

Endoscopy

Supplement

S1/2022

This journal is indexed
in MEDLINE, Current
Contents (CM + LS),
Science Citation Index,
and in EMBASE/Excerpta
Medica and SCOPUS

Official Organ of the
European Society
of Gastrointestinal
Endoscopy (ESGE) and
Affiliated Societies



**ESGE
DAYS
2022**

**Advancing endoscopy
Forging connections**

April 28 – 30, 2022 · Prague

A HYBRID EVENT



ESGE Days 2022

Abstract issue



Thieme

ESGE Days 2022

**Datum/Venue:**

28.–30. April 2022, Prague, Czech Republic

Chairman:

Helmut Messmann (Germany)

ESGE President and ESGE Days 2022 Scientific Committee Chairman

Welcome Message

Dear Colleagues,

It is my pleasure to welcome you to the ESGE Days 2022 *Endoscopy* Abstract Supplement.

It is with heartfelt thanks that I acknowledge the researchers who submitted their work to our meeting and it's our privilege at ESGE Days 2022 to highlight their science. We are again overwhelmed by the interest of endoscopists in being part of ESGE Days. Our fledgling congress started in just 2018 and it has been a rocky road over the past two years due to COVID-19. However, there remains a strong sense of positivity that coming together to learn from each other, and share the best and most pioneering science, is crucial to improving patient care in endoscopy and advancing our field.

We feel honoured to have research work submitted from many different parts of the world. 780 abstracts and 173 video abstracts were submitted, coming from 58 different countries. Although we are a European society we welcome the rich international knowledge our colleagues from further afield can provide. Despite the challenging situation that we are faced with because of the pandemic, the abstracts received were of high scientific quality, including some key randomized controlled trials which will help shape future clinical practice.

I am also proud that we are again giving 60 young researchers with top abstracts travel grants to assist them to present their work in person and share in the knowledge exchange on site.

Finally, I would like to say a big thank you to the Scientific Committee for creating an excellent and original program with high quality free paper sessions at its core. It is through the Committee's hard work, and the dedication of the reviewers who took time to score the abstracts, that we are very pleased to accept 857 abstracts to our congress this year, of which 294 are oral presentations. We are convinced that these abstracts will play an important role in the future development of many different fields of endoscopy!

I hope to see you all in Prague!

Professor Marianna Arvanitakis
Scientific Committee Coordinator



- S1 Welcome message
S5 ESGE Days 2022 Best abstracts

Thursday, 28 April 2022

- S5 Opening session with best abstracts
S7 ESGE Days 2022 Oral presentations

Thursday, 28 April 2022

- S7 Cutting the (muscular) edge: peroral endoscopic myotomy
S8 Old and new ones: finding the appropriate approach to small bowel diseases
S11 Diagnostic and therapeutic EUS in pancreatic disease
S13 Endoscopic treatment for gastric and duodenal tumors
S16 Endoscopic grading and surveillance in IBD
S19 Optimizing bowel preparation and your service's quality
S22 Colorectal Cancer (CRC) Screening (WEO-ESGE joint session)
S23 Esophageal early cancer: Is ESD ready to take on the challenge?
S28 Accessing the gallbladder and bile duct
S30 Colorectal Cancer (CRC) Screening (WEO-ESGE joint session)
S31 Gastrointestinal cancer: from early diagnosis to management of advanced disease
S33 Efficient diagnostic approaches to the small bowel
S35 Better, faster, stonger : improving training in endoscopy
S38 EARLY ESOPHAGEAL CANCER: Taking the diagnostics to a next level
S41 Post polypectomy and IBD surveillance
S44 SAFETY FIRST !

Friday, 29 April 2022 Club A

- S47 Role of EUS in detecting malignancy in pancreatic cystic lesions
S50 Interval and post colonoscopy colorectal cancer
S52 Altered anatomy: Finding solutions
S54 Bariatric endoscopy: efficacy and outcomes
S56 Early colorectal cancer: diagnosis and treatment
S59 Managing Biliary Complications
S61 From Luminal to Third space: Endoscopy in the esophagus
S62 Detection and optical diagnosis of colorectal lesions
S65 Obesity: new endoscopic techniques and treatment of complications
S66 Gastroduodenal lesions: improving resection and bleeding prediction

- S68 Small bowel endoscopy: special challenges – special solutions
S69 Cholangioscopy – a revival
S71 Gastroparesis and outlet obstruction
S73 Colonoscopy screening and detection rates
S75 What's new in imaging?
S79 Gastric premalignant conditions: improving detection
S81 How to manage adverse events in colonoscopy
S82 Biliary strictures and stenting: what's new?

Saturday, 30 April 2022

- S85 Optimizing EUS guided interventions
S88 Advanced endoscopic resection for colorectal lesions
S89 Artificial intelligence pushing the endoscopist's skills
S92 Barrett's Related neoplasia: is endoscopy the cure?
S94 Decision making and performing ESD for colorectal lesions
S96 Diagnostic challenges in the liver, bile duct and pancreas
S98 Subepithelial lesions: from EUS evaluation to endoscopic resection
S99 Clinical presentations of colonoscopy
S101 How to access the pancreas
S103 Good, Green, Great endoscopy
S105 Polypectomy including cold snare
S107 Advanced diagnostic and therapeutic EUS techniques
S109 Complication management in the esophagus: when things become really dirty
S110 Treatment of small bowel diseases – new evidence and new devices
S112 Endoscopy beyond the lumen

- S115 ESGE Days 2022 Digital poster exhibition
S287 Authors' index

The abstract issue status is as at February 24, 2022.

Abbreviations:
BA: Best abstract
OP: Oral presentation
eP: ePoster

Endoscopy

Official Organ of the European Society of Gastrointestinal Endoscopy (ESGE)
and affiliated societies

Editor-in-Chief

Peter D. Siersema, The Netherlands

Co-Editors-in-Chief

Mário Dinis-Ribeiro, Portugal
Heiko Pohl, USA

Associate Editor

Thierry Ponchon, France

Co-Editors

Nicholas Burgess, Australia
Wai Yan Philip Chiu, Hong Kong
Lorenzo Fuccio, Italy
Klaus Mönkemüller, Germany
Mathieu Pioche, France
Marcin Polkowski, Poland
Manon Spaander, The Netherlands

Social Media Editors

Ioannis Papanikolaou, Greece

Managing Editor

Hilary Hamilton-Gibbs, Germany

Chief Copy Editor

Teresa Brady, UK

Editorial Assistants

Françoise Heidenreich, Germany
Elisabeth Honner, Germany

Statistical Advisors

Kurt Ulm, Germany
Stefan Wagenpfeil, Germany
Jonas Ranstam, Sweden
Jennifer Cooper, United States
Milada Cvančarova Smastuen, Norway

Advisory Board

Joseph E. Geenen, USA
Glen Lehman, USA
Nib Soehendra, Germany
Hiroaki Suzuki, Japan
Guido N. J. Tytgat, The Netherlands

Former Editors

Meinhard Classen †, Germany
Ludwig Demling †, Germany
Thomas Rösch, Germany

Editorial Board

Lars Aabakken, Norway
Seiichiro Abe, Japan
Joseph Anderson, USA
Fadi Antaki, USA
Miguel Areia, Portugal
Marianna Arvanitakis, Belgium
Amol Bapaye, India
Marc Barthet, France
Jacques Bergman, The Netherlands
Marco Bustamante Balen, Spain
Anthoni Castells, Spain
Emmanuel Coron, France
Guido Costamagna, Italy
Jacques Devière, Belgium
Xavier Dray, France
Alanna Ebigbo, Germany
James East, UK
Monika Ferlitsch, Austria
Pietro Fusaroli, Italy
Begoña González-Suárez, Spain
Ian Gralnek, Israel
Cesare Hassan, Italy

Øyvind Holme, Norway
Jeanin van Hooft, The Netherlands
Shayan Irani, USA
Hajime Isomoto, Japan
Peter Klare, Germany
Arjun Koch, Netherlands
Alberto Larghi, Italy
Wai K. Leung, China
Alexander Meining, Germany
Helmut Messmann, Germany
Yuichi Mori, Norway
Alan Moss, Australia
Eduardo de Moura, Brazil
Horst Neuhaus, Germany
Ichiro Oda, Japan
Adolfo Parra-Blanco, UK
Swati Patel, USA
Katarzyna Monika Pawlak, Poland
Oliver Pech, Germany
Julio Pereira-Lima, Brazil
Manuel Perez-Miranda, Spain
Massimiliano di Pietro, UK
Krish Ragunath, UK
Miguel Angel Ramirez Luna, Mexico
Jaroslaw Regula, Poland
Rungsum Rerknimitr, Thailand
Enrique Rodríguez de Santiago, Spain
Carla Rolanda, Portugal
Yutaka Saito, Japan
Arthur Schmidt, Germany
Dong-Wan Seo, Korea
Yoji Takeuchi, Japan
Konstantinos Triantafyllou, Greece
Geoffroy Vanbiervliet, France
Michael Vieth, Germany
Dennis Yang, USA

Endoscopy

Official Organ of the European Society of Gastrointestinal Endoscopy (ESGE)
and affiliated societies

Editorial Office

Endoscopy Editorial Office
Hamilton Services GmbH
Landwehr Str. 9
80336 Munich
Germany
Tel. +49-89-9077936-00
Fax +49-89-907793620
endoscopy.editorialoffice@thieme.de

ESGE

European Society of Gastrointestinal
Endoscopy (ESGE) governing board



Executive committee:
Helmut Messmann, President
(Germany)
Marió Dinis-Ribeiro, Past President
(Portugal)
Ian M. Gralnek, President Elect (Israel)
Raf Bisschops, Secretary General (Belgium)
Cesare Hassan, Treasurer (Italy)

Councillors:
Vicente Lorenzo Zuniga (Spain)
Michael Kaminski (Poland)
Peter D. Siersema (The Netherlands)
Alberto Tringali (Italy)
Enrique Rodriguez de Santiago (Spain)
Tony C. Tham (Ireland)
George Webster (United Kingdom)

Committees:
Education Committee Chair:
Istvan Hritz (Hungary)
Scientific Committee Chair:
Marianna Arvanitakis (Belgium)
ESGE Young Endoscopists Committee Chair:
Andrei Mihai Voiosu (Romania)
Research Committee Chair:
Pradeep Bhandari (United Kingdom)
Quality Improvement Committee Chair:
Monika Ferlitsch (Austria)
Public Advocacy Committee Chair:
Michael Bretthauer (Norway)
Guidelines Committee Chair:
Konstantinos Triantafyllou (Greece)

Secretariat
European Society of Gastrointestinal
Endoscopy (ESGE)
Hamilton Services GmbH
Landwehr Str. 9
80336 Munich
Germany
Tel. +49-89-907793611
Fax +49-89-907793620
secretariat@esge.com

Publishers

Georg Thieme Verlag KG
Ruedigerstraße 14
D-70469 Stuttgart
P.O. Box 301120
70451 Stuttgart
Germany

Thieme Medical Publishers, Inc.
333 Seventh Avenue
USA, New York, NY 10001

For subscription information
please contact: endoscopy@thieme.de

Impact Factor: 10.093

BA001 PLASTIC STENT VS LUMEN APPOSING METAL STENTS IN ENDOSCOPIC ULTRASOUND-GUIDED DRAINAGE OF WALLED-OFF PANCREATIC NECROSIS: A MULTICENTRE RANDOMISED TRIAL (THE PROMETHEUS STUDY)

Authors Velasquez-Rodriguez J.G.¹, Bas-Cutrina F.¹, Vazquez-Sequeiros E.², Esteban Lopez-Jamar J.M.³, Teran-Lantaron A.⁴, Gonzalez-Huix F.⁵, Perez-Miranda M.⁶, Guarner-Argente C.⁷, Vila-Costas J.J.⁸, Garcia-Sumalla A.¹, Garcia Garcia De Paredes A.², Fisac-Vazquez J.³, Moris M.⁴, Miquel Salas I.⁵, De La Serna Higuera C.⁶, Murzi M.⁷, Salord S.¹, Foruny J.R.², Ruiz-Osuna S.¹, Pelaez-Serra N.¹, Sanllorente M.¹, Tebe Cordomi C.¹, Hereu P.¹, Gornals J.B.¹

Institutes 1 Hospital Universitari de Bellvitge-IDIBELL, L'Hospitalet, Barcelona, Spain; 2 Hospital Universitario Ramon y Cajal, Madrid, Spain; 3 Hospital Clinico San Carlos, Madrid, Spain; 4 Hospital Universitario Marques de Valdecilla, Santander, Spain; 5 Hospital Universitari Arnau de Vilanova, Lleida, Spain; 6 Hospital Universitario Rio Hortega, Valladolid, Spain; 7 Hospital de la Santa Creu i Sant Pau, Barcelona, Spain; 8 Complejo Universitario de Navarra, Pamplona, Spain

DOI 10.1055/s-0042-1744560

Aims Till date, there is not enough quality of evidence to recommend exclusively the use of LAMS. The main objective is to assess whether the theoretical benefit of LAMS is superior to DPS in the management of Walled-off necrosis (WON).

Methods This is a multicentre randomized controlled, prospective clinical trial with two parallel group. Primary endpoint is the short-term (4-weeks) clinical success determined by the reduction of the pancreatic collection (<50% or <5cm). Secondary endpoints: long-term clinical success (4-months); number of procedures; hospital stay, procedure duration, recurrence, safety and costs. A cross-over rescue is considered when initial protocol treatment fails

Results Between June-2017 and October-2020, 99 patients were screened and 61 patients with WON were randomized and included for protocol analysis: 30 patients in LAMS group and 31 in DPS group. All included patients were followed up for a minimum of 12-month. Short-term clinical success was superior in LAMS-cohort, without significant difference (63 %LAMS vs 45 %DPS, $p=0.154$). Procedure duration (38 vs 53min, $p<0.005$) was significantly shorter in LAMS-cohort. Although, more additional and rescue procedures were needed in DPS cohort, it was non-significant. Length of hospital stay and stent-related adverse events (39 %LAMS vs 45 %DPS, $p<0.641$) were similar between cohorts. Global success treatment (96-100 %) was equal at the end of follow-up. ClinicalTrials.gov, NCT03100578

► **Table 1**

	LAMS	DPP	p
Total SAES stent-related, n (%)	13 (39)	14 (45)	0.641
Fever, n (%)	4 (12)	11(35)	
Bleeding, n (%)	6 (18)	4(13)	

Conclusions Although the only significant difference between LAMS and DPS was the procedure duration, a greater number of additional and rescue procedures were required in the DPS-cohort; and short-term clinical success was higher in LAMS-group. The adverse event rate was considerable in both groups.

BA002 ARTIFICIAL INTELLIGENCE FOR REAL-TIME OPTICAL DIAGNOSIS OF NEOPLASTIC POLYPS DURING COLONOSCOPY

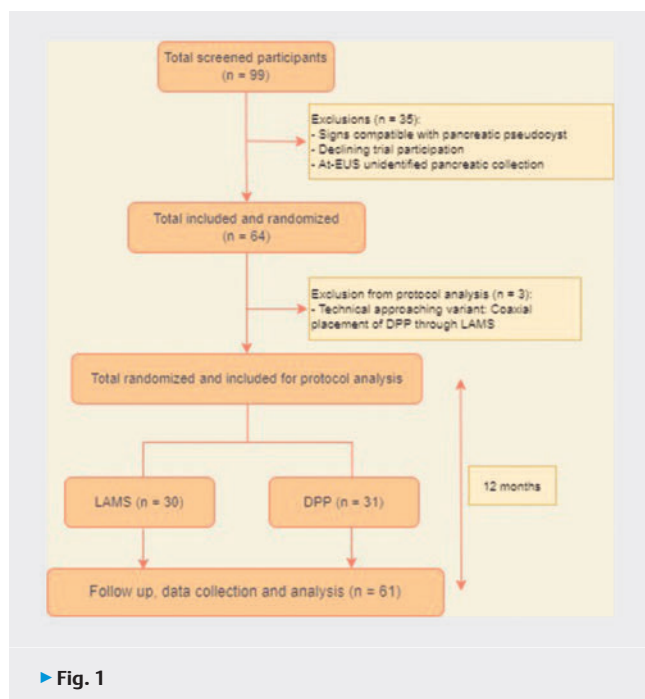
Authors Barua I.^{1,2}, Wieszczy P.^{1,2,3}, Kudo S.-e.⁴, Misawa M.⁴, Holme Ø.^{1,2,5}, Gulati S.⁶, Williams S.⁶, Mori K.⁷, Itoh H.⁷, Takishima K.⁴, Mochizuki K.⁴, Miyata Y.⁴, Mochida K.⁴, Akimoto Y.⁴, Kuroki T.⁴, Morita Y.⁴, Shiina O.⁴, Kato S.⁴, Nemoto T.⁸, Hayee B.⁶, Patel M.⁶, Gunasingam N.⁶, Kent A.⁶, Emmanuel A.⁶, Munck C.⁹, Nilsen J.A.⁹, Astrup Hvattum S.⁹, Frigstad S.O.⁹, Tandberg P.⁹, Løberg M.^{1,2}, Kalager M.^{1,2}, Haji A.⁶, Bretthauer M.^{1,2}, Mori Y.^{1,2,4}

Institutes 1 Oslo University Hospital, Clinical Effectiveness Research Group, Department of Transplantation Medicine, Oslo, Norway; 2 University of Oslo, Clinical Effectiveness Research Group, Oslo, Norway; 3 Centre of Postgraduate Medical Education, Department of Gastroenterology, Hepatology and Clinical Oncology, Warsaw, Poland; 4 Showa University Northern Yokohama Hospital, Digestive Disease Center, Yokohama, Japan; 5 Sorlandet Hospital Kristiansand, Department of Medicine, Kristiansand, Norway; 6 King's College Hospital NHS Foundation Trust, King's Institute of Therapeutic Endoscopy, London, United Kingdom; 7 Nagoya University, Graduate School of Informatics, Nagoya, Japan; 8 Showa University, Yokohama Northern Hospital, Department of Diagnostic Pathology, School of Medicine, Kanagawa, Japan; 9 Baerum Hospital, Vestre Viken Hospital Trust, Department of Medicine, Gjetsum, Norway

DOI 10.1055/s-0042-1744561

Aims Artificial intelligence using computer-aided diagnosis (CADx) may enable colonoscopists to distinguish between neoplastic polyps requiring removal and non-neoplastic polyps not requiring removal during colonoscopy. This may reduce costs and resources and prevent polyp overtreatment in colorectal cancer screening.

Methods We performed a multicenter clinical trial comparing a novel CADx system using real-time ultra-magnifying polyp visualization during colonoscopy with standard visual inspection of small (≤ 5 mm in diameter) polyps in the sigmoid colon and the rectum for optical diagnosis of neoplastic histology. All polyps were subsequently removed. The primary endpoint was sensitivity for

► **Fig. 1**

neoplastic polyps compared to histopathology. Secondary endpoints were specificity and colonoscopist confidence level of optical diagnosis.

Results We assessed 1,289 individuals for eligibility at colonoscopy centers in Norway, the United Kingdom and Japan. We detected 892 eligible polyps in 518 patients and included them in analyses; 359 neoplastic and 533 non-neoplastic. Sensitivity for diagnosis of neoplastic polyps with standard visual inspection was 88.4% (95% confidence interval (CI) 84.3-91.5) compared to 90.4% (95%CI 86.8-93.1) with CADx ($p=0.33$). Specificity was 83.1% (95%CI 79.2-86.4) with standard visual inspection and 85.9% (95%CI 82.3-88.8) with CADx ($p=0.04$). The proportion of polyp assessment with high confidence was 74.2% (95%CI 70.9-77.3) with standard visual inspection versus 92.6% (95%CI 90.6-94.3) with CADx ($p<0.001$).

► Table 1

	Standard diagnosis	CADx diagnosis
Sensitivity - % (95% CI)	88.4 (84.3-91.5)	90.4 (86.8-93.1)
Specificity - % (95% CI)	83.1 (79.2-86.4)	85.9 (82.3-88.8)
High confidence of optical diagnosis - % (95%CI)	74.2% (70.9-77.3)	92.6% (90.6-94.3)

Conclusions Real-time polyp assessment with CADx did not significantly increase sensitivity for neoplastic polyps, but increased specificity and improved confidence of optical diagnosis.

(UMIN no. 000035213; funding Norwegian Research Council, Norwegian Cancer Society, Japan Society for the Promotion of Science)

BA003 EUS- GUIDED RENDEZVOUS TECHNIQUE VERSUS PRECUT PAPILOTOMY AS SALVAGE TECHNIQUE IN PATIENTS OF BENIGN BILIARY DISEASE WITH DIFFICULT BILIARY CANNULATION: A RANDOMIZED CONTROLLED TRIAL

Authors Choudhury A.¹, Samanta J.¹, Muktesh G.¹, Dhar J.¹, Kumar A.¹, Shah J.¹, Gupta P.², Gupta V.³, Yadav T.d.³, Kochhar R.¹

Institutes 1 Postgraduate Institute of Medical and Research, Gastroenterology, Chandigarh, India; 2 Postgraduate Institute of Medical and Research, Radiology, Chandigarh, India; 3 Postgraduate Institute of Medical and Research, Surgery, Chandigarh, India

DOI 10.1055/s-0042-1744562

Aims Standard salvage technique used for difficult bile duct cannulation (DBDC) is pre-cut papillotomy (PcP), while endoscopic ultrasound-guided rendezvous technique (EUS-RV) is a relatively newer modality. Prospective comparative data between these two techniques as salvage for biliary access in patients of benign biliary disease with DBDC is lacking and hence, this study was planned.

Methods All patients of benign biliary disease with DBDC between July 2020-May 2021 were randomized to salvage technique by EUS-RV or PcP. DBDC was defined as per ESGE guidelines. Patients with failure in EUS-RV were crossed over to PcP and vice-versa. All patients received standard post-ERCP pancreatitis (PEP) prophylaxis. Outcome measures such as technical success, time required for the procedure, complication rates were documented.

Results A total of 100 patients (male 28%) with DBDC were included in the study. The technical success rate (92% vs. 90%; $p=1.00$), median procedure time (10.1 minutes vs. 9.75 minutes; $p=0.315$) and overall complications rates (12% vs 10%; $p=0.749$) were similar between the two arms. 5 patients (10%) in EUS-RV and 5 patients (10%) in PcP group had developed PEP. Inadvertent PD cannulation was a significant the risk factor for PEP ($p<0.001$). In the sub-

group of patients without prior inadvertent PD cannulation, EUS-RV had trend towards lower risk of PEP than PcP (0% vs 5.6%; $p=0.49$).

► Table 1

	EUS-RV (n = 50)	Precut Papillotomy (n = 50)	p value
Technical Success	46 (92%)	45 (90%)	1.00
Overall time (total time) of the procedure (min.)			
(Median; IQR; min-max)	10.1;16.8;1.5-45.25	9.75; 7.79; 1.75-34	0.32
Post-ERCP pancreatitis	5 (10%)	5 (10%)	0.10
Post-ERCP pancreatitis in the absence of inadvertent PD cannulation	0/36 (0%)	2/36 (5.6%)	0.49

Conclusions EUS-RV and PcP have comparable success rates as salvage techniques in the technically challenging cohort of DBDC, with acceptable complications rates. EUS-RV nullifies the risk of PEP in the absence of prior inadvertent PD cannulation. (Trial no.: CTRI/2020/07/026613).

BA004 GASTRIC PERORAL ENDOSCOPIC MYOTOMY (GPOEM) VERSUS BOTULINIUM TOXIN INJECTION (BTI) FOR THE TREATMENT OF REFRACTORY GASTROPARESIS: FIRST DOUBLE-BLIND RANDOMIZED CONTROLLED STUDY

Authors Gonzalez J.-M.¹, Picohe M.², Garbay V.¹, Mion F.², Barthet M.¹, Vitton V.¹

Institutes 1 Aix-Marseille Université, Hôpital Nord, Gastroenterology, Marseille, France; HCL, Hôpital Edouard Herriot, Gastroenterologie, Lyon, France

DOI 10.1055/s-0042-1744563

Aims This is the first randomized study comparing the clinical efficacy of GPOEM with pyloric BTI in refractory gastroparesis. The aims were to compare the 3-month and 1 year efficacy (GCSI score), GES evolution, adverse events, quality of life (GIQLI and SF-12). Predictive factors were analyzed.

Methods This was a prospective, randomized, double-blind study conducted in two French expert centers. Patients had severe, refractory gastroparesis, evolving for >6 months and confirmed by gastric emptying scintigraphy (GES), and were randomized into two groups: GPOEM and BTI. Follow-up was 1 year.

Results 40 patients were included, 22 women and 18 men, mean age 48.1 ± 17.4 years. Etiologies were diabetic ($n=11$), idiopathic ($n=18$), postoperative ($n=6$), or mixed ($n=4$). Both groups were comparable at baseline. Clinical success at 3 months and 1 year were 73.3% and 67% in the GPOEM group vs. 53.3% and 57% in the Botox group ($p=0.26$; $p=0.58$), respectively. The GCSI deltas were 1.48 ± 1.17 versus 1.15 ± 0.57 (NS) at 3 months and 1.2 ± 1 versus 0.9 ± 1.2 (NS) at 1 year, respectively. There was no difference in quality of life. Only one minor AE occurred in the GPOEM group. GES improvement rate was 72% after GPOEM against 50% after BTI (NS).

Conclusions This study confirms the results of open studies, showing clinical success of 65% at 1 year for GPOEM. Despite a trend in its favor of GPOEM, no significant difference was demonstrated with BTI. These results should be completed in larger study with greater power.

