 \pm 0.66$  A vs.  $4.1 \pm 3$  B;  $p = 0.008$ ). Esophageal stenoses during follow-up were less frequent after EID ( $n = 3/35$  A) vs. EVT ( $n = 4/27$ ;  $p = 0.05$ ).

**Conclusions** In this propensity score matched study, EID provides better healing rates and long-term outcome than low negative pressure EVT. EID presents a cost-effective alternative in patients with leakages after oncologic upper GI surgery. Larger studies are needed to confirm these primary results.

## eP295 ENDOSCOPIC FULL-THICKNESS RESECTION FOR THE MANAGEMENT OF DIFFICULT COLORECTAL LESIONS: A PROSPECTIVE COHORT STUDY

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DOI 10.1055/s-0040-1705062

**Aims** The aim of this study is to evaluate the safety and efficacy of endoscopic full-thickness resection for the management of difficult colonic lesions.

**Methods** Prospective cohort study of sequential patients referred to two tertiary referral centers for management of difficult colonic lesions. We used descriptive analysis, Student's t-test, Wilcoxon sum rank test and Chi square tests as appropriate.

**Results** We included 20 patients from two tertiary referral centers (70% male; median age 71.5 years, inter-quartile range [IQR] 65.5–80.0). About half of patient had cardiovascular comorbidities and 15% were receiving antiaggregants other than low-dose aspirin or anticoagulant therapy at the time of procedure. Indications for full-thickness resection included malignant histology or malignant appearing pit-pattern (40%), recurrence of lesions after previous endoscopic resection/surgery or non-lifting sign (50%), and intradiverticular or intrapapillary location (10%). The lesions were located at the rectum (25%), sigmoid (15%), descending colon (15%), ascending colon (20%), cecum (20%) and surgical anastomosis (5%). The lesions had a mean size of 19 mm (range 9–40 mm). The technical success of the full thickness procedure was 95% (in one case the procedure was not feasible because of difficult location), and lasted for a median 15 minutes (IQR 15–20). There were no immediate peri-procedural complications. Of those who were hospitalized, all but one patient (94%) were discharged on the successive day. During a median follow-up of 5 months (IQR 0–17 months), there was one severe complication, consisting of acute appendicitis requiring surgery. During follow-up we observed recurrences in two patients (17%), both small (< 10 mm) adenomatous recurrence about 6 months after the procedure, that were removed with biopsy forceps and/or argon plasma coagulation.

**Conclusions** Endoscopic full-thickness resection is a safe and effective method of treating malignant or difficult colonic lesions. Larger prospective studies are needed to confirm these results.

## eP295\_1 AUTOMATED CLASSIFICATION OF GASTRIC NEOPLASMS IN ENDOSCOPIC IMAGES USING A CONVOLUTIONAL NEURAL NETWORK

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DOI 10.1055/s-0040-1705298

**Aims** Visual inspection, lesion detection, and differentiation between malignant and benign features are key aspects of an endoscopist's role. The use of machine learning for the recognition and differentiation of images has been increasingly adopted in clinical practice. This study aimed to establish convolutional neural network (CNN) models to automatically classify gastric neoplasms based on endoscopic images.

**Methods** Endoscopic white-light images of pathologically confirmed gastric lesions were collected and classified into five categories: advanced gastric cancer, early gastric cancer, high grade dysplasia, low grade dysplasia, and non-neoplasm. Three pretrained CNN models were fine-tuned using a training dataset. The classifying performance of the models was evaluated using a test dataset and a prospective validation dataset.

**Results** A total of 5017 images were collected from 1269 patients, among which 812 images from 212 patients were used as the test dataset. An additional 200 images from 200 patients were collected and used for prospective validation. For the five-category classification, the weighted average accuracy of the Inception-Resnet-v2 model reached 84.6%. The mean area under the curve (AUC) of the model for differentiating gastric cancer and neoplasm was 0.877 and 0.927, respectively. In prospective validation, the Inception-Resnet-v2 model showed lower performance compared with the endoscopist with the best performance (five-category accuracy 76.4% vs. 87.6%; cancer 76.0% vs. 97.5%; neoplasm 73.5% vs. 96.5%;  $P < 0.001$ ). However, there was no statistical difference between the Inception-Resnet-v2 model and the endoscopist with the worst performance in the differentiation of gastric cancer (accuracy 76.0% vs. 82.0%) and neoplasm (AUC 0.776 vs. 0.865).

**Conclusions** The evaluated deep-learning models have the potential for clinical application in classifying gastric cancer or neoplasm on endoscopic white-light images.

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## ERRATUM

### Correction

Zhang D, Wang D, Wang TJ et al. ePP39 CHANGHAI ADVANCED ENDOSCOPY COURSES FOR ERCP TRAINING PROGRAM (CHANCE): A SHORT-TERM TRAINING MODEL IN CHINA. *Endoscopy* 2020, 52 (S01): S141.

In the above-mentioned article, institution 2 has been removed. This was corrected in the online version on May 27, 2020.

## ERRATUM

### Correction for OP120, OP167, OP261 and eP201.

Cortegoso Valdivia P, Sprujevnik T, Venezia L et al. OP120 ENDOSCOPIC CONTROL OF POLYP BURDEN WITH SMALL-BOWEL ENDOSCOPY IN PEUTZ-JEGHERS SYNDROME. A THIRTY-YEAR EXPERIENCE IN A TERTIARY REFERRAL CENTER. *Endoscopy* 2020, 52 (S01): S45–S46

Venon WD, Caronna S, Boschini M et al. OP167 RADIOFREQUENCY ABLATION USING BARRX FOR THE ENDOSCOPIC TREATMENT OF GASTRIC ANTRAL VASCULAR ECTASIA (GAVE) AND RADIATION PROCTITIS: A SINGLE CENTRE EXPERIENCE. *Endoscopy* 2020, 52 (S01): S60.

Dall'Amico E, Bruno M, Gaia S et al. OP261 A RETROSPECTIVE ASSESSMENT OF A NEW FRANSEEN-TIP NEEDLE'S DIAGNOSTIC PERFORMANCE AND ITS COMPARISON WITH STANDARD FNA NEEDLES AND WITH PROCORE 20G NEEDLE. *Endoscopy* 2020, 52 (S01): S92.

Cortegoso Valdivia P, Venezia L, Rizza S et al. eP201 EVEN IN CASE OF A 'SIMPLE' PNET...ONE NEVER KNOWS WHAT TO EXPECT. *Endoscopy* 2020, 52 (S01): S303.

In the above-mentioned articles, the name of Cortegoso Valdivia P has been corrected. This was corrected in the online version on May 27, 2020.