OP001 LONG-TERM EFFICACY AND GASTROESOPHAGEAL REFLUX DISEASE AFTER PER ORAL ENDOSCOPIC MYOTOMY (POEM): A PROSPECTIVE STUDY WITH 5-YEARS OBJECTIVE FOLLOW-UP

Authors Vespa E.^{1,2}, Maselli R.^{1,2}, Pellegatta G.², Galtieri P.A.², Cariani E.², Capogreco A.¹, Spadaccini M.², Nicoletti R.², Craviotto V.², Omodei P.², Anderloni A.², Fugazza A.², Carrara S.², Ferrara E.C.², Hassan C.¹, Repici A.^{1,2}

Institutes 1 Humanitas University, Department of Biomedical Sciences, Rozzano, Italy; 2 Humanitas Research Hospital IRCCS, Department of Gastroenterology and Hepatology, Rozzano, Italy

DOI 10.1055/s-0042-1744564

Aims Peroral endoscopic myotomy (POEM) has shown excellent short-term safety and efficacy; long-term data are limited. Aim of the study was to assess durability of POEM efficacy and long-term GERD evolution.

Methods We prospectively included all patients who underwent POEM between June 2012 and August 2016 at our center. At 3, 12, 36 and 60 months after POEM, patients underwent clinical assessment and objective follow-up with high-resolution manometry, upper endoscopy and pH-impedance study.

Results Out of 414 consecutive patients treated (2012–2021), 94 had long term follow-up and were included. Median age was 57 years (range 17–90), 65.9% were males; 68.1% had achalasia type II. Adverse events occurred in 9.5% of patients: 5 mild and 4 moderate. No severe adverse events, surgical conversions or deaths occurred.

Clinical success after POEM persisted in 95.7%, 93.3%, 86.49% and 84.51% of patients at 3, 12, 36 and 60 months; respective clinical reflux rates were 28.7%, 38.6%, 35.7% and 20.9%; a significant decrease was observed between 12 and 60 months (38.6% vs 20.9%, $p = 0.02$).

As regards objective GERD monitoring, low grade erosive esophagitis (Los Angeles A-B) was observed in 29.5%, 22.7%, 40% and 31.7%, grade C-D in 1.1%, 2.5%, 3.6% and 2.4% at 3, 12, 36 and 60 months; respective abnormal pH-impedance study rates were 31.5%, 28.3%, 30.4% and 26.4%.

Conclusions POEM shows reassuring long-term efficacy and safety, with clinical success persisting in more than 80% of patients after 5 years. Clinical post-POEM reflux affects nearly 1 out of 4 patients and seems to decrease over time.

OP002V POEM, SEPTOTOMY AND RESTORATION OF ESOPHAGEAL LUMEN WITH OTSC. CLOSING THE CIRCLE OF ESOPHAGEAL DIVERTICULA MANAGEMENT

Authors Albéniz E.¹, Estremera-Arévalo F.¹, Gómez Alonso M.¹, Rosón P.J.², Gallego Rojo F.J.³, Vila J.¹, Montori S.⁴

Institutes 1 Hospital Universitario de Navarra (HUN); Navarrabiomed; Universidad Pública de Navarra (UPNA); IdISNA, Gastroenterology, Pamplona, Spain; 2 Hospital Quirón Salud Málaga, Gastroenterology, Málaga, Spain; 3 Hospital de Poniente, Gastroenterology, El Ejido, Almería, Spain; 4 Navarrabiomed, Hospital Universitario de Navarra (HUN), Universidad Pública de Navarra (UPNA), IdISNA, Gastrointestinal Endoscopy Research Unit, Pamplona, Spain

DOI 10.1055/s-0042-1744565

A patient with type III achalasia with three diverticula was treated by POEM. An uninterrupted posterior myotomy was performed to ensure complete dissection of the spastic segment. The myotomy was also driven to dissect the diverticula septum. The two bigger diverticula pouches were everted with over-scope clips (OTSC). Early barium swallow demonstrated restored esophageal

anatomy with normal contrast flow. The patient remains asymptomatic on a full texture diet. A multimodal one-session endoscopic procedure treating both the underlying motility disorder and the diverticula, with restoration of the lumen mechanically (OTSC), will lead to better rates of therapeutic success.

OP003 CONCOMITANT ENDOSCOPIC FUNDOPLICATION AFTER PER ORAL ENDOSCOPIC MYOTOMY (POEM + F) FOR PREVENTION OF POST-POEM GASTRO-ESOPHAGEAL REFLUX – SHORT, MEDIUM AND LONG-TERM OUTCOMES

Authors Gandhi A.¹, Bapaye J.², Raina H.¹, Ansari J.³, Pujari R.¹, Nikumbh T.¹, Bapaye A.¹

Institutes 1 Deenanath Mangeshkar Hospital and Research Centre, Shivanand Desai Centre for Digestive Disorders, Pune, India; 2 Rochester General Hospital, New York, United States; 3 Deenanath Mangeshkar Hospital and Research Centre, Pune, India

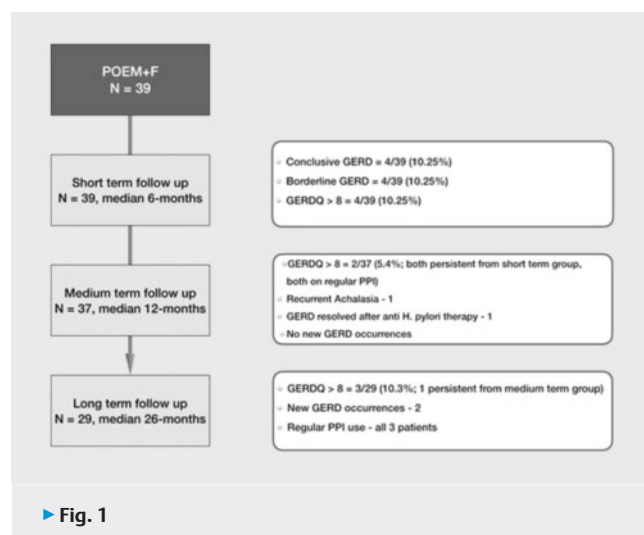
DOI 10.1055/s-0042-1744566

Aims Post per-oral endoscopic myotomy (POEM) gastro-esophageal reflux (GER) frequently reported. Concomitant fundoplication (POEM + F) –promising short-term results in preventing GER. This single centre study reports incidence of post-POEM GER –short-, medium- and long-term follow up (f/u) following POEM + F.

Methods Retrospective analysis of prospectively maintained POEM + F database. Abstracted data –demographics, achalasia type, Eckardt score (ES), procedure duration, complications, 3-monthly f/u –2 years. GER assessment –GerdQ scores, wrap integrity, esophagitis on EGD, esophageal acid exposure time (E-AET) & DeMeester score –pH studies. Lyon consensus –objective & GerdQ –subjective assessment. PPI usage documented.

Results Study duration –March 2019 to October 2021; N = 39; M:F = 20:19; mean age –42.7y (SD 13.66); Dysphagia improvement in all (mean [SD] pre- and post-POEM ES –8.51 [1.08] and 0.89 [0.3] respectively, $p < 0.05$). Mean POEM time (SD) –60.51 (16.3) minutes; concomitant fundoplication time –41.7 (10.4) minutes. Median duration of short-, medium- and long-term f/u –6 (IQR 5–6), 12 (IQR 10.5–12), 26 (IQR 22–29) months respectively.

Short term –N = 39; GerdQ > 8 –4/39 (10.25%); 2 –adequate wrap, no esophagitis; 1 –loose wrap, no esophagitis; 1 –adequate wrap, Gr.C esophagitis, HP gastritis. Conclusive GER (Gr.C esophagitis/abnormal EAET) –4/39 (10.25%); Borderline GER (Gr.A esophagitis & normal EAET) –4/39 (10.25%). EGD –wrap integrity: adequate (36), loose (1), indistinct (2); Gr.C esophagitis –1/39 (2.5%); wrap –adequate; abnormal EAET; Gr.A esophagitis –5/39 (12.82%); wrap: adequate –3, indistinct –2, EAET: normal –4, abnormal –1).



Medium term—N = 37; GerdQ > 8 – 2/37 (5.4 %); continued from short-term, both—Gr.B esophagitis & on regular PPI. 1—improved after anti-H. Pylori therapy; 1—recurrent achalasia. No new refluxers. On demand PPI—additional 3 patients.

Long term—N = 29; GerdQ > 8 – 3/29 (10.3 %); one persistent—1/29 (3.4 %); two new (2/29, 6.9 %; previously—no symptoms; no esophagitis & adequate wrap). All 3—regular PPI. 1—resolved refluxer (No esophagitis; normal EAET), using on demand PPI.

Conclusions Concomitant fundoplication (POEM + F) is effective and durable to prevent post POEM GER. Outcomes—sustained at median two-year f/u. Delayed GER at medium- and long-term is infrequent. Most patients can discontinue PPI. Study limitations—lack of objective assessment at long-term f/u.

OP004 RISK FACTORS FOR EARLY FAILURE OF PERORAL ENDOSCOPIC MYOTOMY (POEM) IN ACHALASIA: A RETROSPECTIVE MULTICENTER STUDY

Authors Vauquelin B.¹, Berger A.², Pioche M.³, Barret M.⁴, Wallenhorst T.⁵, Coron E.⁶, Roman S.⁷, Chaussade S.⁴, Queneherve L.⁶, Ponchon T.³, Olivier R.⁸, Zerbib F.²

Institutes 1 Centre Hospitalier Universitaire de Bordeaux Groupe Hospitalier Sud, Bordeaux, France; 2 Centre Hospitalier Universitaire de Bordeaux Groupe hospitalier Sud, Bordeaux, France; 3 Hôpital Edouard Herriot, Lyon, France; 4 Hôpital Cochin, Paris, France; 5 Hôpital Pontchaillou, Rennes, France; 6 Centre Hospitalier Universitaire de Nantes, Nantes, France; 7 Hospices Civils de Lyon, Lyon, France; 8 Centre Hospitalier Universitaire de Poitiers, Poitiers, France

DOI 10.1055/s-0042-1744567

Aims The aims of our study were to determine the early failure rate of POEM and to identify predictive risk factors.

Methods It was a multicenter retrospective study in 5 tertiary centers. Were included all consecutive adult patients who had undergone a first POEM for primary achalasia until April 2021. The primary endpoint was rate of early failure defined by an ES > 3 at 3 months after POEM. The secondary endpoint was the evaluation of predictive risk factors of early failure. Two cohorts were considered: one consisted in the total population in which only basic variables were collected; in the other cohort, a case-control study was performed, in which were included early failure patients (n = 69), matched (1:2) with early success patients (n = 129).

Results A total of 1043 patients were treated by POEM; 310 were excluded (including 82 patients lost to follow-up). Among the 733 remaining patients, the early failure rate was 9.4 %. Early failure predictive factors in the total population were age ≤ 45 years (OR = 1.93; p = 0.013), achalasia type I or III (OR = 2.51; p = 0.001), occurrence of a severe complication during the procedure (OR = 3.00; p = 0.019). In the case-control study, the only independent risk factor for early failure was the pre-POEM ES (p < 0.001) (a higher ES was associated with a higher risk), mainly in its retrosternal pain component.

Conclusions In this large retrospective cohort, the early failure rate of POEM in primary achalasia is 9.4 %. Age ≤ 45 years, achalasia type I/III, high pre-POEM Eckardt score, and pre-POEM retrosternal pain are significant failure risk factors.

OP005 HIGH-RESOLUTION IMPEDANCE MANOMETRY METRICS OF THE EG-JUNCTION FOR PREDICTING CLINICAL RESPONSE FOLLOWING PERORAL ENDOSCOPIC MYOTOMY IN ACHALASIA

Authors Gröhl K.¹, Ebigo A.¹, Schnoy E.¹, Messmann H.¹, Nagl S.¹

Institute 1 University Hospital Augsburg, Gastroenterology, Augsburg, Germany

DOI 10.1055/s-0042-1744568

Aims Peroral endoscopic myotomy (POEM) is an effective treatment for achalasia. There is still controversy, which method is the best to predict clinical

response following POEM. We aimed to evaluate changes at esophagogastric junction pressure (EGJP) and integrated relaxation pressure (IRP4) in high resolution manometry (HRM) in patients with achalasia before and after POEM as indicators for treatment response.

Methods We retrospectively evaluated 135 patients (mean age: 54.3 (± 18.2) years) with achalasia during 3-months follow up after POEM with Eckardt score (ES) and HRM. Clinical response was defined as ES ≤ 3. Receiver-operating characteristic (ROC) curves for good symptomatic outcome (ES ≤ 3) were generated for each potential predictor of treatment response (ΔEGJP, ΔIRP4, %ΔEGJP, %ΔIRP4).

Results 87 % of patients showed a good symptomatic outcome after POEM. Mean EGJP and IRP4 values reduced significantly after POEM (33.2 (± 16.2) mmHg vs. 15.3 (± 10.9) mmHg, P < 0.001 and 20.3 (± 10.5) mmHg vs. 8.4 (± 8.2) mmHg, P < 0.001, respectively). The area-under-the-curves (AUCs) on the ROC curve for symptomatic outcome were 0.54 (ΔEGJP), 0.54 (ΔIRP4), 0.72 (%ΔEGJP) and 0.52 (%ΔIRP4). Optimal cut-points were determined as -2.5 mmHg (ΔEGJP), -15.1 mmHg (ΔIRP4), 0.47 mmHg (%ΔEGJP) and 0.19 mmHg (%ΔIRP4) that provided sensitivities/specificities of 43 %/7 % (ΔEGJP), 71 %/50 % (ΔIRP4), 71 %/26 % (%ΔEGJP) and 86 %/67 % (%ΔIRP4) to predict symptomatic outcome. The most predictive HRM measurement for clinical response after POEM is %ΔEGJP.

Conclusions HRM measurements can predict clinical response after POEM with a moderate predictive ability. %ΔEGJP is the most predictive clinical measure in HRM.

OP006V ENDOSCOPIC TREATMENT METHOD FOR SYMPTOMATIC THORACIC ESOPHAGEAL DIVERTICULUM

Authors Aslan F.¹, Ak A.B.¹, Darcin K.²

Institutes 1 Koc University Hospital, Gastroenterology, Istanbul, Turkey; 2 Koc University Hospital, Anesthesiology and Reanimation, Istanbul, Turkey
DOI 10.1055/s-0042-1744569

A 71-year-old male patient presented to clinic with dysphagia and persistent cough. On his past medical history there were congestive heart failure (EF %29) and the pacemaker placement which required him to take antiaggregant-treatment. On esophagography imaging, a 6cm in diameter diverticulum in thoracic-esophagus was detected. On CT imaging, there was no pathology other than esophageal diverticulum was observed. Under general anesthesia, the patient was treated with endoscopic septomyotomy and POEM at distal to the diverticulum until the distal end of the gastroesophageal junction using the tunnel technique. Afterwards, the tunnel entrance was closed with clips. Patient was discharged on postoperative day 2.

Old and new ones: finding the appropriate approach to small bowel diseases
Thursday, 28 April 2022

09:30–10:30

Club E

OP007V MID GUT EXPLORATION: CAN CAPSULE ENDOSCOPY ALWAYS DETERMINE THE INSERTION ROUTE OF DEVICE-ASSISTED ENTEROSCOPY?

Authors Fernandez M., Viesca Y.¹, Verset L.², Rocq L.³, Demetter P.², Arvanitakis M.¹

Institutes ULB/Hôpital Erasme, Gastroenterology, Brussels, Belgium; ULB/Institut Jules Bordet, Pathology, Brussels, Belgium; ULB/Hôpital Erasme, Pathology, Brussels, Belgium

DOI 10.1055/s-0042-1744570

Small bowel capsule endoscopy (SBCE) is a well-known non-invasive technique that has revolutionized the exploration of the midgut as device-assisted enteroscopy (DAE) development. Both procedures are complementary and SBCE can be considered a previous guide before a deep enteroscopy procedure that

requires expertise, time and general anesthesia. Which route of insertion (anterograde or retrograde) should be chosen, isn't simple. Few studies have tried to identify a time index based on SBCE landmarks to help the decision of the route insertion. We illustrated two video cases where those formulas could not determine the correct approach before motorized spiral enteroscopy.

OP008 BALLOON-ASSISTED ENTEROSCOPY AND MOTORIZED SPIRAL ENTEROSCOPY: COMPETITIVE OR COMPLEMENTARY TECHNIQUES ?

Authors Moreels T.¹, Monino L.¹, Deprez P.¹, Piessevaux H.¹

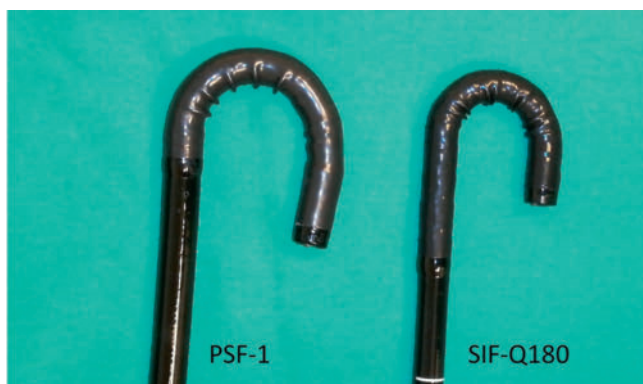
Institute 1 Cliniques universitaires Saint-Luc, Gastroenterology & Hepatology, Brussels, Belgium

DOI 10.1055/s-0042-1744571

Aims To compare technical efficacy (insertion depth), of motorized spiral enteroscopy (MSE) and single-balloon enteroscopy (SBE) consecutively performed in the same patients cohort.

Methods Patients who underwent enteroscopy using both SBE and MSE were analysed for insertion depth, as identified by fluoroscopy. MSE was performed with PSF-1, SBE with SIF-Q180 or XSIF-180JY.

Results In 2020-2021, 29 patients underwent both SBE and MSE. Male/female ratio was 12/17 with mean age 61 ± 3 years (range 18-89). Antegrade enteroscopy was performed in 69%, retrograde enteroscopy in 10%, endoscopy of the excluded stomach after Roux-en-Y gastric bypass in 10% and ERCP after Roux-en-Y liver transplantation in 10%. Based on insertion depth, MSE was more efficient in 12/29 patients (41%), SBE in 31% and in 8 patients (28%) they were equally effective ($p = 0.35$, Chi-square). Enteroscopy route and surgical reconstruction were not correlated with technical success of either enteroscope. However, MSE tended to fail in patients with angulated intestinal limbs, irrespective of abdominal surgery.



► Fig. 1

Conclusions Comparison of insertion depth revealed that MSE was superior to SBE in 41%, equal to SBE in 28% and inferior to SBE in 31% in patients who underwent repeat enteroscopy using both techniques. MSE allowed deeper and complete enteroscopy, also in surgically altered anatomy, but failed in case of angulated intestinal limbs. This can be explained by difference in endoscope design, as the MSE tip is similar to a colonoscope (diameter and angulation) whereas the SBE tip is similar to a gastroscope. MSE and SBE are complementary rather than competitive enteroscopy techniques.

OP009 AUTOMATIC DETECTION AND CLASSIFICATION OF PLEOMORPHIC SMALL BOWEL LESIONS WITH DIFFERENT BLEEDING POTENTIAL USING A CONVOLUTIONAL NEURAL NETWORK: A MULTICENTRIC STUDY

Authors Mascarenhas M.¹, Afonso J.¹, Ribeiro T.¹, Ferreira J.², Andrade P.¹, Mascarenhas Saraiva M.³, Cardoso H.¹, Macedo G.¹

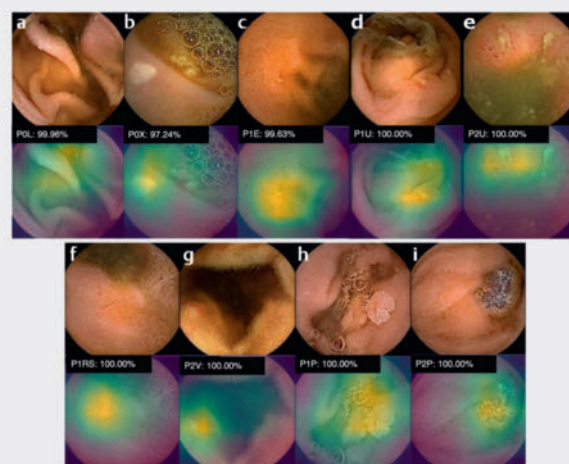
Institutes 1 Centro Hospitalar São João, Porto, Portugal; 2 Faculty of Engineering of the University of Porto, Porto, Portugal; 3 Manoph Gastroenterology Clinic, Porto, Portugal

DOI 10.1055/s-0042-1744572

Aims Capsule endoscopy enables the detection of enteric pleomorphic lesions with different bleeding potentials. However, reading CE exams is a time-consuming and monotonous task prone to errors. Convolutional neural networks (CNNs) are highly efficient artificial intelligence tools for image analysis. Our group developed a CNN-based model for detecting and differentiating pleomorphic small bowel lesions with distinct hemorrhagic potential using CE images.

Methods Our group developed, trained, and validated a denary CNN based on CE images. Each frame was labeled according to the type of lesion (lymphangiectasia, xanthomas, ulcers, erosions, vascular lesions, protruding lesions, and blood) by three experts in CE. Saurin's classification assessed the hemorrhagic potential: P0 – lesions without bleeding potential; P1 – lesions with uncertain bleeding potential; P2 – lesions with high bleeding potential; P3 – luminal blood. 55380 frames of the enteric mucosa were obtained from 2565 CE exams from two different centers (1483 from São João University Hospital and 1082 from Manoph Gastroenterology Clinic). 90% of the frames were used to create the training dataset, and 10% used to test the network. The patients included in the training dataset were excluded from the testing dataset.

Results The model had an overall accuracy of 98.3%, a sensitivity of 89.6%, and a specificity of 98.9%.



► Fig. 1

Conclusions The authors developed a CNN for the automatic identification and classification of pleomorphic lesions in CE videos and tested it in AI naïve patients. This represents an evolution in the technology readiness level into a real-life clinical setting that may significantly improve the diagnostic yield of CE exams.

OP010 THE OTHER SIDE OF THE MOON: ROLE OF CAPSULE AND DOUBLE BALLOON ENTEROSCOPY IN PATIENTS WITH INDICATION OTHER THAN SUSPECTED SMALL BOWEL BLEEDING

Authors Scaramella L.¹, Topa M.^{1,2}, Penagini R.^{1,2}, Vecchi M.^{1,2},

Tontini G.E.^{1,2}, Pennazio M.³, Sidhu R.⁴, Sanders D.S.⁴, Elli L.^{1,2}

Institutes 1 Fondazione IRCCS Ca' Granda Ospedale Maggiore Policlinico, Milan, Italy; 2 Università degli Studi di Milano, Milan, Italy; 3 AOU Città Della Salute e Della Scienza, Università di Torino, Turin, Italy; 4 Royal Hallamshire Hospital, Sheffield, United Kingdom

DOI 10.1055/s-0042-1744573

Aims The use of videocapsule and double balloon enteroscopy (VCE, DBE), in patients with indications other than suspected small bowel bleeding (nSSBB) is largely unknown. Our aim was to assess their role in patients with nSSBB.

Methods We retrospectively evaluated consecutive patients who underwent VCE and/or DBE from March 2001 to January 2019, considering the ones with nSSBB as indication. Demographic and clinical parameters, technical characteristics of the procedures and adverse events were collected. Effectiveness in terms of diagnostic yield (DY), concordance between the two investigations and safety of the procedures were evaluated.

Results 1168 VCEs and 607 DBEs were collected (1366 subjects), 45 % VCE and 47 % DBE were performed for nSSBB (615 patients). Main indications were suspected/known Crohn's disease, complicated celiac disease, persistent enteric symptoms, and suspected neoplasms. There were no technical differences between VCE and DBE performed for nSSBB vs SSBB. DYs were 64 % vs 58 % ($p < .05$) and 52 % vs 69 % ($p < .05$) for VCE and DBE, nSSBB vs SSBB. The lowest DY (35 %) was in DBE performed for suspected neoplasms. The rate of adverse events was 0 % in VCE and 0.7 % in DBE without differences between indication. Agreement was generally sub-optimal ($k = 0.13$), being higher in celiac and Crohn's diseases ($K = 0.7$ and 0.6), and lower in suspected neoplasms and in persistent enteric symptoms ($k = 0.07$ and 0.25).

Conclusions This study describes the largest series of patients undergoing enteroscopy for indications other than bleeding, demonstrating its efficacy also in case of "atypical" indications with a high safety profile.

OP011 IS CAPSULE ENDOSCOPY SMALL BOWEL ANGIODYSPLASIA ACTIVITY INDEX (CESBAI) CAPABLE OF PREDICTING REBLEEDING AND NEED FOR ENDOSCOPIC TREATMENT IN PATIENTS WITH SUSPECTED SMALL BOWEL BLEEDING?

Authors Lima Capela T.^{1,2}, Macedo Silva V.^{1,2}, Freitas M.^{1,2}, Arieira C.^{1,2},

Xavier S.^{1,2}, Cúrdia Gonçalves T.^{1,2}, Boal Carvalho P.^{1,2}, Rosa B.^{1,2},

João Moreira M.^{1,2}, Cotter J.^{1,2}

Institutes 1 Hospital da Senhora da Oliveira, Gastroenterology Department, Guimarães, Portugal; 2 School of Medicine, University of Minho, Life and Health Sciences Research Institute (ICVS), Braga/Guimarães, Portugal

DOI 10.1055/s-0042-1744574

Aims The Capsule Endoscopy Small Bowel Angiodysplasia Activity Index (CESBAI) is a recently created score for small bowel angiodysplasias (SBAD) evaluation in patients with suspected small bowel bleeding (SBB), including 3 variables: extension, number and bleeding probability of SBAD. Although having a low interobserver variability, it is still unknown if it could be used in the prediction of rebleeding and need for endoscopic treatment after initial capsule endoscopy (CE). We aimed to evaluate the performance of CESBAI for these outcomes.

Methods Retrospective cohort-study including complete CE for SSB with a SBAD diagnosis, from May2008-October2020. The minimum follow-up was 12 months. CE with any other vascular and nonvascular lesions that could be a source of bleeding were excluded. Rebleeding was defined as an overt bleeding event (melena or hematochezia) or a decrease of $\geq 2\text{g/dL}$ in hemoglobin

level. The score was calculated and its accuracy for the prediction of rebleeding and need for endoscopic treatment was assessed through a receiver operating characteristic curve.

Results Data from 125 patients was included. Rebleeding occurred in 48 (38.4 %) patients and 35 (28.0 %) patients were submitted to endoscopic treatment during a mean follow-up of 55 ± 36 months. Most frequent CESBAI score was 6 (40,2 %) and 9 (31,1 %). The score showed a fair and acceptable accuracy predicting rebleeding (C-statistic 0.650; 95 %CI [0.550-0.750]; $p < 0.05$) and endoscopic treatment (C-statistic 0.720; 95 %CI [0.619-0.820]; $p < 0.001$), respectively.

Conclusions Even though its performance was not outstanding, application of the CESBAI in patients with SSB from SBAD can be considered in order to predict rebleeding risk and endoscopic treatment.

OP012 ARTIFICIAL INTELLIGENCE TO QUANTIFY VILLOUS ATROPHY DURING CAPSULE ENTEROSCOPY

Authors Elli L.¹, Ciulla M.M.², Scaramella L.¹, Nandi N.¹, Rimondi A.¹,

Maregatti M.¹, Tontini G.E.¹, Cavallaro F.¹, Penagini R.¹, Vecchi M.¹

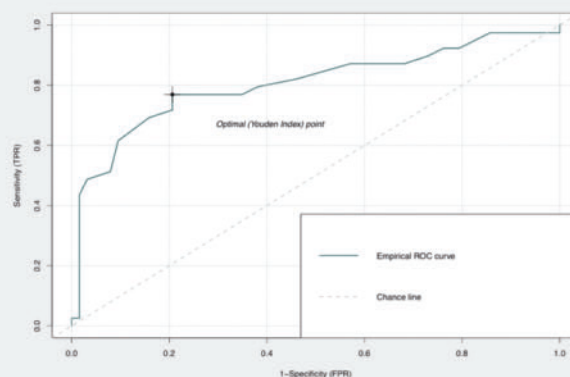
Institutes 1 Foundation IRCCS Ca' Granda Ospedale Maggiore Policlinico, Division of Gastroenterology and Endoscopy, Milan, Italy; 2 Università degli Studi di Milano, Laboratory of Clinical Informatics and Cardiovascular Imaging; Department of Clinical Sciences and Community Health, Milan, Italy

DOI 10.1055/s-0042-1744575

Aims To develop an image processing algorithm based on capsule enteroscopy (CE) CapsoCam (CapsoVision, Cupertino, CA, USA) lateral panoramic view to quantify villous atrophy.

Methods Frames from CapsoCam CEs were retrospectively obtained from celiac disease (CeD) patients and Controls (Co) referring to our Gastroenterology department from 2018 to 2020. Histology was assumed as reference standard in case of atrophy or not. Three 1 mm regions of interest (ROI) per frame were selected blindly by an expert gastroenterologist (LE) and then analysed for morphometric analysis using NIH Image J image-processing software and transformed in a numerical scale. Each ROI was then studied by using 3D a surface plot macro and isolines plots were obtained to identify the density of intestinal villi. All readers were blind to the histologic results.

Results A total of 306 ROI were acquired from 57 CE from CeD patients and 45 from Co. On a numerical scale, atrophic vs non-atrophic mucosa were represented by 7.03 ± 1.54 vs 15.99 ± 1.42 . A sensitivity of 77 % and a specificity of 79 % in discriminating between atrophic (Marsh-Oberhuber $> 3a$) or non-atrophic (Marsh-Oberhuber < 2) mucosa with a cut-off of 14.10 (Youden Index) and an overall AUC of 0.805 (CI 95 % 0.712-0.897) were obtained (Fig. 1).



► Fig. 1 ROC Curve of villous atrophy analysis

Conclusions Our process is able to discriminate the presence of villous atrophy in a definite set of patients. Further studies are needed to establish its validity in an external cohort.

Diagnostic and therapeutic EUS in

pancreatic disease

Thursday, 28 April 2022

09:30–10:30

Club H

OP013 ENDOSCOPIC ULTRASOUND-GUIDED DRAINAGE USING LAMS OF MALIGNANT AFFERENT LIMB SYNDROME IN PATIENTS WITH PREVIOUS WHIPPLE SURGERY: A MULTICENTER STUDY

Authors Perez-Cuadrado-Robles E.¹, Bronswijk M.², Prat F.³, Barthet M.⁴, Palazzo M.⁵, Arcidiacono P.⁶, Schaefer M.⁷, Devière J.⁸, van Wanrooij R.L.J.⁹, Tarantino I.¹⁰, Donatelli G.¹¹, Camus M.¹², Sanchez-Yague A.¹³, Do-Cong Pham K.¹⁴, Gonzalez J.-M.⁴, Anderloni A.¹⁵, Vila J.J.¹⁶, Jezequel J.¹⁷, Larghi A.¹⁸, Jaïs B.¹⁹, Vazquez-Sequeiros E.²⁰, Deprez P.H.²¹, Van der Merwe S.², Cellier C.¹, Rahmi G.¹

Institutes 1 Georges-Pompidou European Hospital, Department of Gastroenterology, Paris, France; 2 University Hospitals Gasthuisberg, Department of Gastroenterology and Hepatology, Leuven, Belgium; 3 Beaujon Hospital, Department of Endoscopy, Clichy, France; 4 Hôpital Nord, Department of Gastroenterology and Endoscopy, Marseille, France; 5 Beaujon Hospital, Department of Endoscopy, Paris, France; 6 San Raffaele Scientific Institute IRCCS, Division of Pancreato-Biliary Endoscopy and Endosonography, Milan, Italy; 7 Regional University Hospital of Nancy, Department of Endoscopy and Hepatogastroenterology, Nancy, France; 8 Erasme University Hospital, Department of Gastroenterology, Brussels, Belgium; 9 Vrije Universiteit Amsterdam, Department of Gastroenterology and Hepatology, Amsterdam, Netherlands; 10 Mediterranean Institute for Transplantation and Advanced Specialized Therapies, Endoscopy Service, Palermo, Italy; 11 Private Hospital Peupliers-Ramsay Santé, Paris, France; 12 Saint Antoine Hospital, Endoscopic Unit, Paris, France; 13 Hospital Costa del Sol, Endoscopy Unit, Marbella, Spain; 14 Haukeland University Hospital, Department of Medicine, Bergen, Norway; 15 Humanitas Clinical and Research Center – IRCCS, Digestive Endoscopy Unit, Milan, Italy; 16 Hospital Universitario de Navarra, Endoscopy Unit, Navarra, Spain; 17 University Hospital of Brest, Department of Gastroenterology, Brest, France; 18 Fondazione Policlinico Universitario A. Gemelli IRCCS, Digestive Endoscopy Unit, Rome, Italy; 19 Hôpital Beaujon, Department of Endoscopy, Clichy, France; 20 Hospital Universitario Ramón y Cajal, Department of Gastroenterology and Hepatology, Madrid, Spain; 21 Cliniques universitaires Saint-Luc, Department of Gastroenterology, Brussels, Belgium

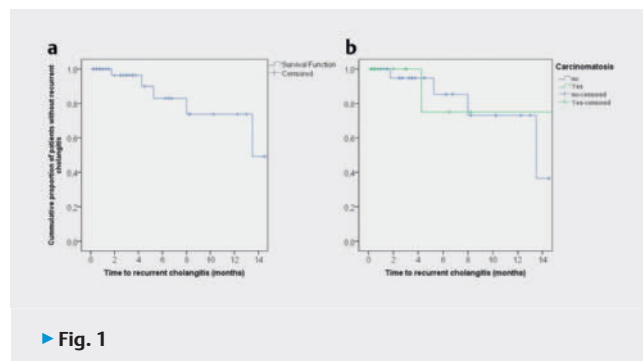
DOI 10.1055/s-0042-1744576

Aims Endoscopic ultrasound-guided digestive anastomosis (EUS-A) is a new alternative under evaluation in patients presenting with afferent limb syndrome (ALS) after Whipple surgery. The aim of the present study is to analyze the safety and effectiveness of EUS-A in ALS.

Methods This is an observational multicenter study with 20 participating centers. All patients ≥ 18 years-old with previous Whipple surgery presenting with ALS who underwent an EUS-A using a lumen apposing metal stent between 2015 and 2021 were included. The primary outcome was clinical success, defined as resolution of the ALS or ALS-related cholangitis. Furthermore, technical success, adverse event rate and mortality were evaluated.

Results Forty-five patients (mean age: 65.5 ± 10.2 years, 44.4% male) were included. The most common underlying disease was pancreatic cancer (68.9%). EUS-A was performed at a median of 6 weeks after local tumor recurrence. The most common approach used was the direct/freehand technique (66.7%). Technical and clinical success were achieved in 95.6%, with no differences

between large (≥ 15 mm) and small LAMS (97.4% vs. 100%, $p = 0.664$). Clinical success was retained in 91.1% of patients. A complementary treatment by dilation of the stent followed by ERCP through the LAMS was performed in three cases (6.7%). There were six recurrent episodes of cholangitis (14.6%) and two procedure-related adverse events (4.4%) after a median follow-up of 4 months. Twenty-six patients (57.8%) died during the follow-up due to disease progression.



► Fig. 1

Conclusions EUS-A is a safe and effective technique in the treatment of malignant ALS, achieving high clinical success with an acceptable recurrence rate.

OP014 REPEATED EUS-GUIDED FINE NEEDLE BIOPSY AFTER NON-DIAGNOSTIC OR INCONCLUSIVE RESULTS OF SOLID PANCREATIC MASSES – THE REUBIO STUDY

Authors Cominardi A.¹, Lisotti A.¹, Crinò S.F.², Larghi A.³, Facciorusso A.⁴, Fabbri C.⁵, Bertani H.⁶, De Angelis C.⁷, Di Matteo F.M.⁸, Pisani A.⁹, Brancaccio M.L.¹⁰, Dabizzi E.¹¹, Grillo A.¹², Fantin A.¹³, Pezzoli A.¹⁴, Decembrino F.¹⁵, Amato A.¹⁶, Togliani T.¹⁷, Antonini F.¹⁸, Montale A.¹⁹, Forti E.²⁰, Cennamo V.¹¹, Manno M.²¹, Carrara S.²², Arcidiacono P.G.²³, Mangiavillano B.²⁴, Binda C.⁵, Aragona G.²⁵, Mussetto A.¹⁰, Conti Bellocchi M.C.², Stigliano S.⁸, Gasparini E.², Rizzatti G.³, Pellegrino M.G.³, Muscatiello N.⁴, Marocchi G.⁵, Mangiafico S.⁶, Lupo M.⁶, Burattini O.⁹, Lovero R.⁹, Fabbri S.¹⁰, Dall'Amico E.⁷, D'Errico F.¹⁵, Gabbani T.²¹, Zagari R.M.²⁶, Fusaroli P.¹

Institutes 1 University of Bologna, Gastroenterology Unit, Hospital of Imola, Imola, Italy; 2 University of Verona, Verona, Italy; 3 Fondazione Policlinico Universitario A. Gemelli, IRCCS, Roma, Italy; 4 University of Foggia, Foggia, Italy; 5 Forlì-Cesena Hospitals, AUSL Romagna, Forlì, Italy; 6 University of Modena, Modena, Italy; 7 Città della Salute e della Scienza di Torino, Torino, Italy; 8 Campus Biomedico, Roma, Italy; 9 National Institute of Research "Saverio De Bellis", Castellana Grotte, Italy; 10 Ravenna Hospital, AUSL Romagna, Ravenna, Italy; 11 Maggiore Hospital of Bologna, Bologna, Italy; 12 Hospital of Rimini, AUSL Romagna, Rimini, Italy; 13 Veneto Institute of Oncology IOV-IRCCS, Padova, Italy; 14 Hospital of Ferrara, Ferrara, Italy; 15 Miulli Hospital, Acquaviva delle Fonti, Italy; 16 Valduce Hospital, Como, Italy; 17 Hospital of Mantova, Mantova, Italy; 18 Hospital of Fermo, Fermo, Italy; 19 Galliera Hospital of Genova, Genova, Italy; 20 Niguarda Hospital, Milano, Italy; 21 Hospital of Carpi, AUSL Modena, Carpi, Italy; 22 Humanitas Research Hospital, Milano, Italy; 23 San Raffaele Hospital, Milano, Italy; 24 Humanital Mater Domini, Castellanza, Italy; 25 Hospital of Piacenza, Piacenza, Italy; 26 University of Bologna, Bologna, Italy

DOI 10.1055/s-0042-1744577

Aims To evaluate the diagnostic yield of repeated EUS-FNB (rEUS-FNB) of pancreatic masses after previous non-diagnostic or inconclusive EUS-tissue acquisition (EUS-TA).

Methods A retrospective study retrieving consecutive patients who underwent rEUS-FNB for pancreatic masses at 26 Italian hospitals from July 2017 to July 2021 was conducted. Results are expressed in terms of odd ratio and 95% confidence intervals.

Results Three-hundred-42 patients were included (55.6% male, median age 69.5 [60-76]); in 277 (81%) cases a 2nd-generation EUS-FNB needle (fork-tip, Franseen-type or forward-bevel) was used, median 3 [2-3] passes. ROSE was available in 63 (18.4%) cases. Final diagnosis revealed malignancy in 255 (74.6%) cases.

Repeated-EUS-FNB adequacy, sensitivity, specificity and accuracy were 91.1%, 91.2%, 91.1% and 90.5%, respectively. Positive and negative predictive values were 97.5% and 72.9%.

On univariate analysis, rEUS-FNB performed in high-volume centers (OR 2.79 [1.10-7.10]) was related to sample adequacy while ROSE was not. On multivariate, the use of 2nd-generation EUS-FNB needles was the only variable independently related to sample adequacy (OR 4.40, 95% CI 0.10-1.40).

On univariate analysis, previous EUS-FNB was inversely related to accuracy (OR 0.38 [0.15-0.91]), while use of 2nd-generation EUS-FNB needles (OR 2.54 [1.25-5.18]) was directly correlated; on multivariate analysis, the use of fork-tip needle (OR 11.57 [1.54-87.10]) and number of needle passes < 3 (OR 0.50 [0.25-0.99]) were independently related to rEUS-FNB accuracy.

Conclusions Repeated-EUS-FNB showed optimal adequacy and accuracy after previous non-diagnostic or inconclusive EUS-TA of pancreatic masses.

Our data suggested that use of 2nd-generation EUS-FNB needles, > 2 needle passes and patients referral to high-volume center may further increase sample adequacy and diagnostic accuracy.

OP015V EDGE PROCEDURE: ESOPHAGEAL STENT TO THE RESCUE

Authors Ferreira-Silva J.¹, Pereira P.¹, Vilas-Boas F.¹, Rodrigues-Pinto E.¹, Macedo G.¹

Institute 1 Centro Hospitalar Universitário de São João, Gastroenterology, Porto, Portugal

DOI 10.1055/s-0042-1744578

We present the case of a patient with a history of Roux-en-Y gastric bypass surgery submitted to endoscopic ultrasound-directed transGastric ERCP due to common bile duct stricture in the context of pancreatic adenocarcinoma. ERCP was complicated with difficult duodenoscope passage into the gastric remnant due to LAMS position and loop formation. In this case, duodenoscope passage to gastric remnant was only possible after esophageal stent deployment in a trans-LAMS position. This is a safe and effective solution to a technical problem that could otherwise derail the procedure's success.

OP016 MANAGEMENT OF NONFUNCTIONAL PANCREATIC NEUROENDOCRINE TUMORS BY ENDOSCOPIC ULTRASOUND-GUIDED RADIOFREQUENCY ABLATION: A RETROSPECTIVE STUDY IN TWO TERTIARY CENTERS

Authors Marx M.¹, Godat S.¹, Caillol F.², Poizat F.³, Ratone J.-P.², Pesenti C.², Schoepfer A.¹, Hoibian S.², Dahel Y.², Giovannini M.²

Institutes 1 Centre hospitalier universitaire vaudois, Gastroenterology, Lausanne, Switzerland; 2 Paoli-Calmettes Institute, Gastroenterology, Marseille, France; 3 Paoli-Calmettes Institute, Pathology, Marseille, France

DOI 10.1055/s-0042-1744579

Aims Recently, there has been growing interest in investigating endoscopic ultrasound-guided radiofrequency ablation (EUS-RFA) for the management of small nonfunctional pancreatic neuroendocrine tumors (nf pNETs). This study presents a preliminary clinical experience, focusing on procedure-related complications.

Methods A bicentric retrospective study was performed that included patients with histologically confirmed nf pNETs ≤ 2 cm who were consecutively treated

by EUS-RFA between December 2015 and March 2021 at two tertiary referral centers. Patients with grade 3 lesions, locally advanced or metastatic disease were excluded.

Results In 27 patients (mean age 65.0 years, 52% male), EUS-RFA was successfully performed. All patients had sporadic grade 1 lesions (mean size 14.0 ± 4.6 mm, 7% uncinated process, 22% head, 11% body, 19% body/tail junction, and 41% tail). Overall, 9/27 lesions (33%) were cystic. The mean hospital stay was 3.2 days. Complete treatment response was confirmed in 25/27 patients (93%) on cross-sectional imaging (mean follow-up 15.7 ± 12.2 months, range 2-41 months). Two patients had two EUS-RFA sessions until complete necrosis was observed. Periprocedural acute pancreatitis occurred in 4/27 (14.8%), three of them were treated by endoscopic cystogastrostomy (11.1%). One patient underwent secondary surgery. The histopathology of the resected specimen revealed 3 mm of residual tumor tissue.

Conclusions EUS-RFA seems to be a promising treatment strategy for the management of small nf pNETs with excellent efficacy. Further evidence focusing on long-term survival, safety profile and recurrence is needed.

OP017 IMPACT OF ANTIBIOTIC PROPHYLAXIS ON INFECTION RATE AFTER ENDOSCOPIC ULTRASOUND THROUGH-THE-NEEDLE BIOPSY OF PANCREATIC-CYSTS: A PROPENSITY SCORE MATCHED STUDY

Authors Facciorusso A.^{1,2}, Arevalo-Mora M.³, Conti Bellocchi M.C.², Bernardoni L.², Ramai D.⁴, Gkolfakis P.⁵, Loizzi D.¹, Muscatiello N.¹, Ambrosi A.¹, Tartaglia N.¹, Robles-Medrand C.³, Crinò S.F.²

Institutes 1 University of Foggia, Gastroenterology Unit, Department of Surgical and Medical Sciences, Foggia, Italy; 2 The Pancreas Institute, University Hospital of Verona, Department of Medicine, Gastroenterology and Digestive Endoscopy Unit, Verona, Italy; 3 Instituto Ecuatoriano de Enfermedades Digestivas, Guayaquil, Ecuador; 4 University of Utah Health, Salt Lake City, United States; 5 Erasme University Hospital, Department of Gastroenterology, Hepatopancreatology and Digestive Oncology, Brussels, Belgium

DOI 10.1055/s-0042-1744580

Aims Despite the weak evidence, antibiotic prophylaxis prior to endoscopic ultrasound-guided through-the-needle biopsy (EUS-TTNB) of pancreatic cystic lesions (PCLs) is routinely used in the clinical practice. We aim to compare a group of patients treated with antibiotics before EUS-TTNB of PCLs and a group who did not undergo antimicrobial prophylaxis.

Methods Out of 136 patients with pancreatic cystic lesions referred to two high-volume centers between 2016 and 2021, after propensity score matching two groups were compared: 38 subjects who underwent EUS-TTNB under antibiotic prophylaxis and 19 subjects without prophylaxis.

Results There was no difference in terms of baseline parameters between groups. Final diagnosis was serous cystadenoma in 37.1% of patients in the group not treated with prophylaxis and in 49.8% of patients in the control group, whereas IPMN and mucinous cystadenoma were diagnosed in 1 (5.1%) and 6 (32%) versus 1 (2.6%) and 14 (37.2%) patients in the two groups, respectively (p = 0.46). Only one case of peri-pancreatic fluid collection treated with EUS-guided drainage was observed in the group not treated with antibiotic prophylaxis (5.2%) whereas a single case (2.6%) of mild abdominal pain managed conservatively was detected in the control group (p = 0.61). Diagnostic yield and accuracy rates were 89.4% and 78.9% in both groups, respectively (p = 0.9 and 0.85).

Conclusions Prophylactic antibiotics do not seem to influence the risk of infection and their routine use should be discouraged

OP018 PREDICTION OF MALIGNANCY WITH RGB PROFILING OF PANCREATIC MASS- ELASTOGRAPHIES AND CONTRAST-ENHANCED IMAGES BY ENDOSCOPIC ULTRASOUND

Authors Razpotnik M.¹, Bota S.¹, Urak C.¹, Essler G.¹, Weber-Eibel J.¹, Peck-Radosavljevic M.¹

Institute 1 Department of Internal Medicine and Gastroenterology (IMuG), Hepatology, Endocrinology, Rheumatology and Nephrology and Emergency Medicine (ZAE) with Centralized Endoscopy Service, Klinikum Klagenfurt am Wörthersee, Klagenfurt am Wörthersee, Austria

DOI 10.1055/s-0042-1744581

Aims Combining elastography and contrast-enhanced endoscopic ultrasound (CE-EUS) is useful in the semi-quantitative evaluation of pancreatic tumors. We aimed to quantify the CE images and elastographies obtained by EUS to develop a prediction model for malignancy of solid pancreatic lesions.

Methods Quantitative analysis of elastographies and CE images was performed by RGB (red-green-blue) profiling using Java-based processing software (ImageJ, NIH). The exact amount of red (soft-), green (intermediate-), blue (hard-tissue), and enhanced areas (viable tumor) at peak enhancement, was measured and expressed in pixels. The intensity ratio for each color was defined as a relation between the absolute value for this color and the intensity of the sum of all three colors (R,G, and B Int.-Ratio). The proportion between enhanced (HyperE) and non-enhanced (HypoE) areas was calculated (HH-Ratio). The final diagnosis was established either by histopathology or radiological findings combined with tumor markers and clinical follow-up.

Results Between 01/2014-08/2021, we identified 88 solid pancreatic tumors examined by elastography and CE-EUS during the same procedure: 63.6% adenocarcinomas, 8% metastasis, 3.4% neuroendocrine tumors, 4.5% other malignant tumors, 18 (20.5%) benign masses. For parameters with the best performance to differentiate between malignant and benign pancreatic tumors, areas under the receiver-operating characteristic curves with the best cut-off values were calculated (Table 1). The accuracy of these criteria to predict malignancy was: 3 to 5 criteria (n = 32)-96.9%, 1 or 2 criteria (n = 37)-75.7%, 0 criteria (n = 19)-50%.

Conclusions Quantitative analysis of elastographies and contrast-enhanced images of pancreatic tumors obtained in EUS has the potential to predict malignancy with high accuracy.

► Table 1

Variable	Correlation (p)	Criterion (AUC; 95% CI)	Sensitivity (%)	Specificity (%)
B Int.-Ratio	r = 0,361 (0,0007)	> 230 (0,750; 0,645-0,838)	56,2	89,5
B/G Int.-Ratio	r = 0,340 (0,001)	> 1,9 (0,735; 0,628-0,825)	62,1	79,0
G Int.-Ratio	r = -0,307 (0,004)	< 97,4 (0,713; 0,605-0,806)	34,9	100
HyperE	r = -0,317 (0,003)	< 11,9 (0,693; 0,583-0,788)	60,7	75,9
HH-Ratio	r = -0,334 (0,001)	< 16,4 (0,703; 0,594-0,797)	55,4	86,2

Endoscopic treatment for gastric and duodenal tumors
Thursday, 28 April 2022

11:00–12:00
Club A

OP019V D-LECS: LAPAROSCOPIC AND ENDOSCOPIC COOPERATIVE SURGERY FOR TREATMENT OF A LARGE NON-AMPULLARY DUODENAL LESION

Authors de Frutos D.¹, Santiago J.¹, Lucena J.L.², Chaparro M.D.², Sánchez-Yuste M.R.³, Martín D.⁴, Botella B.⁴, Omella I.J.¹, Blanco S.¹, Herreros-de-Tejada A.¹

Institutes 1 Puerta de Hierro University Hospital, Gastroenterology and Hepatology. Endoscopy Unit, Majadahonda, Spain; 2 Puerta de Hierro University Hospital, Gastrointestinal Surgery department, Majadahonda, Spain; 3 Puerta de Hierro University Hospital, Pathology department, Majadahonda, Spain; 4 Infanta Cristina University Hospital, Gastroenterology and Hepatology, Parla, Spain

DOI 10.1055/s-0042-1744582

Case Report A 72-year-old man with a 60 mm 0-Is + IIa lesion located at the second portion of duodenum (D2) was referred for endoscopic treatment in our hospital.

The operating room was prepared with laparoscopy and endoscopy equipment. Firstly, surgeons laparoscopically release D2. Then, duodenal ESD was performed achieving en-bloc resection without severe intra-procedural complications. Finally, the mucosal-submucosal defect is identified laparoscopically and a sero-muscular reinforce suture is performed. 72 hours post-procedure a moderate episode of upper-GI bleeding was registered which was successfully managed conservatively. Histopathological analysis of the specimen revealed a 60x47 mm tubulovillous adenoma with high-grade dysplasia, R0

OP020V ENDOSCOPIC FULL-THICKNESS RESECTION OF A DUODENAL GIST WITH EXTRALUMINAL COMPONENT BY NOTES: TRACTION AND SUTURES

Authors Uchima H.¹, Garsot E.², Colán-Hernández J.¹, Viciano M.², Clavell A.², Marín I.¹, Caballero N.¹, Iborra I.¹, Puig M.¹, Calm A.¹, Fortuny M.¹, Domènech E.¹, Moreno V.¹

Institutes 1 Hospital Universitari Germans Trias i Pujol, Gastroenterology, Badalona, Spain; 2 Hospital Universitario Germans Trias i Pujol, Surgery, Badalona, Spain

DOI 10.1055/s-0042-1744583

A 68 year-old male with previous history of Billroth I reconstruction, and radical cystectomy with Bricker, presented with a 2.5cm GIST with extraluminal component confirmed histologically on the third duodenal part.

Due to difficulty for laparoscopy, an endoscopic resection was decided.

First, incision was performed to expose the pseudocapsule.

Double-clip and rubber-band traction was applied to help the full-thickness resection.

Retroperitoneal dissection was performed.

A clip-with-line traction was applied to introduce the lesion into the luminal side and finish the resection. Specimen was recovered, and endoscopic suturing was performed.

Patient was discharged without complications.

Histology showed a low-risk GIST.

OP021 OVERALL SURVIVAL RATES AFTER ENDOSCOPIC SUBMUCOSAL DISSECTION (ESD) FOR EARLY GASTRIC CANCER IN SPANISH ELDERLY PATIENTS

Authors Marín-Gabriel J.C.¹, Herreros de Tejada A.², Fernández-Esparrach G.³, Goikoetxea-Rodero U.⁴, Albéniz-Arbizu E.⁵, Nogales-Rincón Ó.⁶, del Pozo-García A.J.¹, Uchima-Koecklin H.⁷, Miranda-García P.⁸, Terán-Lantarón Á.⁹, Álvarez-Delgado A.¹⁰, Rosón-Rodríguez P.J.¹¹, de María-Pallarés P.¹², Rodríguez-de Santiago E.¹³, Díaz-Tasende J.¹, Rodríguez Sánchez-Migallón J.¹, Pérez D.¹⁴, Cortés-Pérez H.¹⁵, Guarner-Argente C.¹⁶, Huerta-Madrigal A.¹⁷, Parejo-Carbonell S.¹³, Peñas-García B.¹³, Sánchez-Yagüe A.¹⁸, Ramos-Zabala F.¹⁹, Amorós-Tenorio A.²⁰, González-Haba M.², Dolz-Abadía C.²¹, García-Romero D.²⁰, Puig I.²², Burgos-García A.¹², Rivero-Sánchez L.³

Institutes 1 “12 de Octubre” University Hospital, Gastroenterology. Endoscopy Unit, Madrid, Spain; 2 “Puerta de Hierro-Majadahonda” University Hospital, Gastroenterology. Endoscopy Unit, Majadahonda, Spain; 3 H. Clínic, ICMDM, CIBEREHD, IDIBAPS, Gastroenterology. Endoscopy Unit, Barcelona, Spain; 4 Donostia University Hospital, Gastroenterology. Endoscopy Unit, San Sebastian, Spain; 5 Complejo Hospitalario de Navarra, Navarrabiomed Biomedical Research Center, UPNA, IdiSNA, Gastroenterology. Endoscopy Unit, Pamplona, Spain; 6 “Gregorio Marañón” University Hospital, Gastroenterology. Endoscopy Unit, Madrid, Spain; 7 “Josep Trueta” University Hospital, Gastroenterology. Endoscopy Unit, Girona, Spain; 8 “La Princesa” University Hospital, Gastroenterology. Endoscopy Unit, Madrid, Spain; 9 “Marqués de Valdecilla” University Hospital, Gastroenterology. Endoscopy Unit, Santander, Spain; 10 Complejo Hospitalario de Salamanca, Gastroenterology. Endoscopy Unit, Salamanca, Spain; 11 Quirón Salud Málaga, Gastroenterology. Endoscopy Unit, Málaga, Spain; 12 “La Paz” University Hospital, Gastroenterology. Endoscopy Unit, Madrid, Spain; 13 “Ramón y Cajal” University Hospital, Gastroenterology. Endoscopy Unit, Madrid, Spain; 14 Hospital de Avilés, Gastroenterology. Endoscopy Unit, Avilés, Spain; 15 Hospital de Urduliz, Gastroenterology. Endoscopy Unit, Vizcaya, Spain; 16 Hospital Santa Creu i Sant Pau, Gastroenterology. Endoscopy Unit, Barcelona, Spain; 17 Hospital Galdakao-Usansolo, Gastroenterology. Endoscopy Unit, Galdakao, Spain; 18 “Costa del Sol” Hospital, Gastroenterology. Endoscopy Unit, Marbella, Spain; 19 HM Montepíncipe, Gastroenterology. Endoscopy Unit, Boadilla del Monte, Spain; 20 “Ntra. Sra. de la Candelaria” University Hospital, Gastroenterology. Endoscopy Unit, Santa Cruz de Tenerife, Spain; 21 “Son Llatzer” Hospital, Gastroenterology. Endoscopy Unit, Palma, Spain; 22 ALTHAIA Xarxa Assistencial Universitària, Manresa, Spain

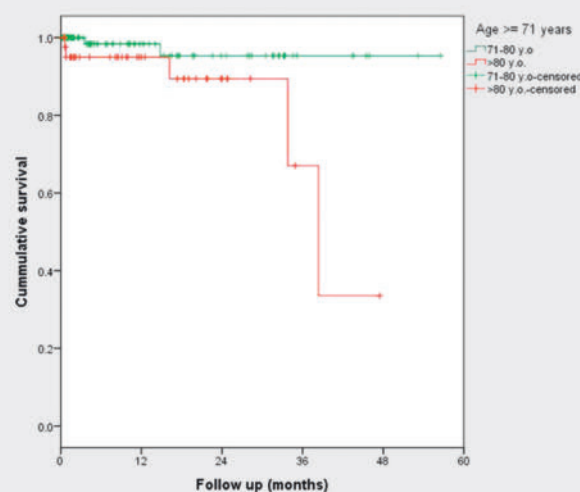
DOI 10.1055/s-0042-1744584

Aims The overall survival (OS) rates after gastric ESD have not been assessed in Western elderly populations.

Methods Prospective multicentre national registry of ESD. Clinical outcomes and OS rates after gastric ESDs performed from 2016 to 2021 were analysed. The OS rates were calculated using the Kaplan–Meier method.

Results We included 162 consecutive gastric ESDs in 154 patients: 105 in patients > 71 and < 80 years (group A: 64.8%) and 57 in those > 81 years (group B: 35.2%). Co-morbidities according to the ASA classification > III and use of anti-coagulants were increased in group B (4.8% vs 82.5%; $p < 0.0001$ and 19.6% vs 42.1%; $p < 0.0001$, respectively). No statistically significant differences were noted in intraprocedural perforations (4.8% vs 1.8%; $p = 0.3$), ICU admissions (0% vs 12.5%; $p = 0.07$), delayed perforations (0% in both groups) and deaths during the following 30 days (1% vs 3.6%; $p = 0.3$). Delayed bleeding and blood transfusion requirements were increased in group B (9.7% vs 28.6%; $p = 0.002$ and 6.7% vs 19.3%; $p = 0.015$, respectively). Follow up was recorded in 134

cases (83%). Pathological diagnosis is shown in Table 1. Seven patients died (5%) during follow up. No deaths from primary disease were observed. The 3-year OS was 95.3% in group A and 68% in group B. Patient's age was the only statistically significant risk factor associated with the 3-year OS rates (HR: 1.24; CI95%:1.04-1.48; $p = 0.02$).



► Fig. 1

► Table 1

	Group A (71-80 years) n = 105	Group B (> 81 years) n = 57	p
Vienna 3 (n; %)	33; 31.4	12; 21.1	0.19
Vienna 4 (n; %)	50; 47.6	34; 59.6	0.18
Vienna 5 (n; %)	21; 20	10; 17.5	0.83
Aborted procedures (n; %)	1; 0.95	1; 1.7	1.0

Conclusions The 3-year OS rate of patients with EGC > 81 years who received ESD was associated with diseases other than gastric tumour-related.

OP022 SELF-EXPANDABLE DUODENAL METAL STENT PLACEMENT FOR PALLIATION OF GASTRIC OUTLET OBSTRUCTION OVER THE PAST 20 YEARS IN A TERTIARY HOSPITAL IN THE NETHERLANDS

Authors Reijm A.¹, Zellenrath P.¹, van der Bogt R.¹, van Driel L.¹, Siersema P.², Bruno M.¹, Spaander M.¹

Institutes 1 Erasmus MC University Medical Centre, Department of Gastroenterology and Hepatology, Rotterdam, Netherlands; 2 Radboud University Medical Center, Department of Gastroenterology and Hepatology, Nijmegen, Netherlands

DOI 10.1055/s-0042-1744585

Aims Duodenal stent placement is a palliative option for management of gastric outlet obstruction (GOO) symptoms in cancer patients. In the last 20 years man-

agement of gastrointestinal cancers has considerably changed. It is unknown if these changes have affected clinical outcome of duodenal stent placement.

Methods Retrospective cohort study conducted in a tertiary referral center. Patients who underwent duodenal stent placement for GOO-symptoms due to a malignant stricture were included. Primary outcome was GOO-symptom free survival. Secondary outcomes included stent-related adverse event rates. Potential explanatory parameters such as period of stent placement (1998-2009 vs 2010-2019), prior treatments, peritoneal deposits, and stricture length were evaluated using multivariable Cox regression analysis.

Results Hundred-forty-seven patients (62% male; median age 64 years) were included. After a median of 28 days after stent placement, 82 patients (57%) had recurrent GOO-symptoms. GOO-symptom free survival was significantly lower in 2010-2019 ($P < 0.01$). Time period was the only independent predictor for reduced GOO-symptom free survival (HR 1.76, $P < 0.01$). Stent-related adverse event rates increased over time (1998-2009: 31% vs 2010-2019: 37%). Prior treatment with chemotherapy and/or radiotherapy was significantly associated with an increased risk of adverse events (OR 2.53, $P = 0.02$).

Conclusions Clinical outcome of duodenal stent placement did not improve over time. A decreased GOO-symptom free survival and increased adverse event rate in more recent years is probably related to the chemo- and/or radiotherapy treatment provided prior to duodenal stent placement.

OP023 IMPACT OF EUS-GUIDED BILIARY DRAINAGE AND GASTROJEJUNOSTOMY IN COMBINED MALIGNANT BILIARY AND GASTRIC OUTLET OBSTRUCTION

Authors Sanchez-Delgado L.¹, Garcia-Alonso F.J.¹, Villarroel M.¹, Cimavilla M.¹, Carbajo A.Y.¹, Busta Nistal R.², Estradas J.¹, de Benito Sanz M.¹, de la Serna-Higuera C.¹, Perez-Miranda M.¹

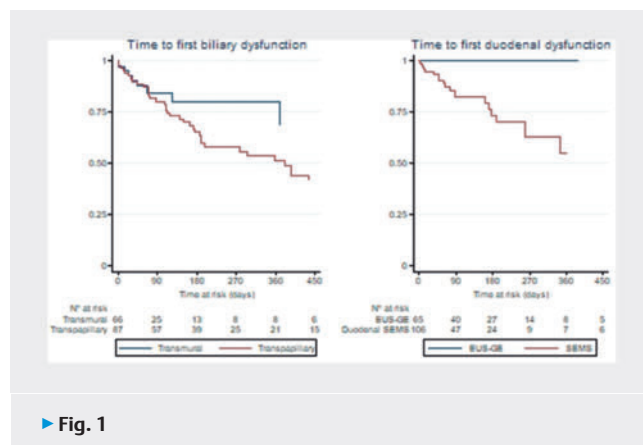
Institutes 1 Hospital Universitario Rio Hortega, Gastroenterology, Valladolid, Spain; 2 Hospital Clínico Universitario de Valladolid, Valladolid, Spain

DOI 10.1055/s-0042-1744586

Aims Combined malignant gastric outlet obstruction (GOO) and biliary obstruction remain a challenge. EUS-guided biliary transmurial drainage (EUS-BD) and gastrojejunal anastomoses (EUS-GJ) are already available alternatives. Comparatives of intraluminal and transmurial approaches are scarce.

Methods Retrospective analysis including all patients presenting malignant GOO and biliary obstruction between 2011 and 2021 at a single tertiary care center. Biliary and duodenal drainage method were categorized as transmurial (EUS-BD and EUS-GJ) vs transpapillary/intraluminal. Follow-up started at the first endoscopic procedure. Biliary stent dysfunction was defined as cholangitis and/or obstructive jaundice, duodenal dysfunction as recurrent GOO.

Results We included 168 patients, 75.2 years (IQR: 61.5-83.2), 94 males. Most frequent diagnoses were pancreatic adenocarcinoma (62.5%) and cholangiocarcinoma (9.5%). Presentation was simultaneous in 74/168. Most biliary obstructions were distal (150/168). Initial management was transpapillary in 94/168 and EUS-D in 74/168 (46 choledocoduodenostomies, 27 hepaticogastrostomies, 1 gallbladder drainage). Technical success was achieved in 73/74 EUS-Ds and in all transpapillary drainages; clinical success in 83.9% and 88.6%, respectively. Duodenal strictures were mostly Mutignani types I (48.5%) and II (46.5%), managed with SEMS in 115/168 cases and EUS-GJ in 53. Clinical success was reached in 95% of EUS-GJ and 94.6% of SEMS. Follow-up (median: 168 days (44-386)) was available in 151 patients. Figure 1 presents time to first biliary event and EUS-GJ/SEMS dysfunction. Transpapillary biliary drainage presented more biliary dysfunctions (HR: 2.3 (95% CI: 1.2-4.7), while all duodenal events presented in SEMS (log-rank test < 0.001)



► Fig. 1

Conclusions Our data suggest the transmurial approach reduces the need of further endoscopic procedures during follow-up, especially in GOO.

OP024 MULTICENTER STUDY OF COLD VERSUS HOT EMR FOR LARGE DUODENAL ADENOMAS

Authors Capogreco A.¹, Spadaccini M.¹, Maselli R.¹, Hassan C.¹, Galtieri P.A.¹, Pellegatta G.¹, Anderloni A.¹, Fugazza A.¹, Carrara S.¹, Ferrara E.C.¹, Colombo M.¹, Vespa E.¹, Pugliese N.¹, Parigi T.¹, Schachschal G.², Creutzfeldt A.², Bhandari P.³, Meining A.⁴, Rosch T.², Repici A.¹

Institutes 1 Humanitas Clinical and Research Center, Digestive Endoscopy Unit, Division of Gastroenterology, Rozzano, Italy; 2 UKE, Department of Interdisciplinary Endoscopy, Hamburg, Germany; 3 Queen Alexandra Hospital, Portsmouth, United Kingdom; 4 University of Würzburg, Würzburg, Germany

DOI 10.1055/s-0042-1744587

Aims Hot-snare resection of larger non-ampullary duodenal adenomas (NADA) (≥ 2 cm) is characterised by substantial complication rates. Cold-snare resection was shown in the colon to decrease adverse events. Accordingly, we assessed the performance of cold-EMR in the duodenum in comparison to hot-EMR.

Methods Starting at different time points in 4 European centers, consecutive patients who underwent cold-EMR for NADA ≥ 2 cm between November/2019 to June/2021 were analyzed. Cases with FAP, ampullary or circumferential adenoma. All patients underwent endoscopic follow-up with biopsies after 3-6 months from index procedure. As a control group, the threefold number of patients undergoing hot-EMR in the period before were retrospectively collected including the first follow-up endoscopy (study period 2015-2021). Main outcome was rate of adverse events (AE/serious AE = SAE) in both groups, secondary outcomes details of AE/SAE and recurrence rates.

Results 31 patients were treated by cold-EMR (mean age 63, 1 ± 10.4 years, 17 male) and 101 by hot-EMR (66, 4 ± 10.7 years, 42 male) with mean lesion size of 31.1 ± 9.9 mm and 37.7 ± 18 mm, respectively (n.s.). While technical success was not different between the groups (93.5% vs 89.1%; $p = 0.47$), procedural time was significantly lower for cold-EMR (48.8 ± 25.7 vs 96.9 ± 56 min, $p = 0.0001$). Intra- and postprocedural SAE rates were however quite different with no relevant complications occurring in the cold-EMR group. On the other hand, hot-EMR led to 17 intra-procedural (16.8%) and 27 post-procedural SAEs (25.7%). These were 4 perforations (5.9%) and 13 severe bleedings (20.8%) during hot-EMR; after the procedure 17 bleedings requiring (re)interventions, 2 delayed perforations (1 death), 3 case of fever and 4 other adverse events were reported in this group. Recurrence rate was comparable between the two groups (12.9% vs 20.8%; $p = 0.33$) during a mean follow-up time of 13 (3-70) months. All recurrences could be treated endoscopically, with further follow-up pending.

Conclusions Cold-duodenal-EMR appeared to be faster and safer than hot-EMR with comparable efficacy.

Endoscopic grading and surveillance in IBD
Thursday, 28 April 2022

1:00–12:00
Club E

OP025 COMPARISON OF ENDOSCOPIC HEALING, HISTOLOGIC HEALING AND INTESTINAL BARRIER HEALING FOR PREDICTING LONG TERM DISEASE BEHAVIOUR IN IBD PATIENTS

Authors Rath T.¹, Atreya R.¹, Bodenschatz J.¹, Uter W.², Vitali F.¹, Fischer S.¹, Waldner M.¹, Hartmann A.³, Neurath M.F.¹

Institutes 1 University Hospital Erlangen, Department of Medicine, Division of Gastroenterology, Ludwig Demling Endoscopy Center of Excellence, Erlangen, Germany; 2 Friedrich-Alexander University Erlangen-Nuremberg, Institute for Medical Informatics, Biometry and Epidemiology, Erlangen, Germany; 3 University Hospital Erlangen, Department of Pathology, Erlangen, Germany

DOI 10.1055/s-0042-1744588

Aims Endoscopic healing is a key therapeutic goal in the management of inflammatory bowel diseases (IBD) that is associated with favorable disease outcome. Here, we prospectively compared the predictive value of endoscopic healing with histologic and barrier healing for predicting long-term disease behavior in a large cohort of clinical remittent IBD patients

Methods IBD patients in clinical remission were prospectively included. At baseline, ileocolonoscopy with assessment of intestinal barrier function by confocal laser endomicroscopy (CLE) in the ileum and colon was performed. Endoscopic and histologic activity and barrier healing were scored along established scores. During subsequent follow-up (FU), patients were closely monitored for disease activity and the occurrence of major clinical events (MCE), defined as the following: disease flare, IBD-related hospitalization or surgery, initiation of systemic steroids, immunosuppressants or biologics or escalation of an existing biological therapy.

Results 181 patients (100 CD, 81 UC) were included. During a mean FU of 35 (CD) and 25 (UC) months, 73 % of CD and 69 % of UC patients experienced MCE. The probability of MCE-free survival was significantly higher in IBD patients with endoscopic remission compared to patients with endoscopically active disease. In addition, histologic remission predicted MCE-free survival in patients with UC but not in CD. Barrier healing on endomicroscopy was highly accurate for predicting the further course of IBD and outcompeted endoscopic and histologic remission for predicting MCE-free survival.

Conclusions Barrier healing is highly predictive of the further course of disease in clinically remittent IBD patients with superior diagnostic performance compared to endoscopic and histologic remission.

OP026 ENDOCYTOSCOPY-BASED IN VIVO GRADING OF INFLAMMATORY ACTIVITY IN ULCERATIVE CORRELATES WITH HISTOLOGY AND CAN PREDICT LONG-TERM DISEASE BEHAVIOUR

Authors Vitali F.¹, Morgenstern N.¹, Atreya R.¹, Waldner M.¹, Hartmann A.², Neurath M.F.¹, Rath T.¹

Institutes 1 University Hospital Erlangen, Department of Medicine, Division of Gastroenterology, Ludwig Demling Endoscopy Center of Excellence, Erlangen, Germany; 2 University Hospital Erlangen, Department of Pathology, Erlangen, Germany

DOI 10.1055/s-0042-1744589

Aims Increasing evidence suggests that not only mucosal healing, but also histologic healing could be an essential prognostic parameter in patients with inflammatory bowel diseases (IBD). Within this study, we aimed to evaluate whether endocytoscopy as a new technique enabling in vivo histology can accurately assess histologic inflammation in IBD patients and predict long-term disease outcome.

Methods 46 consecutively enrolled patients with ulcerative colitis (UC) were included. The in vivo assessment of histologic inflammation was made with a commercially available endocytoscope (Olympus CF-H290ECI, Olympus, Japan). In vivo microscopic inflammatory activity during endocytoscopy was scored by four independent endoscopists using a novel endocytoscopy score (ELECT, Erlangen Endocytoscopy for ColiTit). Targeted biopsies of the imaged areas were obtained and results were compared against two validated histopathological scores in UC (Robarts Histopathology Index, RHI; Nancy Histology Index, NHI). Moreover, interobserver agreement and performance of endocytoscopy-based grading of inflammatory activity for predicting long-term disease outcome were calculated

Results A new and intuitive endocytoscopy score was developed as a consensus between experts in optical diagnosis in IBD patients. During subsequent validation, endocytoscopic grading of inflammatory activity in UC based on the ELECT score showed strong correlation with histopathological scoring (RHI: $r = 0.70$, NHI: $r = 0.73$) with high diagnostic accuracy and sensitivity. Interobserver agreement for endocytoscopic remission between four endoscopists was 0.801. An ELECT score ≤ 2 was a prognostic marker for favorable clinical and endoscopic disease outcome during 15 months follow-up.

Conclusions Endocytoscopy enables accurate real-time assessment of histologic inflammation and can predict long-term disease behavior in UC.

OP027 DYE ANOTHER DAY: DYE-BASED CHROMOENDOSCOPY VERSUS I-SCAN VIRTUAL CHROMOENDOSCOPY IN LONG-STANDING UC: A MULTICENTER PROSPECTIVE RANDOMIZED CONTROLLED TRIAL

Authors Sinonquel P.^{1,2}, Jans A.³, Pierick M.⁴, Seerden T.⁵, Sloth S.⁶, Karstensen J.G.^{6,7}, De Hertogh G.⁸, Demedts I.¹, Willekens H.⁹, Vermeire S.^{1,2}, Bisschops R.^{1,2}

Institutes 1 UZ Leuven, Gastroenterology and Hepatology, Leuven, Belgium; 2 KU Leuven, Translational Research in Gastrointestinal Diseases, Leuven, Belgium; 3 UZ Leuven, Internal Medicine, Leuven, Belgium; 4 MUMC, Gastroenterology, Maastricht, Netherlands; 5 Amphia Hospital, Gastroenterology, Breda, Netherlands; 6 Copenhagen University Hospital, GastroUnit, Herlev, Denmark; 7 Copenhagen University Hospital, GastroUnit, Amager, Denmark; 8 UZ Leuven, Pathology, Leuven, Belgium; 9 UZ Leuven, Endoscopy, Leuven, Belgium

DOI 10.1055/s-0042-1744590

Aims Long-standing ulcerative colitis (UC) has an increased risk for developing colorectal dysplasia and neoplasia. Dye-based chromoendoscopy (DCE) and virtual chromoendoscopy (VCE) increase detection of neoplastic lesions. However, limited data are available on the impact of i-scan VCE for UC neoplasia detection. We undertook a prospective randomized controlled trial to compare the neoplasia detection between DCE and i-scan in patients with long-standing UC.

Methods In 4 European hospitals, 136 patients with long-standing UC (mean disease duration 19.88 (DCE) vs 18.49 years (i-scan)) were randomized (1:1) to either DCE with methylene blue 0.1 % ($n = 71$) or i-scan ($n = 65$). Biopsies were taken from visible lesions and surrounding mucosa. Neoplastic lesions included any type of dysplasia, polyp or carcinoma. Statistical analysis was performed using t-test for continuous data and Fishers' exact for proportions.

Results The neoplasia detection rate was not significantly different between the DCE (18.3 %) vs VCE (26.2 %) group, respectively (OR 0.63, 95 % CI 0.27 – 1.37, $p = 0.305$). However, the per lesion neoplasia detection was significantly better with i-scan than with DCE (14.5 % vs 33.9 %, $p = 0.033$). The mean number of neoplastic lesions per colonoscopy was 0.24 for DCE and 0.32 for i-scan ($p = 0.432$). Both withdrawal and total procedural time were on average 10.1 and 9.8 minutes shorter in the i-scan group ($p < 0.001$).

Conclusions This multicenter prospective randomized trial showed that in long-standing UC patients, no significant difference in neoplasia detection was found between DCE and i-scan. However, i-scan had a lower false positive rate and a significant shorter procedure time. I-scan could therefore be a valid replacement for DCE.

OP028 VALIDATION OF A NEW OPTICAL DIAGNOSIS TRAINING PLATFORM TO IMPROVE DYSPLASIA CHARACTERISATION IN INFLAMMATORY BOWEL DISEASE (OPTIC-IBD): A MULTICENTRE RANDOMISED CONTROLLED STUDY

Authors Iacucci M.^{1,2}, Ingram R.J.M.^{2,1}, Bazarova A.³, Cannatelli R.⁴, Labarile N.⁵, Nardone O.M.⁶, Parigi T.L.^{7,1}, Siau K.⁸, Smith S.CL¹, Ferraz J.GP², Kiesslich R.⁹, Panaccione R.², Parra-Blanco A.¹⁰, Tontini G.E.^{11,12}, Uraoka T.¹³, Ghosh S.¹⁴

Institutes 1 University of Birmingham, Institute of Immunology and Immunotherapy, Birmingham, United Kingdom; 2 University of Calgary, Cumming School of Medicine, Calgary, Canada; 3 University of Cologne, Institute for Biological Physics, Köln, Germany; 4 University of Milan ASST Fatebenefratelli Sacco, Department of Biochemical and Clinical Sciences 'L Sacco', Milano, Italy; 5 National Institute of Research 'Saverio De Bellis', Section of Gastroenterology, Castellana Grotte, Italy; 6 School of Medicine Federico II of Naples, Department of Clinical Medicine and Surgery, Napoli, Italy; 7 Humanitas University, Department of Biomedical Sciences, Milano, Italy; 8 Royal Cornwall Hospitals NHS Trust, Department of Gastroenterology, Truro, United Kingdom; 9 Helios Horst-Schmidt-Kliniken Hospital, Division of Gastroenterology, Wiesbaden, Germany; 10 Nottingham University Hospitals NHS Trust, Department of Gastroenterology, Nottingham, United Kingdom; 11 University of Milan, Department of Pathophysiology and Organ Transplantation, Milano, Italy; 12 Fondazione IRCCS Cà Granda Ospedale Maggiore Policlinico, Gastroenterology and Digestive Endoscopy Unit, Milano, Italy; 13 Gunma University Graduate School of Medicine, Department of Gastroenterology and Hepatology, Maebashi, Japan; 14 University College Cork, APC Microbiome Ireland, Cork, Ireland

DOI 10.1055/s-0042-1744591

Aims To develop and validate online training in optical diagnosis of dysplastic lesions in IBD (NCT04924543).

Methods We designed an interactive, self-directed, multi-modality learning module (includes optical diagnosis methods, classification systems, examples and self-assessments). We invited participants from Canada, Italy and the UK. Assessments comprised short endoscopic videos, divided into 8 non-dysplastic (hyperplastic, inflammatory, SSL) and 16 dysplastic IBD colonic lesions (SSL-D, low/high-grade dysplasia, cancer). Participants classified lesions, predicted histology and rated their confidence, then completed online training. The videos were repeated in a random order after ≥ 7 -14d. Participants were then randomized 1:1 to feedback and extra training, with a final assessment after 60d. We report diagnostic performance for dysplasia, interrater reliability and rater confidence.

Results We present a planned interim analysis of 77 participants (Table 1). Diagnostic accuracy for dysplasia improved (primary endpoint: 44.5 to 54.0%, $P < 0.0001$), particularly for novice and intermediate endoscopists (data not shown). In multilevel logistic regression, training was associated with correct diagnoses for high confidence (OR 1.40, 1.13-1.77) but not low confidence ratings (OR 1.09, 0.96-1.25). Consistency between participants improved from slight to fair (Fleiss' κ 0.16 to 0.24, $P = 0.015$), proportionate with experience. Training increased participants' confidence to correctly identify dysplasia (high confidence 25% to 46%, $P < 0.0001$).

► Table 1 Diagnostic Performance for Dysplasia

	nor median (IQR)	Accuracy Pre- vs. Post-Course [%] (95% CI)	Sensitivity Pre- vs. Post-Course [%] (95% CI)	Specificity Pre- vs. Post-Course [%] (95% CI)
Overall	77	44.5 vs. 54.0, $P < 0.0001$ (43.2-46.2, 52.4-55.6)	50.3 vs. 59.1 (46.8-56.2, 54.5-63.2)	33.0 vs. 43.8 (28.9-37.7, 39.1-48.5)
Participant confidence in prediction: Low and High	Pre: 18 (13-23) Post: 13 (7-20)	40.4 vs. 46.1, $P = 0.0455$ (38.8-42.3, 44.3-48.1)	46.5 vs. 45.1 (42.2-53.9, 39.4-52.1)	28.5 vs. 48.3 (23.8-34.4, 42.5-54.8)
	Pre: 6 (1-11) Post: 11 (4-17)	55.0 vs. 64.6, $P = 0.0574$ (52.2-57.8, 61.3-66.5)	59.7 vs. 61.2 (51.3-67.3, 51.4-66.2)	44.9 vs. 70.3 (36.0-53.3, 61.8-75.6)
Participant endoscopic experience	Novice (< 100 lifetime colonoscopies): 30	Novice: 35.0 vs. 45.8, $P = 0.0003$ (31.7-42.7, 43.7-48.4)	Novice: 39.6 vs. 51.7 (34.6-51.0, 45.3-60.2)	Novice: 25.8 vs. 34.2 (20.2-34.8, 28.0-42.0)
	Intermediate: 25	Intermediate: 43.3 vs. 55.7, $P = 0.0004$ (39.1-49.9, 52.7-58.3)	Intermediate: 49.8 vs. 59.3 (43.2-59.3, 51.1-66.1)	Intermediate: 30.5 vs. 48.5 (24.0-39.8, 39.8-55.9)
	Experienced (> 1000): 22	Experienced: 58.9 vs. 63.3, $P = 0.0703$ (53.0-63.2, 59.9-65.8)	Experienced: 65.6 vs. 69.0 (57.1-72.4, 58.6-75.2)	Experienced: 45.5 vs. 51.7 (36.9-53.9, 42.0-59.1)

Conclusions The OPTIC-IBD training module improved participants' accuracy, precision and confidence in optical diagnosis of dysplasia. Next, we will study the training approaches and classification systems that can best be adopted by non-experts and trainees. Our refined training platform will be made available to improve quality of care for people with IBD.

OP029 EFFECT OF AN ARTIFICIAL INTELLIGENCE SYSTEM IN THE DETECTION OF DYSPLASIAS DURING COLONOSCOPY IN PATIENTS WITH LONG-STANDING ULCERATIVE COLITIS. PRELIMINARY RESULTS

Authors López-Serrano A.^{1,2}, Díaz R.¹, Besó P.¹, Algarra A.¹, Santonja F.J.³, Machancoses A.¹, Del Pozo P.¹, Latorre P.¹, Tomás H.¹, Paredes J.M.¹

Institutes 1 Hospital Universitario Dr. Peset, Gastroenterology Department, Valencia, Spain; 2 University of Valencia, Medicine Department, Valencia, Spain; 3 University of Valencia, Statistics and Operational Research Department, Valencia, Spain

DOI 10.1055/s-0042-1744592

Aims Computerized Artificial Intelligence (AI) systems have been developed to increase the detection of colonic adenomas. High-definition virtual chro-

moendoscopy (VCE) in addition to targeted biopsies is one of the recommended techniques for surveillance of dysplasia in long-standing ulcerative colitis (UC). However, there is no data on the usefulness of AI in this setting. The aim was to assess the effectiveness of AI-assisted colonoscopy in dysplasia detection in patients with long-standing UC.

Methods A prospective crossover study in patients with UC referred for colorectal cancer (CRC) surveillance colonoscopy was performed in May 2021. Patients underwent VCE with iSCAN (tween mode 1-3; Pentax, Japan). The colon was explored in sections by one endoscopist who was blinded to the results of the AI-assisted colonoscopy. Simultaneously, a second endoscopist checked the images from the IA Discovery™ system. All the suspicious areas detected by the two techniques were biopsied and/or resected.

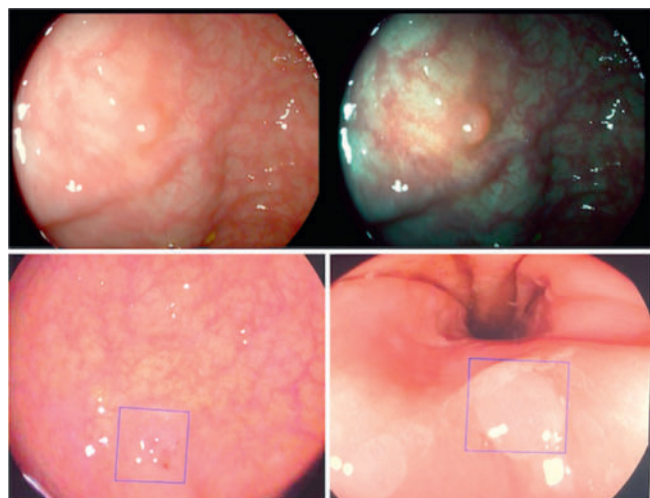
Results Fifty patients were included: 42 % female; mean (SD) age, 50.2 (11.1) years. 73 lesions were detected, mainly in the left colon: 65 (89 %) lesions were detected by VCE with iSCAN and 68 (93 %) lesions by the IA Discovery™ system. In 27 patients, 42 lesions were analyzed: 10 dysplasia and 32 non-dysplastic lesions. There were no statistical significance differences in the number of lesions detected (dysplastic or not).

► **Table 1** Histology of lesions analysed in 27 patients.

Variable	VCE iSCAN *	AI Discovery™ *	p†
Dysplasia (n = 10)	9	9	–
Non-dysplasia (n = 32)	29	30	0.487

*, number of lesions.

†, Fisher exact test. VCE iSCAN: virtual chromoendoscopy with iSCAN. AI: computerized Artificial Intelligence.



► **Fig. 1**

Conclusions The AI Discovery™ system present a similar diagnostic performance to VCE with iSCAN in the detection of colonic dysplasia in UC patients at risk for CRC.

OP030 A VIRTUAL CHROMOENDOSCOPY ARTIFICIAL INTELLIGENCE SYSTEM TO DETECT ENDOSCOPIC AND HISTOLOGIC REMISSION IN ULCERATIVE COLITIS

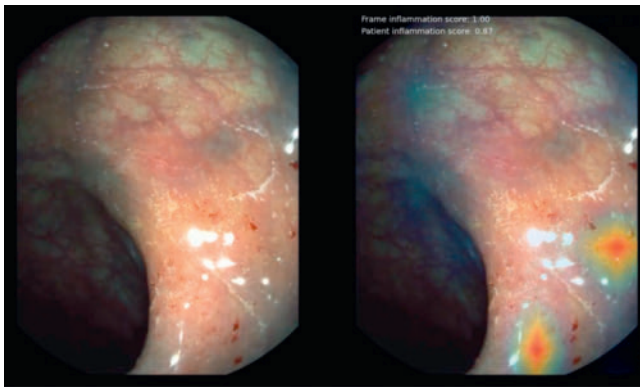
Authors Iacucci M.^{1,2,3}, Cannatelli R.^{1,4}, Parigi T.L.^{1,5}, Buda A.⁶, Labarile N.⁷, Nardone O.M.^{1,8}, Tontini G.E.⁹, Rimondi A.¹⁰, Bazarova A.^{1,11}, Bhandari P.¹², Bisschops R.¹³, De Hertogh G.¹³, del Amor R.¹⁴, Ferraz J.G.³, Goetz M.¹⁵, Gui X.¹⁶, Hayee B.¹⁷, Kiesslich R.¹⁸, Lazarev M.¹⁹, Naranjo V.¹⁴, Panaccione R.³, Parra-Blanco A.²⁰, Pastorelli L.²¹, Rath T.²², Røyset E.S.²³, Vieth M.²⁴, Villanacci V.²⁵, Zardo D.²⁶, Ghosh S.^{27,2,1,3}, Grisan E.^{28,29}

Institutes 1 Institute of Immunology and Immunotherapy, NIHR Wellcome Trust Clinical Research Facilities, University of Birmingham, and University Hospitals Birmingham NHS Trust, Birmingham, United Kingdom; 2 National Institute for Health Research (NIHR) Birmingham Biomedical Research Centre, Birmingham, United Kingdom; 3 Division of Gastroenterology and Hepatology, University of Calgary, Calgary, Canada; 4 Gastroenterology and Digestive Endoscopy Unit, Department of Biochemical and Clinical Sciences "L. Sacco", University of Milan, ASST Fatebenefratelli Sacco, Milan, Italy; 5 Department of Biomedical Science, Humanitas University, Milan, Italy; 6 Gastroenterology Unit, Santa Maria del Prato Hospital, Feltre, Italy; 7 Section of Gastroenterology II, National Institute of Research "Saverio De Bellis", Castellana Grotte, Italy; 8 Gastroenterology, Department of Clinical Medicine and Surgery, University Federico II of Naples, Naples, Italy; 9 Division of Gastroenterology, Fondazione IRCCS Ca' Granda Ospedale Maggiore Policlinico, Department of Pathophysiology and Transplantation, University of Milan, Milan, Italy; 10 University of Milan, Milan, Italy; 11 Institute for Biological Physics, University of Cologne, Cologne, Germany; 12 Division of Gastroenterology, Queen Alexandra Hospital, Portsmouth, United Kingdom; 13 Division of Gastroenterology, University Hospitals Leuven, Leuven, Belgium; 14 Instituto de Investigación e Innovación en Bioingeniería, Universitat Politècnica de València, Valencia, Spain; 15 Division of Gastroenterology, Klinikum, Böblingen, Germany; 16 Division of Gastroenterology, University of Washington, Seattle, Washington, United States; 17 Division of Gastroenterology, Kings College London, London, United Kingdom; 18 Helios HSK Wiesbaden, Wiesbaden, Germany; 19 Division of Gastroenterology, Johns Hopkins Hospital, Baltimore, Maryland, United States; 20 Division of Gastroenterology, University of Nottingham, Nottingham, United Kingdom; 21 Liver and Gastroenterology Unit, Department of Health Sciences, Università degli Studi di Milano, Department ASST Santi Paolo e Carlo, University Hospital San Paolo, Milan, Italy; 22 Division of Gastroenterology, University of Erlangen, Erlangen, Germany; 23 Department of Clinical and Molecular Medicine, Norwegian University of Science and Technology, Trondheim, Norway; 24 Klinikum Bayreuth, Bayreuth, Germany; 25 Institute of Pathology, Spedali Civili, Brescia, Italy; 26 Department of Pathology, San Bortolo Hospital, Vicenza, Italy; 27 APC Microbiome Ireland, College of Medicine and Health, Cork, Ireland; 28 School of Engineering Computer Science and Informatics, London South Bank University, London, United Kingdom; 29 Department of Engineering, University of Padova, Padova, Italy
DOI 10.1055/s-0042-1744593

Aims We aimed to develop an artificial intelligence (AI) system to assess endoscopic remission (ER) and histologic remission (HR) of ulcerative colitis (UC) in both white light (WL, using Ulcerative Colitis Endoscopic Index of Severity [UCEIS]) and virtual chromoendoscopy (VCE, using Paddington International Virtual ChromoendoScopy ScOre [PICaSSO]).

Methods A convolutional neural network (CNN) was developed based on 559 endoscopy videos, from 302 UC patients prospectively included in the PICaSSO multicentre study. The videos were divided in training (254), validation (62), and testing (243), and comprised 67280 frames in total. The CNN was trained to predict both ER (defined as UCEIS ≤ 1 in WL and as PICaSSO ≤ 3 in VCE) and

HR (defined as Roberts Histological Index ≤ 3 with no neutrophils in lamina propria or epithelium) in video clips.



► Fig. 1

Results In the validation cohort, our system predicted ER in WL videos with 82 % sensitivity, 94 % specificity and an area under the ROC curve (AUROC) of 0.92. In VCE, sensitivity was 74 %, specificity 95 %, and AUROC 0.95. In the testing cohort, the diagnostic performance remained similar. The diagnostic performance for the prediction of HR in the validation set had sensitivity, specificity, and accuracy of 92 %, 83 %, and 85 %, respectively, using VCE; and 83 %, 87 %, and 86 % respectively, with WL. In the testing set, these metrics declined modestly while remaining good. Of note, the algorithm's prediction of histology was similar with VCE and WL videos.

► Table 1

Diagnostic performance	PICaS-SO ≤ 3	UCEIS ≤ 1	RHI ≤ 3 and no neutrophils in LP	
Validation/ Testing cohort	VCE 62 videos/243 videos	WL 58 videos/241 videos	VCE 61 videos/241 videos	WL 59 videos/238 videos
Sensitivity	0.74 (0.53 – 0.93)/0.60 (0.45 – 0.74)	0.82 (0.67 – 0.98)/0.68 (0.49 – 0.83)	0.92 (0.79 – 1.06)/0.78 (0.70 – 0.82)	0.83 (0.62 – 1.04)/0.89 (0.84 – 0.93)
Specificity	0.95 (0.89 – 1.02)/0.89 (0.84 – 0.93)	0.94 (0.87 – 1.02)/0.88 (0.83 – 0.92)	0.83 (0.72 – 0.94)/0.77 (0.63 – 0.88)	0.87 (0.78 – 0.97)/0.49 (0.34 – 0.64)
Accuracy	0.89 (0.81 – 0.97)/0.83 (0.78 – 0.88)	0.89 (0.81 – 0.97)/0.85 (0.80 – 0.90)	0.85 (0.76 – 0.94)/0.77 (0.71 – 0.82)	0.86 (0.77 – 0.95)/0.81 (0.75 – 0.86)

Conclusions Our AI system accurately recognizes ER in videos and predicts HR equally well.

Optimizing bowel preparation and your service's quality

Thursday, 28 April 2022

11:00–12:00

Club H

OP031 1L NER1006 DEMONSTRATES FAVOURABLE ADHERENCE RATES IN BOTH CLINICAL TRIALS AND THE REAL WORLD

Authors Bisschops R.¹, Neumann H.^{2,3}, Allen C.⁴, Repici A.^{5,6}

Institutes 1 University Hospitals Leuven, Department of Gastroenterology and Hepatology, Leuven, Belgium; 2 University Medical Center Mainz, Department of Medicine 1, Mainz, Germany; 3 GastroZentrum Lippe, Bad Salzungen, Germany; 4 Salix Pharmaceuticals, Bridgewater, United States; 5 Humanitas University, Department of Biomedical Sciences, Milan, Italy; 6 Humanitas Research Hospital – IRCCS, Department of Gastroenterology, Milan, Italy

DOI 10.1055/s-0042-1744594

Aims 1L NER1006 is an ultra-low-volume bowel preparation with high-quality cleansing efficacy and a favourable safety profile. Since the introduction of 1L NER1006, it is estimated that it has been used in at least 5.9 million procedures. To understand the patient experience with 1L NER1006, we conducted a systematic literature search for all reported data on patient adherence with 1L NER1006 from clinical trials and real-world studies.

Methods Adherence was defined as the volume of preparation consumed and patient compliance with treatment. We identified five clinical trials and four real-world studies.

Results 1L NER1006 demonstrated significantly better adherence, across both doses of bowel preparation, compared with 4LPEG in a randomised Phase IV clinical trial (Table 1; dose one: $p=0.03$; dose two: $p=0.006$) (1). In a Phase III randomised clinical trial comparing 1L NER1006 and 2LPEG there was no significant difference in patient adherence to either dose of bowel preparation (dose one: $p=0.214$; dose two: $p=0.183$) (2). Similar results were seen in real-world studies. A large multicentre, US real-world non-comparative study, showed 87.1 % of patients completed the 1L NER1006 bowel preparation (3). Moreover, in a real-world study involving five Italian centres, adherence rates were found to be comparable for 1L NER1006 (230/233 [98.7 %]), 4LPEG (456/490 [93.1 %], $p=0.078$) and 2LPEG (543/566 [95.9 %], $p=0.357$) (4) (Table 1).

► Tab. 1 Adherence reported in selected clinical trials and real-world studies.

Study	Comparator	Patients adhering to treatment, n/N (%)		
		1L NER1006	Comparator	p-value
Phase III MORA clinical trial	2LPEG	Dose 1: 242/262 (92.4)	Dose 1: 250/263 (95.1)	0.214
		Dose 2: 239/262 (91.2)	Dose 2: 248/263 (94.3)	0.183
Phase IV clinical trial	4LPEG	Dose 1: 192/192 (100)	Dose 1: 185/190 (97.4)	0.030
		Dose 2: 190/192 (99.0)	Dose 2: 177/190 (93.2)	0.006
Real-world observational US study	–	1392/1598 (87.1)	–	–
Real-world observational Italian study	2LPEG	230/233 (98.7)	543/566 (95.9)	0.357
	4LPEG	–	456/490 (93.1)	0.078

Conclusions Patient experience with 1L NER1006 was overall favourable in both clinical and real-world settings, with high adherence.

References

- [1] Repici et al 2021;S0016-5107(21)01318-3,
- [2] Bisschops et al 2019; 51: 60–72
- [3] Cash et al 2021; 21: 70
- [4] Maida et al 2020; 26: 1950–61

OP032 SAME-DAY MORNING-ONLY DOSING OF 1L NER1006, A POLYETHYLENE GLYCOL BOWEL PREPARATION, NEARLY DOUBLES THE CHANCE OF HIGH-QUALITY CLEANSING VERSUS STANDARD 2L-POLYETHYLENE GLYCOL AND ASCORBATE

Authors Manning J.¹, Epstein M.², Allen C.³, Álvarez-González M.A.⁴

Institutes 1 Borders General Hospital, Melrose, United Kingdom; 2 Investigative Clinical Research, Annapolis, United States; 3 Salix Pharmaceuticals, Bridgewater, United States; 4 Hospital del Mar, Barcelona, Spain

DOI 10.1055/s-0042-1744595

Aims NER1006 is a 1L polyethylene glycol (PEG)-based bowel preparation with approved morning-only dosing in adults across Europe and the United States. NER1006 is indicated for bowel cleansing starting 4–6 hours before colonoscopy, safeguarding sleep and nutritional status. We compared the colon-cleansing efficacy of morning-only NER1006 versus overnight split dosing with standard 2LPEG and ascorbate (2LPEG).

Methods Post hoc analysis of a randomised Phase III clinical trial was performed (1). 530 patients scheduled for a non-urgent colonoscopy received either morning-only dosing with NER1006 or 2-day morning/evening split dosing with 2LPEG. Cleansing quality was assessed strictly by treatment-blinded central readers using the Boston Bowel Preparation Scale. Cohorts were initially compared using the two-sided t-test. In 516 patients with time lapse (treatment end to colonoscopy), body mass index and adherence data, multiple logistic regression analysis predicted adequate (segmental scores ≥ 2) and high-quality (scores 7–9 in adequately cleansed patients) cleansing with NER1006 versus 2LPEG.[1]

Results Adequate cleansing success was attained at comparable rates with NER1006 and 2LPEG (90.0% [243/270] vs. 89.2% [232/260]; $p = 0.772$). High-quality cleansing was numerically greater with NER1006 than 2LPEG (23.0% [62/270] vs. 16.5% [43/260]; $p = 0.064$). Multivariable regression analysis showed that NER1006 was significantly associated with improved high-quality cleansing success versus 2LPEG (odds ratio 1.93 [1.31–2.86]; unadjusted $p < 0.001$ and with Bonferroni correction for 11 assessed variables $p = 0.010$) (Table 1).

► Table 1

Variables	Adequate BBPS	High-quality BBPS
	Mean (LCL–UCL); p-value	Mean (LCL–UCL); p-value
NER1006, 0/1	1.26 (0.7–2.27); 0.443	1.93 (1.31–2.86); <0.001
Adherence, 0/1/2	1.4 [0.94–2.04]; 0.083	1.24 [0.94–1.65]; 0.141
Age, years	0.98 [0.96–1.01]; 0.221	1.01 [0.99–1.03]; 0.236

Conclusions Same-day, morning-only dosing with 1L NER1006 was associated with comparable adequate and improved high-quality cleansing versus 2LPEG.

References

- [1] Bisschops R et al. Endoscopy 2019; 51: 60–72

OP033 EFFICACY OF VERY LOW-VOLUME BOWEL PREPARATION FOR COLONOSCOPY: LESS IS MORE!

Authors Bonura G.F.¹, Impellizzeri G.¹, Gabbani T.¹, Rainer J.¹, Curatolo A.¹, Ottaviani L.¹, Deiana S.¹, Biancheri P.¹, Soriani P.¹, Manno M.¹

Institute 1 Gastroenterology and Digestive Endoscopy Unit, Azienda USL Modena, Modena, Italy

DOI 10.1055/s-0042-1744596

Aims Bowel cleansing quality is a key performance indicator for colonoscopy. In our study, we compared polyethylene glycol (PEG)-based bowel preparations (BPs) in terms of bowel cleansing quality, cecal intubation rate and patient compliance.

Methods From January 2019 to September 2020, data from all consecutive adult outpatients who underwent colonoscopy in our Digestive Endoscopy Unit were collected. In our “open-access” booking system, patients could choose one of the available BPs without preliminary counselling by a physician or a nurse. BPs included high-volume (4L) PEG, low-volume PEG [2L-PEG-citrate or 2L-PEG-ascorbate (Asc)] and very low-volume PEG (1L-PEG-Asc). Adequate and excellent BP quality was defined as Boston Bowel Preparation Scale (BBPS) score ≥ 6 and ≥ 8 , respectively. Cecal intubation rate and compliance to full BP were also evaluated.

Results During the study, 6681 patients underwent colonoscopy in our Unit. Among them, 430 had taken 4L-PEG, 270 2L-PEG-citrate, 4069 2L-PEG-Asc and 1912 1L-PEG-Asc. Adequate BP was achieved in 89.3%, 93.0%, 93.7%, and 96.3%, while excellent BP was achieved in 49.0%, 51.1%, 57.2%, and 67.3% for 4L-PEG, 2L-PEG-citrate, 2L-PEG-Asc and 1L-PEG-Asc, respectively (1L-PEG-Asc vs other BPs, $p < 0.001$). Cecal intubation was achieved in 91.9%, 91.4%, 94.1% and 95.7% for 4L-PEG, 2L-PEG-citrate, 2L-PEG-Asc and 1L-PEG-Asc (1L-PEG-Asc vs other BPs, $p < 0.001$). Compliance to full BP was achieved in 93.9%, 94.4%, 97.3%, and 96.4% for 4L-PEG, 2L-PEG-citrate, 2L-PEG-Asc and 1L-PEG-Asc (2L-PEG-Asc vs other BPs, $p < 0.001$).

► Table 1

	4L-PEG (430)	2L-PEG-citrate (270)	2L-PEG-Asc (4069)	1L-PEG-Asc (1912)
BBPS ≥ 6 , n (%)	384 (89.3)	251 (93.0)	3814 (93.7)	1842 (96.3)
BBPS ≥ 8 , n (%)	211 (49.0)	138 (51.1)	2327 (57.2)	1288 (67.3)
Cecal intubation rate, n (%)	392 (91.9)	247 (91.4)	3831 (94.1)	1829 (95.7)
Compliance to full BP, n (%)	404 (93.9)	255 (94.4)	3957 (97.3)	1843 (96.4)

Conclusions Our data show that very low-volume BP achieves the highest rates of adequate and excellent bowel cleansing and cecal intubation.

OP034 VALIDATION OF PRIORITY CRITERIA FOR RESTARTING ENDOSCOPIC ACTIVITY AFTER THE FIRST WAVE OF COVID19 PANDEMIC IN SPAIN. THE ENDPRIOR STUDY

Authors Rivero Sánchez L.¹, García-Rodríguez A.², Castillo J.¹, Díez-Redondo P.³, Nuñez Rodríguez H.³, Ponce M.⁴, San Juan M.⁵, Seoane A.⁶, Albert Carrasco M.⁷, Zaffalon D.⁸, Guarner C.⁹, Murzi M.⁹, Jover R.¹⁰, Medina Prado L.¹⁰, Aspuru Rubio K.¹¹, García Zafra B.², Joao Matias D.¹², Cárdenas A.¹, Gonzalez Suarez B.¹, Sendino O.¹, Cordoba H.¹, Fernández-Simón A.¹, Araujo I.¹, Ginés A.¹, Llach J.¹, Fernández-Esparrach G.¹, Pellisé M.¹, Balaguer F.¹

Institutes 1 Hospital Clínic de Barcelona, Universitat de Barcelona, IDIBAPS, CIBERHer, Gastroenterology Department, Barcelona, Spain; 2 Hospital de Viladecans, Barcelona, Spain; 3 Hospital Universitario Río

Hortega, Valladolid, Spain; 4 Hospital Clínico de Valencia, Valencia, Spain; 5 Hospital Universitario Nuestra Señora de la Candelaria, Tenerife, Spain; 6 Hospital del Mar, Barcelona, Spain; 7 Hospital Universitari Dr. Josep Trueta, Girona, Spain; 8 Hospital de Terrassa, Terrassa, Spain; 9 Hospital de la Santa Creu i Sant Pau, Barcelona, Spain; 10 Hospital Universitario de Alicante, Alicante, Spain; 11 Hospital San Jorge de Huesca, Huesca, Spain; 12 Hospital Universitario de Salamanca, Salamanca, Spain
DOI 10.1055/s-0042-1744597

Aims National Spanish societies (AEG-SEED) proposed prioritization criteria for restarting the endoscopic activity after the first wave of COVID19 pandemic. The aim was to evaluate the diagnostic yield of esophagogastroduodenoscopies (EGD) and colonoscopies in symptomatic patients for detecting clinically relevant lesions (CRL)

Methods Retrospective analysis of endoscopy reports from activity restart (April-May 2020) up to December 2020 of 12 centers that prospectively used AEG-SEED (symptoms&signs list) priority criteria (high = P1, medium = P2, and low = P3). CRL (defined before data collection) were those lesions that required invasive (endoscopic/surgical) treatment, hospitalization and/or close follow-up. Urgent, surveillance, therapeutic and colorectal cancer (CRC) screening procedures were excluded

Results 2058 (981 EGD; 1077 colonoscopies) in 1900 patients (56 % women; 58 ± 16 years) were registered. Elapsed time (months; median[IQR]) from request to procedure completion for P1, P2 and P3 were 3 (2-5), 4 (3-7) and 6 (4-8) respectively. Overall CRL rates in EGD and colonoscopies were 11 % and 18 % respectively. CRL rates of EGD in P1, P2, and P3 were 13 %, 14 %, and 6 %; and 26 %, 18 %, and 12 % of colonoscopies. Among CRL, 6(0.6 %) upper cancers (3 gastric, 2 esophageal, 1 duodenal) and 35(3.2 %) CRC were detected. CRL and CRC rates in patients with positive, not-performed and negative fecal occult blood test (FOBT) were 31 % and 9 %, 17 % and 2 %, 10 % and 0 respectively

► Table 1

FOBT performed in a non-protocolized fashion *	Positive FOBT * n = 180 (%)	FOBT not-performed n = 800 (%)	Negative FOBT * n = 97 (%)
CRL	55 (31)	133 (17)	10 (10)
-CRC	16 (9)	19 (2)	0
-Advanced adenoma/ serrated lesion	25 (14)	60 (8)	6 (6)
-Non-neoplastic lesions	14 (8)	42 (5)	4 (4)



► Fig. 1

Conclusions AEG-SEED priority criteria identified those symptomatic patients with higher-risk of having CRL in colonoscopies according to priority level, with a higher diagnostic yield according to FOBT results. Optimize prioritization is especially needed for EGD to manage waiting lists in open-access endoscopy units

OP035 USING THE ESGE QUALITY CHECK APP IN A NON-ACADEMIC ENDOSCOPY UNIT: HOW MUCH DOES IT COST AND WHAT ARE THE BARRIERS ?

Authors Leclercq P.^{1, 2}, Bourseau S.¹, Plomteux O.¹, Bastens B.¹, Bisschops R.²

Institutes 1 Clinique Mont Legia – CHC Groupe Santé, Gastroenterology, Liege, Belgium; 2 UZ Leuven, Gastroenterology, Leuven, Belgium
DOI 10.1055/s-0042-1744598

Aims The aim was to assess the human resources and potential barriers for implementing ESGE performance measures (PM) in upper gastrointestinal (UGI) endoscopy, using the ESGE QIC Quality Check App (QIC app).

Methods In one non-academic endoscopy unit, PMs from 300 UGI endoscopy reports were entered into the QIC app to calculate the pre-training unit performance.

The electronic reporting software (ERS) was adapted to integrate PM. During a training meeting, we presented to endoscopists the results of the pre-training audit, ESGE PM concept and updated ERS.

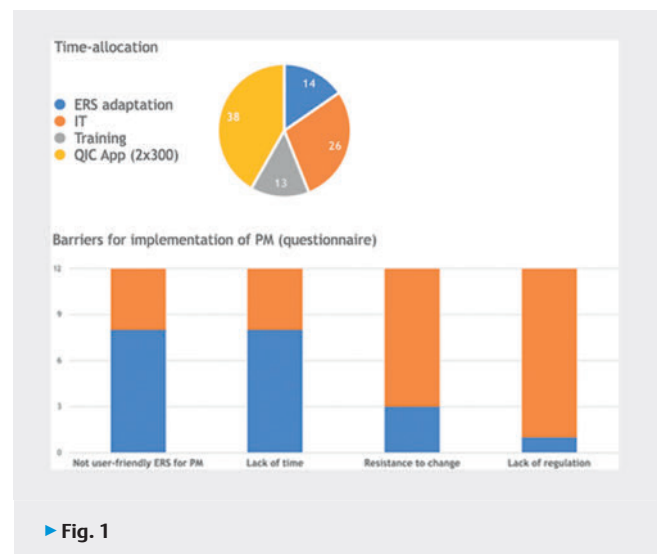
After a 3-month implementation phase, PMs from 300 UGI endoscopies were re-assessed (post-training audit).

Barriers for implementation were assessed by a questionnaire to the endoscopists after post-training audit.

We calculated human resources (time-allocation) needed for implementation of the quality project.

Results The pre-/post-training PM's results are presented in Table 1.

Resources time-cost and reported barriers for implementing PM are presented in Figure 1.



► Fig. 1

Although both KPM and mPM improved after 3 months, only 2 KPM (1&4) and 2 mPM (4&5) reached the minimum target.

► Table 1

Performance Measure	Pre-training (%)	Post-training (%)	Target (%)
Key Performance Measure (KPM)			
-KPM 1: fasting instructions prior to UGI endoscopy	0	100	≥ 95
-KPM 2: documentation of procedure duration	0	84	≥ 90
-KPM 3: accurate photodocumentation of anatomical landmarks and abdominal findings	0	82	≥ 90
-KPM 4: accurate application of standardized disease-related terminology	93	98	≥ 95
-KPM 5: application of Seattle protocol in Barrett's surveillance	20	75	≥ 90
-KPM 6: accurate registration of complications after therapeutic UGI endoscopy	0	39	≥ 95
Minor Performance Measure (mPM)			
-mPM 1: min. 7' procedure time for first diagnostic UGI endoscopy and follow-up of gastric intestinal metaplasia	0	67	≥ 90
-mPM 2: min. 1' inspection time per cm circumferential Barrett's epithelium	0	37.5	≥ 90
-mPM 3: use of Lugol chromoendoscopy in patients with a curatively treated ENT or lung cancer to exclude a second primary esophageal cancer	50	Not analysable	≥ 90
-mPM 4: application of a validated biopsy protocol to detect gastric intestinal metaplasia (MAPS guidelines)	82	97	≥ 90
-mPM 5: prospective registration of Barrett's patients	0	100	≥ 85

Conclusions Our analysis showed a reasonable time allocation for implementation of UGI PMs using the ESGE QIC app. In particular, after training and minimal adaptation of the IT system, a service audit with a sample of 300 UGI can be performed in less than 3 working days. Since this is required only once a year, this seems a reasonable price in human resources. Proper ERS integrating user-friendly PM reporting and automated PM extraction are the cornerstone for facilitating implementation of PM in endoscopy.

OP036 A SERVICE EVALUATION OF UNITED KINGDOM ENDOSCOPY USING THE NATIONAL ENDOSCOPY DATABASE

Authors Beaton D.¹, Rutter M.^{1,2}, Sharp L.², Trudgill N.³, Thoufeeq M.⁴, Docherty J.⁵, Nicholson B.⁶, Rogers P.⁷

Institutes 1 North Tees and Hartlepool NHS Foundation Trust, Stockton-on-Tees, United Kingdom; 2 Newcastle University, Population Health Sciences Institute, Newcastle-Upon-Tyne, United Kingdom; 3 Sandwell & West Birmingham NHS Trust, Birmingham, United Kingdom; 4 Sheffield Teaching Hospitals NHS Foundation Trust, Sheffield, United Kingdom; 5 Raigmore Hospital, Inverness, United Kingdom; 6 University of Oxford, Nuffield Department of Primary Care Health Services, Oxford, United Kingdom; 7 Weblogik, Ipswich, United Kingdom
DOI 10.1055/s-0042-1744599

Aims The aim of this study was to undertake an evaluation of current UK endoscopy practice, to inform service planning.

Methods Data on all procedures between 1st Mar 2019 – 29th Feb 2020 were extracted from the national endoscopy database (NED). Endoscopy activity was assessed and the endoscopist workforce was described.

Results Overall 1,639,640 endoscopic procedures were performed (OGD 693,663; colonoscopy 586,464; flexible sigmoidoscopy 335,439; ERCP 23,074), at 407 sites (79% of UK total) by 4990 endoscopists. Median patient age was 59 (IQR 49-71) but was substantially younger in the independent sector; age-specific procedure rates for OGD and colonoscopy peaked in 75-79 year-olds. 51% were female. 89% of procedures were performed in NHS sites. 17% took place each weekday, 10% on Saturdays and 6% on Sundays. Training procedures comprised 6% of procedures, over 99% of which took place in NHS sites.

Endoscopists were predominantly male (74%), while gastroenterologists and surgeons each comprised one-third of the endoscopist workforce. Non-medical endoscopists comprised 12% of the workforce, yet undertook 23% of procedures. 12% of UK sites did not use non-medical endoscopists. Approximately half of endoscopists performing OGD (52%) or colonoscopies (48%) did not meet minimum recommended numbers of annual procedures.

Conclusions We have identified that half of all endoscopists perform fewer than the recommended minimum annual numbers of procedures – this particularly affects medical endoscopists. A national strategy to address this, along with expansion of the non-medical endoscopist workforce, will help increase endoscopist capacity, which could be used to exploit the substantial endoscopy capacity that is available at weekends.

Colorectal Cancer (CRC) Screening

(WEO-ESGE joint session)

13:30–14:30

Thursday, 28 April 2022

South Halls 2 (A&B)

OP037 INCLUSION OF ADVANCED SERRATED POLYPS INCREASES THE YIELD OF COLORECTAL CANCER SCREENING BASED ON FECAL IMMUNOCHEMICAL TESTING

Authors Van Toledo D.¹, Breckveldt E.^{2,3}, Ijspeert J.¹, De Jonge L.², Van De Schootbrugge-Vandermeer H.², Van Vuuren A.⁴, Van Kemenade F.⁵, Ramakers C.⁶, Nagtegaal I.⁷, Van Leerdam M.^{3,8}, Spaander M.⁴, Lansdorp-Vogelaar I.², Toes-Zoutendijk E.², Dekker E.¹

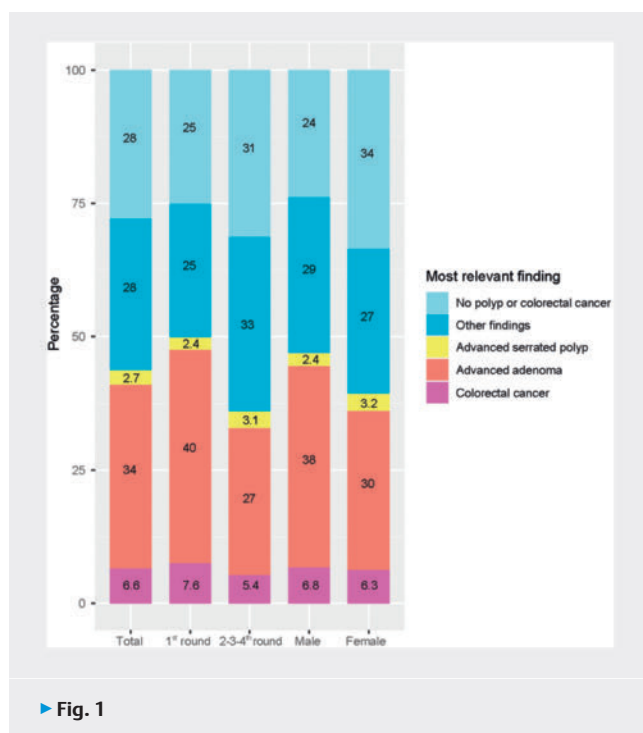
Institutes 1 Amsterdam UMC, location AMC, Gastroenterology & Hepatology, Amsterdam, Netherlands; 2 Erasmus University Medical Center, Department of Public Health, Rotterdam, Netherlands; 3 Netherlands Cancer Institute-Antoni Van Leeuwenhoek, Gastroenterology, Amsterdam, Netherlands; 4 Erasmus University Medical Center, Department of Gastroenterology and Hepatology, Rotterdam, Netherlands; 5 Erasmus University Medical

Center, Department of Pathology, Rotterdam, Netherlands; 6 Erasmus University Medical Center, Department of Clinical Chemistry, Rotterdam, Netherlands; 7 Radboud University Medical Center, Department of Pathology, Nijmegen, Netherlands; 8 Leiden University Medical Center, Department of Gastroenterology and Hepatology, Leiden, Netherlands
DOI 10.1055/s-0042-1744600

Aims Although advanced serrated polyps (ASPs) have a comparable risk as advanced adenomas (AA) to develop into colorectal cancer (CRC), the yield of most screening programs is based only on AA and CRC. Therefore, we assessed the ASP detection rate within the Dutch screening program and evaluated the yield of screening including ASPs.

Methods We analyzed fecal immunochemical test (FIT-)positive colonoscopies from the standardized Dutch screening database and national pathology database from 2014 until 2020. ASP was defined as any serrated polyp ≥ 10 mm, sessile serrated lesion with dysplasia or traditional serrated adenoma. ASP detection rate was defined as the proportion of colonoscopies with ≥ 1 ASP; stratified for sex, age and FIT-round. Original yield of screening was defined as proportion of colonoscopies wherein CRC or AA was detected. Updated definition for yield of screening included detection of ASPs.

Results In total, 322,882 colonoscopies were included. Overall detection rate of ASPs was 5.9%. ASPs were more common among female than male individuals (6.3% vs 5.6%, $p < 0.001$). ASP detection rates in individuals of 55-59, 60-64, 65-69 and 70+ years were 5.2%; 6.1%; 6.1%; 5.9% ($p < 0.001$), respectively. The original yield of screening (without ASP) was 41.1% and increased to 43.8% using the updated definition. The extra yield was higher in females than in males (3.2% vs 2.4%).



Conclusions The detection rate and potential increase in yield of screening demonstrate that ASPs are both common and clinically relevant. Adequate detection and registry of serrated polyps within colonoscopy screening cohorts could contribute to optimize CRC screening.

Esophageal early cancer: Is ESD ready to take on the challenge?
Thursday, 28 April 2022

13:30–14:30
Club A

OP038 ENDOSCOPIC RESECTION OF SUPERFICIAL ESOPHAGEAL NEOPLASIA IN THE CONTEXT OF CIRRHOSIS OR PORTAL HYPERTENSION: A MULTI-CENTER OBSERVATIONAL STUDY

Authors Simonnot M.¹, Chevaux J.B.¹, Schaefer M.¹, Albuissou E.¹, Leal C.², Deprez P.², Pioche M.³, Wallenhorst T.⁴, Caillol F.⁵, Koch S.⁶, Coron E.⁷, Archambeaud I.⁷, Jacques J.⁸, Basile P.⁹, Caillou L.¹⁰, Degand T.¹¹, Lepilliez V.¹², Grandval P.¹³, Culetto A.¹⁴, Vanbiervliet G.¹⁵, Gronier O.¹⁶, Camus Duboc M.¹⁷, Barret M.¹⁸

Institutes 1 Regional University Hospital of Nancy, Vandoeuvre lès Nancy, France; 2 Cliniques universitaires Saint-Luc, Brussels, Belgium; 3 Edouard Herriot Hospital, Hospices Civils de Lyon, Lyon, France; 4 University Hospital of Rennes, Rennes, France; 5 Institut Paoli-Calmettes, Marseille, France; 6 University Hospital of Besançon, Besançon, France; 7 Nantes University Hospital, Nantes, France; 8 University Hospital of Limoges, Limoges, France; 9 University Hospital of Rouen, Rouen, France; 10 University Hospital of Nîmes, Nîmes, France; 11 University Hospital of Dijon, Dijon, France; 12 Jean Mermoz Hospital, Lyon, Lyon, France; 13 AP-HM, Hôpital La Timone, Marseille, France; 14 University Hospital of Toulouse, Toulouse, France; 15 University Hospital, Nice, Nice, France; 16 Sainte Barbe Clinic, Strasbourg, Strasbourg, France; 17 Saint Antoine Hospital, Paris, Paris, France; 18 Cochin Hospital, Paris, Paris, France
DOI 10.1055/s-0042-1744601

Aims Cirrhotic patients are considered to be at high risk for esophageal cancer. Nowadays, endoscopic resection is the standard treatment for superficial tumors. Data are lacking about the management of portal hypertension in patients diagnosed with endoscopically resectable tumors. This study aims to assess safety, effectiveness and methods to prevent potential complications, especially bleeding in portal hypertension context.

Methods This retrospective multicentric French-Belgian study included all consecutive patients with cirrhosis or portal hypertension who underwent esophageal endoscopic resection from 2005 to 2021.

Results

► Table 1			
Variable	Bleeding group, n = 8	Non-bleeding group, n = 122	p value
Tumor size, mm, median (IQR)	18.5 (15.8-26)	40 (22-55)	p = 0.041
INR, median (IQR)	1.47 (1.24-1.56)	1.15 (1.01-1.30)	p = 0.012
Technique EMR-cap, n (%)	5 (62.5)	9 (8)	p = 0.01
Technique ESD, n (%)	3 (37.5)	97 (81)	NS

One hundred and twelve patients underwent 134 endoscopic resections. Most patients were cirrhotic, mainly due to alcohol. Median Model for End-Stage Liver Disease score was 10. Esophageal varices were described in 71 cases, including 15 cases of large varices. Forty-two patients were under betablockers. To prevent bleeding before resection, 7 patients underwent a transjugular intrahepatic portosystemic shunt, 8 had an endoscopic band ligation (EBL), 15 were placed under vasoactive drugs, 8 received a platelet transfusion. Nine patients underwent an EBL during the same procedure as the tumor resection.

Overall rate of histologic complete resection was 76 % (98/129) and overall rate of curative resection was 63 % (81/129). Three transmural perforations, 8 post-operative bleedings, 8 sepsis, 6 cirrhosis decompensations within 30 days and 22 esophageal stenosis at the first endoscopic control occurred. All complications were managed conservatively.

Conclusions To our knowledge, this is the largest study focusing on esophageal endoscopic resection in the context of portal hypertension. In this population, endoscopic resection appears to be as effective and safe than in general population.

OP039 HIGH PROFICIENCY OF ESOPHAGEAL ENDOSCOPIC SUBMUCOSAL DISSECTION WITH A “TUNNEL + CLIP” STRATEGY: A LARGE FRENCH MULTICENTRIC STUDY

Authors Wallenhorst T.¹, Jacques J.², Brochard C.¹, Legros R.², Lepetit H.², Barret M.³, Rivory J.⁴, Pioche M.⁴, Lupu A.⁴, Stephant S.¹

Institutes 1 CHU Pontchaillou, Service des Maladies de l'Appareil Digestif, Rennes, France; 2 CHU Dupuytren, rvice d'Hépatogastro-Entérologie, Limoges, France; 3 Hopital Cochin, Assistance Publique Hôpitaux de Paris, Service de Gastroentérologie, Paris, France; 4 Hôpital Edouard Herriot, Hospices Civils de Lyon, Service d'Hépatogastro-entérologie, Lyon, France
DOI 10.1055/s-0042-1744602

Aims Esophageal endoscopic submucosal dissection (ESD) is the gold standard for the treatment of precancerous lesions or superficial esophageal cancers. This procedure is currently performed by expert endoscopists only, and poorly standardized. We aimed to assess the technical results and outcomes of a “tunnel + clip” strategy for esophageal ESD procedures performed by less experienced operators for the treatment of superficial neoplasms.

Methods All consecutive esophageal ESDs performed with the “tunnel + clip” technique for patients with early esophageal cancer in 3 centers were enrolled. Procedural characteristics, clinical outcomes, and complications were recorded.

Results Among 195 esophageal ESD procedures performed, early adenocarcinomas or high-grade dysplasia complicating Barrett's esophagus were predominant (132/195, 67.7 %) compared with early squamous cell carcinomas (63/195, 32.3 %). The en bloc, R0 and curative resection rates were 100 % (195/195), 78.5 % (153/195) and 67.2 % (131/195), respectively. The mean rate of ESD was 29.7 mm²/min. One (0.5 %) perprocedural perforation and 7 (3.6 %) postprocedural bleedings occurred, all managed endoscopically. No delayed perforation occurred. Overall, 31 patients (31/195; 15.9 %) of patients developed stenosis.

Conclusions The “tunnel + clip” strategy is safe, and allows to achieve high en bloc, R0 and curative resection rates. This standardized procedure could be used by physicians with little experience and might help spreading esophageal ESD in Western countries.

OP040V TUNNELLING AND CLIP-WITH-LINE TECHNIQUES FOR SUCCESSFUL LONG CIRCUMFERENTIAL ESOPHAGEAL ESD

Authors Falcão D.¹, Alves-Silva J.¹, Archer S.¹, Pedroto I.¹, Marcos-Pinto R.¹, Küttner-Magalhães R.¹

Institute 1 Centro Hospitalar Universitário do Porto, Gastroenterology, Porto, Portugal
DOI 10.1055/s-0042-1744603

A 67-year-old man was referred due to a circumferential 6cm, Paris 0-IIa, type V3 intrapapillary-capillary-loop classification lesion, from 37 to 43cm from the incisors, with biopsies revealing squamous cell carcinoma. Multiple minor Paris 0-IIb + 0-IIc lesions were also observed proximally. Circumferential endoscopic submucosal dissection (ESD) was scheduled. Proximal and distal circumferential mucosal incisions were made. Two contralateral submucosal tunnels were accomplished, leaving two longitudinal lateral bridges. The additional use of clip-with-line technique allowed constant traction of the specimen enabling

dissection of the remaining lateral bridges. A 15cm long specimen was retrieved. We demonstrated that combining tunnelling and clip-with-line techniques enables successful circumferential esophageal ESD.

OP041 LOCAL INJECTION OF TRIAMCINOLONE ACETONIDE WITH SELECTED ADDED ORAL STEROID THERAPY AFTER EXTENSIVE ESOPHAGEAL ESD TO PREVENT STRICTURE: A PROSPECTIVE VALIDATION PROTOCOL IN WESTERN COUNTRIES

Authors Englebert G.¹, Carpentier D.¹, Bucalau A.-M.¹, Verset L.², Demetter P.², Eisendrath P.¹, Devière J.¹, Lemmers A.¹

Institutes 1 CUB Hôpital Erasme, Gastroenterology, Hepatopancreatology and Digestive Oncology, Brussels, Belgium; 2 Jules Bordet Institute, Pathology, Brussels, Belgium
DOI 10.1055/s-0042-1744604

Aims Oral steroid is usually administered in Western countries to prevent post-ESD esophageal stricture after extensive resection. A single local injection of triamcinolone acetonide (TA) at the end of ESD has been demonstrated to be effective for resections comprising 50 to 90 % of circumference in Japan. We aim to assess the efficacy of a systematic preventive stricture protocol for esophageal ESD.

Methods Data from esophageal ESD performed in a tertiary European center from January 2016 to October 2021 were prospectively collected. Local TA injection was systematically done for mucosal defect superior to 50 % circumference with added oral steroid treatment for more than 90 % circumference. Early surgery and post-RFA strictures cases were excluded from the analysis. Symptomatic 28 days stricture rate was evaluated.

Results 92 consecutive patients underwent 105 esophageal ESDs. A median specimen size of 40 [10-130]mm was associated to a 99 % en-bloc and 80 % R0 resection rate. Circumference resection extension reached less than 50 % (50 ESDs), 50 to 90 % (48 ESDs) or more than 90 % (7 ESDs). Follow-up was available in 91 patients after a median of 599 days [29-1912]. Post-ESD esophageal strictures reached 8.6 %, 16 % and 20 % for global, more than 50 % and 75 % circumference, respectively. Two patients presented refractory strictures. No adverse events were noted after TA injection.

Conclusions Our systematic preventive protocol after esophageal ESD led to a very low stricture rate, even after extensive resections. Being a single local treatment, it appears beneficial to use this strategy

OP042V THE RECONSTRUCTION OF ESOPHAGUS WITH DOUBLE ENDOSCOPY TECHNIQUE FOR TREATMENT OF TOTAL ESOPHAGEAL STENOSIS (4CM) SECONDARY TO RADIOTHERAPY

Authors Aslan F.¹, Ak A.B.¹, Celik G.¹, Manici M.², Kahraman A.³

Institutes 1 Koc University Hospital, Gastroenterology, Istanbul, Turkey; 2 Koc University Hospital, Anesthesiology and Reanimation, Istanbul, Turkey; 3 Acibadem Universitesi, Gastroenterology, Kayseri, Turkey
DOI 10.1055/s-0042-1744605

72-year-old patient presented with laryngeal carcinoma history treated with radiotherapy. The patient was planned to assess with endoscopy for dysphagia, but it was unable to see distal to esophagus. Percutaneous-gastrostomy was placed to provide feeding.

The reconstruction procedure was planned. PEG tube was removed. Nasal-endoscope was entered from PEG-orifice to approach the stenosis from retrograde under fluoroscopy. The standard-endoscope used to reach to stenosis from oral-side. The light of the standard-endoscope was turned-off. The transillumination path of the retrograde endoscope was followed and under fluoroscopy, endoscopic-knife incision was made to reach esophageal-lumen from oral-side to distal esophagus. Then, the stenotic segment was dilated. Afterwards, stent was placed at the stenotic segment

OP043V TOGETHER WE STAND FOR TOUGH LOCALIZATION; ENDOSCOPIC SUBMUCOSAL DISSECTION TREATMENT OF EARLY STAGE ESOPHAGEAL CARCINOMA

Authors Aslan F.¹, Gokler O.², Ak A.B.¹, Taskin O.C.³, Gokce K.¹, Manici M.⁴
Institutes 1 Koc University Hospital, Gastroenterology, Istanbul, Turkey; 2 Koc University Hospital, Head and Neck Surgery, Istanbul, Turkey; 3 Koc University Hospital, Pathology, Istanbul, Turkey; 4 Koc University Hospital, Anesthesiology and Reanimation, Istanbul, Turkey
DOI 10.1055/s-0042-1744606

A 40-year-old female patient evaluated with endoscopy for reflux symptoms that are refractory to PPI treatment. On endoscopy there was a 5cm in diameter flat undyed area at upper-esophagus starting from hypopharynx and involving bilateral pyriform-sinuses. On CT and endoscopic-ultrasonography, there was no pathological lymph node and invasion the muscularis propria observed. Patient was treated with ESD on a joint operation with head-neck-surgeon. During procedure, the submucosal tunnels was made starting from both pyriform-sinuses and the rest of the submucosal dissection was completed with traction provided with laryngoscope. The lesion was externalized upon en-bloc removal. The lesion was reported as intramucosal carcinoma with clear all-margins.

AI for colorectal polyps and IBD 13:30-14:30
Thursday, 28 April 2022 Club E

OP044 EFFICACY OF A COMPUTER AIDED DETECTION (CADE) SYSTEM IN A FIT-BASED ORGANIZED COLORECTAL CANCER SCREENING PROGRAM: A RANDOMIZED CONTROLLED TRIAL

Authors Di Paolo D.^{1,2}, Rondonotti E.¹, Paggi S.¹, Rosa Rizzotto E.³, Alvisi C.⁴, Buscarini E.⁵, Spadaccini M.^{6,7}, Tamanini G.¹, Amato A.¹, Scardino G.¹, Mandelli G.¹, Lenoci N.¹, Terreni N.¹, Romeo S.⁸, Alicante S.⁵, Ancona F.³, Guido E.³, Marzo V.⁴, Chicco F.⁴, Agazzi S.⁴, Repici A.^{6,7}, Ambrosini L.⁹, Filippi E.⁹, Sassatelli R.¹⁰, Sereni G.¹⁰, Khalaf K.⁷, Hassan C.^{6,7}, Radaelli F.¹
Institutes 1 Valduce Hospital, Gastroenterology Unit, Como, Italy; 2 Foundation IRCCS Ca' Granda Ospedale Maggiore Policlinico, Department of Gastroenterology and Hepatology, Milan, Italy; 3 St. Antonio Hospital, Azienda Ospedaliera Universitaria, Padova, Italy; 4 ASST Pavia, USD Endoscopia Digestiva, Pavia, Italy; 5 Azienda Ospedaliera "Ospedale Maggiore", Gastroenterology Unit, Crema, Italy; 6 Humanitas University, Department of Biomedical Sciences, Pieve Emanuele, Italy; 7 Humanitas Research Hospital – IRCCS, Department of Gastroenterology, Rozzano, Italy; 8 Azienda Ospedaliera "Ospedale Maggiore", Crema, Italy; 9 Valduce Hospital, Pathology Department, Como, Italy; 10 IRCCS-Arcispedale Santa Maria Nuova, AUSL Reggio Emilia, Reggio Emilia, Italy
DOI 10.1055/s-0042-1744607

Aims Computer Aided Detection (CADE) increases adenoma detection in primary screening colonoscopy. The potential benefit of CADE in FIT-based screening programs, where the prevalence of neoplasia is high, has never been evaluated.

Methods In a multicentre, randomized trial, 50-74 years old subjects undergoing screening colonoscopy, following a positive FIT, were randomized (1:1) to receive high-definition white light (HD-WL) colonoscopy with (study arm) or without (control arm) a real-time deep-learning CADE (CADEYETM Fujifilm Co., Tokyo, Japan). Main outcome measures were ADR (primary outcome), number of adenomas per colonoscopy (APC) and detection rate of advanced adenomas (Advanced-ADR). Subgroup analysis on ADR according to baseline endoscopists' ADR (group 1: <40%, group 2: 41-45%, group 3: >46%) was also performed.

Results Eight hundred subjects (61.2 ± 7.3 years old; 409 men) were included. Of them, 405 underwent CADE-assisted and 395 HD-WL colonoscopy, respectively. ADR and APC were significantly higher in the study arm than in the

control one: ADR: 53.6% vs. 45.3% (RR: 1.180, 95%CI: 1.026-1.361; p=0.019); APC: 1.126 ± 1.540 vs. 0.904 ± 1.320 (p=0.028). No significant difference in advanced-ADR (18.5% vs. 15.9%; p=0.386) was found. An absolute increase in ADR was observed in all endoscopists' groups regardless of baseline ADR.

Conclusions Incorporating the use of a CADE system significantly increases ADR and APC in the framework of a FIT-based CRC screening program. The impact of artificial intelligence appears to be consistent regardless of the endoscopist baseline ADR.

OP045 AI-ASSISTED DETECTION, CHARACTERIZATION AND SIZING OF COLORECTAL POLYPS. CAN AI SUPPORT NON-EXPERT ENDOSCOPISTS TO ACHIEVE PIVI THRESHOLDS? INTERIM RESULTS FROM A PROSPECTIVE MULTI-CENTER INTERNATIONAL TRIAL

Authors Abdelrahim M.¹, Takoh K.², Okuno T.³, Goda S.³, Htet H.¹, Hamson J.¹, Aslam S.¹, Siggins K.¹, Tanasescu A.¹, Sasidharan Nair S.¹, Elias M.¹, Salviato A.¹, Mohammed S.⁴, Parra-Blanco A.⁵, Ishaq S.⁶, Antonelli G.⁷, Fraile-López M.⁸, Spadaccini M.⁹, Subramaniam S.¹, Longcroft-Wheaton G.¹, Alkandari A.¹⁰, Hassan C.⁹, Repici A.⁹, Bhandari P.¹
Institutes 1 Portsmouth Hospitals University NHS Trust, Gastroenterology and Endoscopy, Portsmouth, United Kingdom; 2 NEC Corporation, Engineering and Program Office, Tokyo, Japan; 3 NEC Corporation, Medical AI Research, Tokyo, Japan; 4 Airedale General Hospital, Gastroenterology, Keighley, United Kingdom; 5 Nottingham University Hospitals NHS Trust, Gastroenterology and Endoscopy, Nottingham, United Kingdom; 6 The Dudley Group NHS Foundation Trust, Gastroenterology and Endoscopy, Dudley, United Kingdom; 7 Ospedale dei Castelli Hospital, Gastroenterology and Endoscopy, Rome, Italy; 8 Hospital Universitario Central de Asturias, Gastroenterology and Endoscopy, Oviedo, Spain; 9 Humanitas Research Hospital, Gastroenterology and Endoscopy, Milan, Italy; 10 AL Jahra Hospital, Gastroenterology and Endoscopy, Kuwait, Kuwait
DOI 10.1055/s-0042-1744608

Aims Real-time *in-vivo* characterization of colorectal polyps remains limited outside expert centers. Data on AI polyp detection and characterization is promising but accurate sizing remains the missing jigsaw piece. We aimed to study the impact of a novel AI system on non-expert endoscopists' detection, characterization and sizing of colorectal polyps compared to experts.

Methods Prospectively collected endoscopy videos from twelve centers in Europe and Japan were uploaded on a bespoke online platform (Taka-tool). All polyps were histologically proven and sized by three experts. The AI model detects polyps and classifies them as neoplastic/non-neoplastic and diminutive/non-diminutive. We asked Six experts to detect, characterize and size polyps without AI support, and Six non-experts to detect polyps assisted by AI, and to characterize and size polyps without and then with AI.

Results

► Table 1			
Metric	Non experts + AI	Experts	P value
Sensitivity of characterization on EI	95.5 %	92.4 %	>0.5
NPV of characterization on EI	90.8 %	86.7 %	>0.5
Sensitivity of sizing	93.6 %	92.2 %	>0.5
NPV of sizing	93.1 %	92.3 %	>0.5

199 videos (100-polyps) were included. On polyp detection, average sensitivity and specificity of non-experts + AI compared to experts was 96.0 % and 84.6 % compared to 95.7 % and 89.9 % respectively ($p > 0.5$). Non-experts + AI showed superior sensitivity (95.5 % vs 83.3 %) and NPV (90.8 % vs 70.4 %) of characterization on enhanced imaging compared to non-experts alone ($p < 0.5$). On sizing, non-experts + AI achieved accuracy and sensitivity of 84.0 % and 93.6 %, respectively. Experts' characterization and sizing metrics were not significantly different from non-experts + AI.

Conclusions This interim analysis suggests our AI system may support non-experts to perform at experts' level and achieve PIVI-2 threshold (diagnose and leave). Further analysis is underway to understand the impact of the AI system on surveillance interval (PIVI-1). To our knowledge, this is the first report incorporating AI-assisted sizing with detection and characterization.

OP046 A COMPUTER-ASSISTED AUTOMATED APPROACH FOR OPTICAL CLASSIFICATION OF COLORECTAL POLYPS INCLUDING SERRATED ADENOMAS – THE CASSANDRA STUDY

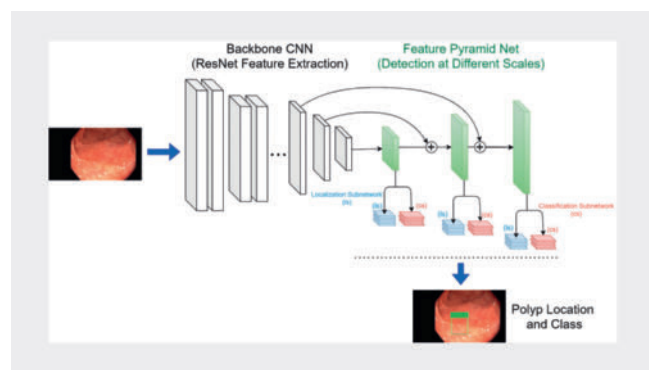
Authors Klare P.^{1,2}, Soberanis-Mukul R.D.³, Haller B.⁴, Walter B.⁵, Rath T.⁶, Albarquoni S.³, Navab N.³, Poszler A.¹, Schmid R.M.², Zvereva A.-M.²

Institutes 1 Krankenhaus Agatharied, Abteilung Gastroenterologie, Diabetologie und Hämato-/Onkologie, Hausham, Germany; 2 Klinikum rechts der Isar der Technischen Universität München, Klinik und Poliklinik für Innere Medizin II, Munich, Germany; 3 Technische Universität München, Chair of Computer Aided Medical Procedures and Augmented Reality, Garching, Germany; 4 Klinikum rechts der Isar der Technischen Universität München, Institut für Medizinische Informatik, Statistik und Epidemiologie, Munich, Germany; 5 Universitätsklinikum Ulm, Innere Medizin I, Ulm, Germany; 6 Universitätsklinikum Erlangen, Medizinische Klinik 1, Erlangen, Germany

DOI 10.1055/s-0042-1744609

Aims Computer-assisted models (CAM) aim to differentiate neoplastic and non-neoplastic polyps based on their optical features. However, differentiation of serrated adenomas (SA) from hyperplastic polyps (HP) and adenomas (AD) is still challenging. We aspired to develop a CAM for automated polyp classification between said polyp classes.

Methods Polyps of 250 patients were resected. Histological diagnoses were used as reference standard. A total of 489 videos of 327 polyps were recorded. Of these, 191 videos were used for CAM development. CAM corresponds to a region proposal deep neural network based on the RetinaNet architecture trained for recognizing the three classes (Figure 1). After development, 100 new polyps were presented to CAM in order to test the program. The 100 test polyps were also presented to two experts (E1, E2). We compared CAP-based and human accuracy. Primary endpoint of the study was CAM-based accuracy.



► Fig. 1

Results

► Table 1

Factor	Computer	Expert 1	Expert2
Sensitivity for SA	6.7 % (1/15)	60.0 % (9/15)	60.0 % (9/15)
NPV for SA	85.9 % (85/99)	90.8 % (59/65)	91.9 % (68/74)
Specificity for SA	100.0 % (85/85)	69.4 % (59/85)	80.0 % (68/85)
PPV for SA	100.0 % (1/1)	25.7 % (9/35)	34.6 % (9/26)

CAM-based accuracy regarding the prediction of SA was 86.0 %. Sensitivity and negative predictive value (NPV) were 6.7 % and 85.9 %. CAM-based accuracy of SA prediction was higher compared to E1 (86.0 % vs. 68.0 %, $p = 0.004$). For adenoma prediction CAM-based accuracy, sensitivity and NPV was 57.0 %, 96.0 % and 81.8 %. Experts accuracies for adenoma prediction surpassed CAM-based accuracy ($p = 0.001$ respectively). Inter-rater agreement of optical predictions was good between both experts (72 % agreement $k = 0.58$).

Conclusions An automated, computer assisted differentiation of SA from HP or AD is feasible. However, differentiating three different polyp classes seems to pose challenges to the CAM approach. More video data is needed in order to refine the CAM.

OP047 A PROSPECTIVE STUDY OF REAL-TIME COMPUTER-AIDED CHARACTERIZATION FOR COLORECTAL LESIONS -DIAGNOSTIC PERFORMANCE AND IMPACT ON HUMAN DIAGNOSIS-

Authors Misawa M.¹, Kudo S.-e.¹, Miyata Y.¹, Minegishi Y.¹, Mori Y.^{1,2}, Nakamura H.¹, Maeda Y.¹, Ichimasa K.¹, Kudo T.¹, Wakamura K.¹, Miyachi H.¹, Ishida F.¹

Institutes 1 Showa University Northern Yokohama Hospital, Digestive Disease Center, Yokohama, Japan; 2 University of Oslo, Clinical Effectiveness Research Group, Institute of Health and Society, Faculty of Medicine, Oslo, Norway

DOI 10.1055/s-0042-1744610

Aims Recently artificial intelligence assisted computer-aided diagnosis (CADx) is catching attention. The aim of this study was to clarify newly developed CADx's performance and how does AI output affect human diagnosis, in a prospective study.

Methods This was a single-center prospective study conducted between July and September 2021. Patients aged ≥ 40 years who were scheduled for colonoscopy were included. Patients with prior polyp information, polyposis, inflammatory bowel disease, were excluded. The developed CADx system can output three tiers pathological prediction (hyperplastic, sessile serrated lesion [SSL], and adenoma) by analyzing still narrow-band imaging (NBI) image. When the endoscopists found the lesions, endoscopists obtained AI's prediction by capturing still NBI image. The outputs of the CADx and endoscopists' own diagnosis taking into account AI's output were recorded. The main outcome was diagnostic performance of CADx. We also calculated the agreement rate of CADx output and endoscopists' own diagnosis.

Results A total of 429 lesions from 282 pts who met the criteria were included in the analysis. The median size of the lesions was 4 mm. Of them, 274 were pathologically diagnosed as adenomas, 43 lesions were SSLs, and 112 lesions were non-neoplasms. The sensitivity, specificity, NPV, and accuracy of NBI-CADx for neoplasms (adenoma + SSL) were 93.8 %, 70.0 %, 91.7 %, and 81.9 %. The agreement rate of CADx and endoscopists' diagnosis was 90.9 %.

Conclusions Although endoscopists did not always follow the AI, the use of accurate AI may not need accreditation that allows optical biopsy.

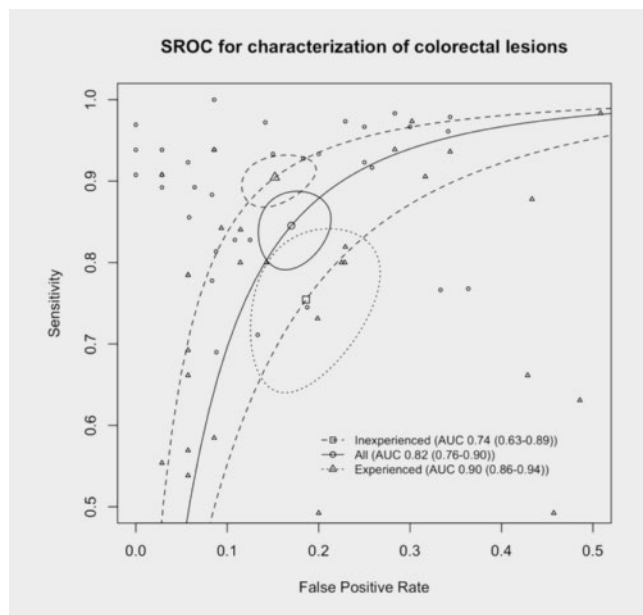
OP048 ENDOSCOPIST PERFORMANCE IN OPTICAL DIAGNOSIS OF COLORECTAL POLYPS IN ARTIFICIAL INTELLIGENCE STUDIES

Authors Pecere S.¹, Antonelli G.², Dinis-Ribeiro M.^{3,5}, Mori Y.⁴, Hassan C.⁵, Fuccio L.⁶, Bisschops R.⁷, Costamagna G.¹, Ji E.H.⁸, Lee D.⁸, Misawa M.⁴, Messmann H.⁹, Iacopini F.², Petruzzello L.¹, Repici A.¹⁰, Saito Y.¹¹, Sharma P.¹², Yamada M.¹¹, Spada C.¹³, Frazzoni L.⁶

Institutes 1 Digestive Endoscopy Unit, Fondazione Policlinico Universitario A. Gemelli IRCCS, Rome, Italy; 2 Gastroenterology and Digestive Endoscopy Unit, Ospedale dei Castelli Hospital, Rome, Italy, Rome, Italy; 2 CIDES/ CINTESIS, Faculty of Medicine, University of Porto, Porto, Portugal, Porto, Portugal; 3 Digestive Disease Center, Showa University Northern Yokohama Hospital, Yokohama, Japan, Yokohama, Japan; 4 Department of Biomedical Sciences, Humanitas University; 5 Humanitas Clinical and Research Center – IRCCS, Milano, Italy; 6 Department of Medical and Surgical Sciences (DIMEC), University of Bologna, S. Orsola-Malpighi Hospital, Bologna, Italy, Bologna, Italy; 7 University Hospitals Leuven, Department of Gastroenterology and Hepatology, TARGID, KU Leuven, Belgium, Leuven, Belgium; 8 Department of Internal Medicine, Healthcare Research Institute, Seoul National University Hospital Healthcare System Gangnam Center, Seoul, Korea, Seoul, Korea, Republic of; 9 III Medizinische Klinik, Universitätsklinikum Augsburg, Augsburg, Germany; 10 Department of Biomedical Sciences, Humanitas University; 11 Humanitas Clinical and Research Center – IRCCS, Milan, Italy; 12 Endoscopy Division, National Cancer Center Hospital, Tokyo, Japan., Tokyo, Japan; 13 Department of Gastroenterology and Hepatology, University of Kansas Medical Center, Kansas City, KS, Kansas City, United States; 14 Centre for Endoscopic Research Therapeutics and Training (CERTT), Università Cattolica del Sacro Cuore, Rome, Italy
DOI 10.1055/s-0042-1744611

Aims Widespread adoption of optical diagnosis of colorectal neoplasia is prevented by suboptimal endoscopist performance and lack of standardized training and competence evaluation.

We aimed to assess diagnostic accuracy of endoscopists in optical diagnosis of colorectal neoplasia in the framework of artificial intelligence(AI) validation studies.



► Fig. 1

Methods Literature searches of databases(PubMed/MEDLINE, EMBASE, Scopus) up to April 2021 were performed to identify articles evaluating accuracy of individual endoscopists in performing optical diagnosis of colorectal neoplasia within studies validating AI against a histologically verified ground-truth. The main outcomes were endoscopists' pooled sensitivity, specificity, positive and negative predictive value(PPV/NPV), positive and negative likelihood ratio(LR) and area under the curve(AUC for sROC) for predicting adenomas vs non-adenomas.

Results Six studies with 67 endoscopists and 2085(IQR: 115-243,5) patients were evaluated. Pooled sensitivity and specificity for adenomatous histology was respectively 84.5 % (95 % CI 80.3-88 %) and 83 % (95 % CI 79.6-85.9 %), corresponding to a PPV, NPV, LR +, LR- of 89.5 % (95 % CI 87.1-91.5 %), 75.7 % (95 % CI 70.1-80.7 %), 5 (95 % CI 3.9-6.2 %) and 0.19 (95 % CI 0.14-0.25 %). The AUC was 0.82 (CI 0.76-0.90). Expert endoscopists showed a higher sensitivity than non-experts (90.5 %, [95 % CI 87.6-92.7 %] vs. 75.5 %, [95 % CI 66.5-82.7 %], $p < 0.001$), and Eastern endoscopists showed a higher sensitivity than Western (85 %, [95 % CI 80.5-88.6 %] vs. 75.8 %, [95 % CI 70.2-80.6 %]). Quality was graded high for 3 studies and low for 3 studies.

Conclusions We show that human accuracy for diagnosis of colorectal neoplasia in the setting of AI studies is suboptimal. Educational interventions should especially target Western endoscopists and could benefit by AI validation settings.

OP049 A NOVEL COMPUTER-AIDED DETECTION (CADE) MODEL FOR NEOPLASIA DETECTION IN INFLAMMATORY BOWEL DISEASE. THE BEGINNING OF THE END OF CHROMOENDOSCOPY?

Authors Abdelrahim M.¹, Iwadata Y.², Maeda N.³, Htet H.¹, Siggins K.¹, Aslam S.¹, Bhandari P.¹

Institutes 1 Portsmouth Hospitals University NHS Trust, Gastroenterology and Endoscopy, Portsmouth, United Kingdom; 2 NEC Corporation, Biometrics Research Laboratories, Kawasaki, Japan; 3 NEC Corporation, Medical AI Research, Tokyo, Japan

DOI 10.1055/s-0042-1744612

Aims IBD neoplasia is often subtle and easily missed, hence chromoendoscopy is recommended. CAde showed promising results in neoplasia detection in non-IBD patients. However, data on its use for neoplasia detection in IBD is lacking. We aimed to develop and validate a dedicated CAde system for neoplasia detection in IBD and compare it with an existing generic CAde system used on IBD colons.

Methods The IBD-dedicated CAde model (ResNet-101 architecture) was trained on 13,054 endoscopic images. Ground truth for detection was expert review and histological confirmation of lesions. Both generic and IBD-dedicated CAde models, with similar threshold value for lesion detection of 0.5, were tested on an independent dataset of 478 prospectively collected endoscopic images and videos obtained from real-time endoscopic assessment of IBD patients and compared using unpaired t test.

Results

► Table 1

Metric	Generic CAde	IBD-dedicated CAde	P value
Sensitivity	71.7 %	93.6 %	<0.05
Specificity	72.5 %	68.8 %	>0.05

The existing generic model achieved a sensitivity and specificity for neoplasia detection of 71.7 % and 72.5 %, respectively. The IBD-dedicated model achieved sensitivity and specificity for neoplasia detection of 93.6 % and 68.8 %, respec-

tively. AUC of the IBD-dedicated model was 0.937. Sensitivity of the IBD-dedicated model was significantly better than the generic model ($p < 0.05$).

Conclusions Our data demonstrates the feasibility of CAdE-assisted neoplasia detection in IBD colons. It also suggests existing generic CAdE systems may not be suitable in this context. To our knowledge, this is the first report describing development and validation of a dedicated CAdE system for neoplasia detection in IBD. This CAD model will be further developed and validated to assess its performance on real-time endoscopic assessment.

Accessing the gallbladder and bile duct

13:30-14:30

Thursday, 28 April 2022

Club H

OP050 ENDOSCOPIC ULTRASOUND-GUIDED CHOLECYSTOSTOMY VERSUS PERCUTANEOUS CHOLECYSTOSTOMY IN THE TREATMENT OF ACUTE CHOLECYSTITIS: A SYSTEMATIC REVIEW AND META-ANALYSIS

Authors Candido Hemerly M.¹, Henrique Boraschi Vieira Ribas P.¹, Lira de Oliveira V.¹, Yuki Yvamoto E.¹, Mendonça Proença I.¹, Silvino do Monte Junior E.¹, Marques Bernardo W.¹, Turiani Hounreux de Moura D.¹, Guimarães Hounreux de Moura E.¹

Institute 1 Hospital das Clínicas, University of São Paulo School of Medicine, Gastroenterology, São Paulo, Brazil

DOI 10.1055/s-0042-1744613

Aims Surgical cholecystectomy is the gold standard strategy for treatment of Acute cholecystitis (AC). However, some patients are considered unfit for surgery due to their clinical conditions. As such, we sought to compare endoscopic ultrasound-guided gallbladder drainage (EUSGBD) versus percutaneous gallbladder drainage (PTGBD) for patients with AC unfit for surgical approach.

Methods Searches on electronic databases were performed to identify studies comparing EUSGBD versus PTGBD for patients with AC who were unfit for surgery. A subgroup analysis was performed only with studies that used lumen apposing metal stents (LAMS) vs PTGBD. Outcomes included technical and clinical success, adverse events (AEs), recurrent cholecystitis, reintervention and readmission.

Results Eleven studies ($n = 1155$ patients) were included. When compared to PTGBD placement, EUSGBD had comparable results in all the 6 outcomes studied. On the subgroup analysis with comparing LAMS vs PTGBD, the endoscopic approach was associated with lower rates of adverse events (RD = -0.33 (95% CI -0.52 to -0.14 ; $p = 0.0006$), recurrent cholecystitis (-0.05 RD (95% CI -0.09 to -0.02 ; $p = 0.02$) and readmission (-0.36 RD (95% CI -0.70 to -0.03 ; $p = 0.03$). All other outcomes including technical success, clinical success and reintervention were not significantly different between na LAMS versus PTGBD.

Conclusions EUSGBD has similar results when compared to PTGBD for patients unfit for cholecystectomy. However, EUSGBD with LAMS has less adverse events, recurrent cholecystitis and readmission compared to PTGBD. Thus, EUSGBD with LAMS should be the preferable approach for gallbladder drainage for this group of patients.

OP051 LONG-TERM PATENCY AND NEED-FOR-REINTERVENTIONS OF EUS-GUIDED CHOLEDOCODUODENOSTOMY WITH ELECTROCAUTERY-ENHANCED LUMEN APPOSING METAL STENTS: A SINGLE-CENTRE PROSPECTIVE EVALUATION.

Authors Vanella G.¹, Dell'Anna G.¹, Archibugi L.¹, Petrone M.C.¹, Arcidicono P.G.¹

Institute 1 IRCCS San Raffaele Scientific Institute, Pancreatobiliary Endoscopy and Endosonography Division, Pancreas Translational and Clinical Research Center, Milan, Italy

DOI 10.1055/s-0042-1744614

Aims EUS-guided Choledochoduodenostomy (EUS-CD) with electrocautery-enhanced Lumen Apposing Metal Stents (ec-LAMS) is an established alternative for biliary drainage in patients with distal malignant biliary obstruction (dmBO) in whom conventional retrograde drainage fails. However, long-term prospective evaluations are lacking

Methods All consecutive EUS-CD with ec-LAMS performed in a tertiary academic centre between 2017-2021 were included. Patients with follow-up (FU) > 30 days were included for prospective analysis of recurrence rate and reinterventions. Dysfunction-Free Survival (DFS) probability was estimated by Kaplan-Meier statistics.

Results Forty-seven patients (male 57.4%; median age 71 [64-77], 89.4% pancreatic cancer) underwent EUS-CD with ec-LAMS (Hot-Axios, Boston Scientific, Marlborough, US). Mean procedural time was 5 (3-6.2) min. Technical and clinical success were 97.9% and 91.3% respectively. Adverse events were registered in 5 patients (10.6%), including technical/clinical failures. Among 30 prospectively followed patients with > 30 days (median 108 [62-255] days) of FU, 9 (30%) dysfunction cases (8 stones/food impactions and 1 stent migration) were registered. Median time-to-dysfunction was 255 [156-305] days. In almost all cases (8/9, 88.9%) endoscopic reinterventions (stone extraction, LAMS exchange, conversion to ERCP or EUS-hepaticogastrostomy) were successful. 6- and 12-months probability of stent dysfunction was 7.7% and 59% respectively at Kaplan-Meier curve, with an estimated median DFS of 364 (95%CI 255-412) days.

Conclusions As EUS-CD spreads, recurrence might be a frequent long-term issue, comparable to the rate reported for retrograde biliary SEMS. Clinicians should be aware that endoscopic revision is effective and safe in almost all cases. (PROTECT Registry, ClinicalTrials.gov NCT04813055).

OP052 EFFICACY AND SAFETY OF ENDOSCOPIC ULTRASOUND-GUIDED HEPATICO-GASTROSTOMY: A META-REGRESSION ANALYSIS

Authors Binda C.¹, Dajti E.^{1,2}, Cucchetti A.^{2,3}, Coluccio C.¹, Repici A.^{4,5}, Anderloni A.⁴, Ercolani G.^{2,3}, Fabbri C.¹

Institutes 1 AUSL Romagna, Gastroenterology and Digestive Endoscopy Unit, Forlì-Cesena Hospitals, Forlì-Cesena, Italy; 2 Alma Mater Studiorum – University of Bologna, Department of Medical and Surgical Sciences-DI-MEC, Bologna, Italy; 3 AUSL Romagna, Morgagni-Pierantoni Hospital, Forlì, Italy; 4 Humanitas Clinical and Research Center-IRCCS, Division of Gastroenterology, Digestive Endoscopy Unit, Rozzano, Italy; 5 Humanitas University, Department of Biomedical Sciences, Milano, Italy

DOI 10.1055/s-0042-1744615

Aims EUS-guided hepaticogastrostomy (EUS-HGS) is valid option of EUS-guided biliary drainage that has been increasingly used in the last ten years. Aims of the study were to provide a systematic review with meta-analysis and meta-regression of features and outcomes after this procedure.

Methods MEDLINE, Scopus, Web-of-Science, and Cochrane databases were searched for literature pertinent to EUS-HGS. Meta-analysis of proportions and meta-regression of potential modifiers of the main outcome measures were applied. Main outcome measures were technical success rate, intention-to-treat (ITT) clinical success and procedure-related adverse events (AEs).

Results Thirty-eight studies including 1335 patients enrolled were included in the meta-analysis. Malignant biliary obstruction was the underlying cause in almost all (99.6%) cases; the main indications for EUS-HGS were duodenal/papillary invasion (32.6%), surgical altered anatomy (19.4%), and hilar stenosis (19.3%). Pooled technical success of EUS-HGS was 96.8% (95%CI: 95, 97.9; heterogeneity: 0%), the ITT clinical success was 88.3% (95%CI: 84.9, 90.9; heterogeneity: 24.9%) and procedure-related AEs occurred in 11.6% (95%CI: 10, 13.4; heterogeneity: 0%), being cholangitis/sepsis (3%) and bleeding (2.1%) the most frequent. Meta-regression showed that technical success rate was modified by centers' experience (> 4/year), rate of patients with duodenal

invasion. No modifiers of ITT clinical success were identified. The rate of procedure-related AEs was reduced with increasing publication year and the use of dedicated stents.

Conclusions EUS-HGS represents an efficient and safe route for EUS-guided biliary drainage in patients with malignant biliary obstruction. Future studies should address the impact of center experience, patient selection and use of dedicated stents to improve this technique's performance.

OP053 EFFICACY AND SAFETY OF TRANSMURAL EUS-GUIDED GALLBLADDER DRAINAGE: A META-REGRESSION ANALYSIS

Authors Fabbri C.¹, Binda C.¹, Sbrancia M.¹, Dajti E.^{1,2}, Coluccio C.¹, Ercolani G.^{2,3}, Anderloni A.⁴, Cucchetti A.^{2,3}

Institutes 1 AUSL Romagna, Gastroenterology and Digestive Endoscopy Unit, Forlì-Cesena Hospitals, Forlì-Cesena, Italy; 2 Alma Mater Studiorum – University of Bologna, Department of Medical and Surgical Sciences-DI-MEC, Bologna, Italy; 3 AUSL Romagna, Morgagni-Pierantoni Hospital, Forlì, Italy; 4 Humanitas Clinical and Research Center-IRCCS, Division of Gastroenterology, Digestive Endoscopy Unit, Rozzano, Italy
DOI 10.1055/s-0042-1744616

Aims Transmural EUS-guided gallbladder drainage (EUS-GBD) has been increasingly used in the treatment of gallbladder diseases. Aims of the study were to provide a comprehensive meta-analysis and meta-regression of features and outcomes after this procedure.

Methods MEDLINE, Scopus, Web-of-science and Cochrane databases were searched for literature pertinent to trans-mural EUS-GBD up to May 2021. Random-effect meta-analysis of proportions, and meta-regression of potential modifiers of outcome measures considered were applied. Outcome measures were technical success rate, intention-to-treat (ITT) clinical success and procedure-related adverse events (AEs)

Results Twenty-seven articles were identified including 1004 patients enrolled between February 2009 and February 2020.

Acute cholecystitis was present in 98.7 % of cases. Pooled technical success was 98.0 % (95 %C.I.: 96.3, 99.3; heterogeneity: 23.6 %), the ITT clinical success was 95.4 % (95 %C.I.: 92.8, 97.5; heterogeneity: 35.3 %) and procedure-related AEs occurred in 14.8 % (95 %C.I.: 8.8, 21.8; heterogeneity: 82.4 %), being stent mal-function/dislodgment the most frequent (3.5 %). Procedural-related mortality was practically nil. Meta-regression showed that center's experience proxied to ≥ 10 cases/year ameliorated the technical success rate (odds ratio [OR]: 2.84; 95 %C.I.: 1.06, 7.59; $p = 0.038$) and the ITT clinical success (OR: 3.52; 95 %C.I.: 1.33, 9.33; $p = 0.011$). The use of anti-migrating devices also increased the ITT clinical success (OR: 2.16; 95 %C.I.: 1.07, 4.36; $p = 0.031$) while reducing procedure-related AEs (OR: 0.36; 95 %C.I.: 0.14, 0.98; $p = 0.045$).

Conclusions Physicians' experience and anti-migrating devices are the main determinant of main clinical outcomes after EUS-GBD, suggesting that treatment in expert centers would optimize results.

OP054 LONG TERM EFFICIENCY OF EUS GUIDED BILIARY DRAINAGE USING ELECTROCAUTERY ENHANCED LAMS IN CASE OF FAILED ERCP, A LARGE PROSPECTIVE STUDY OF 118 CASES

Authors Albouys J.¹, Redelsperger B.², Legros R.¹, Lepetit H.¹, Dahan M.¹, Rodrigues R.², Brule C.¹, Geyl S.¹, Jacques J.²

Institutes 1 CHU Limoges, Limoges, France; 2 CHU limoges, Limoges, France

DOI 10.1055/s-0042-1744617

Aims EC-LAMS allows EUS guided choledocoduodenostomy in a single step, without prior bile duct puncture or the need for a guidewire when ERCP fails or is unfeasible.

Long term data about this new promising procedure are lacking.

Methods Prospective, observational, single-center study including all EUS guided biliary drainage for distal malignant obstruction with 6 mm EC-LAMS since first case in 2017.

The primary objective was to evaluate the long-term rate of stent dysfunction. The secondary objectives were to evaluate the short and long term technical and clinical outcomes and to identify risk factors for stent dysfunction.

Results 118 ECE-LAMS EUS guided biliary drainage for distal malignant biliary obstruction (pancreatic adenocarcinoma in 77 % of cases) were included. The median bilirubin level before drainage was 277 $\mu\text{mol/L}$ with a median bile duct dilation of 18mm.

Technical success was achieved in 97.43 % of cases, with clinical success in 95.72 % of cases.

The rate of stent dysfunction during the follow-up was 16.10 %, with a significantly increased risk in multivariate analysis for cholangiocarcinoma (OR = 4.6 [1.2-51.4], $p = 0.011$), the presence of a duodenal stent (OR = 4.5 [1.1-15.6], $p = 0.002$) and a bile duct diameter less than 14mm in pre-procedure (OR = 4.395, [1.27-15.16], $p = 0.019$)

Conclusions Our study confirms the high technical and clinical success rate of EUS guided biliary drainage with ECE-LAMS. Rate of stent dysfunction during follow-up was 16 %. A bile duct diameter of less than 14 mm, the presence of a duodenal stent and the presence of a distal cholangiocarcinoma constitute risk factors for stent dysfunction during the follow-up.

OP055 REDUCING HEALTH CARE LOAD DURING THE COVID-19 PANDEMIC: BIODEGRADABLE STENTS MAKE FOLLOW-UP ENDOSCOPIES VANISH

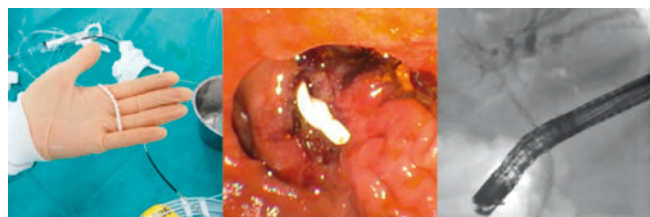
Authors Maieron A.¹, Erhart L.¹, Pramhofer P.¹, Schöfl R.², Spaun G.³, Steiner E.¹, Wewalka F.², Ziahehab A.⁴

Institutes 1 University Hospital St. Pölten, Department of Internal Medicine II, St. Pölten, Austria; 2 Hospital of the Elisabethinen, Department of Internal Medicine IV, Linz, Austria; 3 Hospital of the Elisabethinen, Department of Surgery, Linz, Austria; 4 Kepler University Hospital, Med Campus III., Department of Gastroenterology and Hepatology, Linz, Austria
DOI 10.1055/s-0042-1744618

Aims A major advantage of biodegradable stents is the reduction of follow-up endoscopies for removal. In light of limited interventional and surgical resources due to COVID-19, we used ARCHIMEDES stents (ABPS) for a range of pancreatic and biliary diseases. This study aimed to evaluate technical and clinical safety.

Methods Technical and clinical success, adverse events and device performance for ABPS placed at three Austrian tertiary care hospitals between April 2020 and January 2021 were retrospectively analyzed.

Results 63 stents were deployed in 60 patients (mean age \pm SD: 69 \pm 18 years; 57 % with elevated peri-interventional risk [ASA III-IV]). Main indications were prophylaxis of post-ERCP pancreatitis (PEP; $n = 30$; 49 %) and bridging of prolonged waiting times to cholecystectomy ($n = 21$; 33 %). Mean time to surgery was 53 days (\pm SD: 37 days). The technical success rate was 95 % ($n = 60/63$). Technical failure exclusively occurred with pancreatic stents. Two dislocations into the pancreatic duct resulted in mild pancreatitis, while one stent could not be released. Clinical success was achieved in 92 % ($n = 58/63$). Clinical failures despite successful deployment were caused by migration of a biliary stent into the cystic duct (1 case) and persistent cholestasis (1 case). Both required reintervention. Performance was predominantly rated very good ($n = 27$; 45 %) or good ($n = 30$; 50 %) by endoscopists.



► Fig. 1

► Table 1

	Total (n = 63)	Biliary (n = 32)	Pancreatic (n = 31)
Technical success	60 (95%)	32 (100%)	28 (90%)
Clinical success	58 (92%)	30 (94%)	28 (90%)
Need for reintervention	2 (3%)	2 (6%)	0 (0%)

Conclusions ABPS could become a valuable alternative to traditional stents. For PEP prophylaxis, they help reduce endoscopy load without compromising treatment standards, which is particularly valuable in times of restricted endoscopic resources. Moreover, first insights into feasibility as bridging to cholecystectomy indicate a favorable safety profile.

Colorectal Cancer (CRC) Screening

(WEO-ESGE joint session)

Thursday, 28 April 2022

15:00–16:00
South Halls 2 (A&B)

OP056 COLORECTAL CANCER RISK AND ADENOMA DETECTION RATE IN IMMUNOCHEMICAL FAECAL TEST SCREENING PROGRAMS

Authors Antonelli G.^{1,2}, Zorzi M.³, Battagello J.³, Hassan C.⁴

Institutes 1 Ospedale dei Castelli Hospital, Department of Gastroenterology and Digestive Endoscopy, Rome, Italy; 2 Sapienza University of Rome, Department of Anatomical, Histological, Forensic Medicine and Orthopedics Sciences, Rome, Italy; 3 Azienda Zero, Veneto Tumor Registry, Padova, Italy; 4 Humanitas University, Department of Biomedical Sciences, Rozzano (MI), Italy

DOI 10.1055/s-0042-1744619

Aims Colorectal Cancer (CRC) screening programs based on Faecal Immunochemical Test (FIT) represent the standard of care for population-based intervention. Its benefit depends on identification of neoplasia at colonoscopy in FIT + subjects. Thus, its quality as measured by Adenoma Detection Rate (ADR) may affect its outcomes.

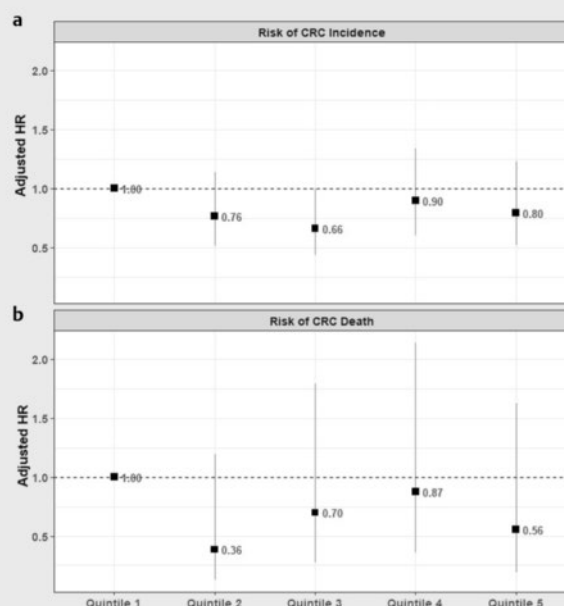
Methods We performed a retrospective cohort study on patients undergoing colonoscopy after FIT + within a CRC-screening program between 2003 and 2017 in Italy. We recovered data on CRC diagnosed and CRC deaths observed between 6 months and 10 years after colonoscopy. Risk of interval-CRC incidence and mortality was assessed according to endoscopists' ADR and advanced-ADR quintiles. Estimation of hazard ratio (HR) was adjusted for sex and age.

Results Overall, we included 68,604 colonoscopies performed by 133 endoscopists. After 295,081 person/years of follow up, 289 interval-CRCs were identified, resulting in 42 CRC-related deaths. Mean ADR was 48% (range 8–87%). When subdividing endoscopists by ADR quintile, unadjusted risk of interval-CRC from lowest to highest was 11.4, 9.7, 7.6, 11.4 and 9.5 per 10,000 person/years

of follow up. No difference in CRC incidence and mortality between endoscopists in the lowest ADR quintile and the highest (aHR for CRC incidence/mortality: 0.80 [95%CI 0.52–1.23]/0.56 [95%CI 0.19–1.62]). Similar findings were observed using advanced ADR quintiles (aHR for CRC incidence/mortality: 1.03 [95%CI 0.67–1.57]/1.49 [95%CI 0.55–4.06]).

► Table 1

	CRC Incidence		CRC Mortality	
Sex				
Female	1.00	–0.95	1.00	–0.63
Male	1.20	–1.53	1.18	–2.20
Age (years)				
50–59	1.00	–1.39	1.00	–0.75
60–70	1.77	–2.27	1.40	–2.60
ADR quintile				
1 st	1.00	–0.51 –1.14	1.00	–0.12 –1.19
2 nd	0.76	0.44 – 1.00	0.39	0.27 – 1.79
3 rd	0.66	0.60 – 1.34	0.70	0.36 – 2.14
4 th	0.90	0.52 – 1.23	0.87	0.19 – 1.62
5 th	0.80		0.56	
AAADR quintile				
1 st	1.00	–0.75 –1.71	1.00	–0.29 –2.83
2 nd	1.13	0.57 – 1.29	0.91	0.19 – 1.88
3 rd	0.86	0.81 – 1.83	0.60	0.61 – 4.31
4 th	1.22	0.67 – 1.57	1.63	0.54 – 4.05
5 th	1.03		1.49	



► Fig. 1

Conclusions The lack of association between ADR and CRC incidence and mortality, as well as the low risk of interval CRC due to incomplete resection, supports the incorporation of colonoscopy resources within a programmatic intervention.

Gastrointestinal cancer: from early diagnosis to management of advanced disease

15:00–16:00

Thursday, 28 April 2022

Club A

OP057V ENDOSCOPIC ULTRASOUND (EUS)-GUIDED REPERMEABILIZATION WITH AN ENTERAL STENT THROUGH A GASTROENTERIC LUMEN-APPPOSING METAL STENT (LAMS) BURIED BY TUMOR OVERGROWTH

Authors [Burgueño B.¹](#), [Chavarria C.¹](#), [Fuentes-Valenzuela E.¹](#), [Sánchez-Ocaña R.¹](#), [De Benito-Sanz M.¹](#), [Carbajo-López A.¹](#), [de la Serna-Higuera C.¹](#), [Perez-Miranda M.¹](#)

Institute 1 Hospital Universitario Río Hortega, Endoscopy Unit, Gastroenterology Department, Valladolid, Spain

DOI 10.1055/s-0042-1744620

EUS guided-gastroenterostomy for unresectable gastric antrum cancer resulted in recurrent gastric outlet obstruction and LAMS dysfunction due to tumor overgrowth 5-months later. A partially-covered duodenal metal stent was placed to clear retained gastric contents and to facilitate enteroclysis. The buried LAMS lumen was punctured under EUS from the stomach, a guidewire passed through the needle into the jejunum, and an enteral covered metal stent deployed OTW across the LAMS. The patient was discharged uneventfully with adequate soft oral intake reinitiating chemotherapy.

EUS-guided stent-in-stent repermeabilization of a delayed buried gastroenteric LAMS because of tumor overgrowth is simple, effective and hitherto unreported.

OP058 MULTI-FEATURE FITTING METHOD OUTPERFORMED DEEP LEARNING METHOD ON DIAGNOSING GASTRIC NEOPLASMS

Authors [Dong Z.¹](#), [Gong D.¹](#), [Wang J.¹](#), [Wu L.¹](#), [Yu H.¹](#)

Institute 1 Renmin Hospital of Wuhan University, Department of Gastroenterology, Wuhan, China

DOI 10.1055/s-0042-1744621

Aims Applying the machine-learning-based multi-feature fitting method to diagnose gastric neoplasms under white light endoscopy. Compare the diagnostic performance of the method with the sole deep-learning-based algorithm.

Methods Retrospectively collected 1,000 gastric images from the Digestive Endoscopy Center of Renmin Hospital of Wuhan University from December 2016 to November 2021, including 500 neoplasms and 500 non-neoplasms. 50 images of each category were used for testing. The mucosal color, Paris classification, whitish deposit (presence or not), contour (clear or not), surface structure (regular or not), spontaneous bleeding (presence or not), background mucosa, and the location of the lesion are selected as key features. The key features of each image were labeled by expert endoscopists. Multiple machine learning models were applied for training and testing. In addition, use deep learning framework to train binary classification model to diagnose gastric neoplasms.

Results In the image test set, the KNN (K-Nearest Neighbor) model showed the best performance. The accuracy, sensitivity, and specificity of the KNN were 81 %, 84 %, and 78 %, respectively. The accuracy, sensitivity, and specificity of the sole deep learning algorithm were 78 %, 80 %, and 76 %, respectively. The performance of the machine-learning-based method was slightly better than deep learning.

Conclusions The multi-feature fitting method is a promising way for improving the interpretability of artificial intelligence systems. The potential of this method had been proved through expert-labeled data. In the future, deep-learning-based feature extraction algorithms can be constructed to make the diagnosis system automatic and efficient.

OP059 ENDOSCOPIC ULTRASOUND-GUIDED FINE NEEDLE BIOPSY IN PATIENTS WITH SUSPECTED GASTRIC LINITIS PLASTICA

Authors [Assaf A.¹](#), [Terris B.¹](#), [Palmieri L.J.¹](#), [Rouquette A.²](#), [Beuvon F.²](#), [Pellat A.³](#), [Abou Ali E.¹](#), [Ginestet C.¹](#), [Belle A.²](#), [Hallit R.²](#), [Dohan A.¹](#), [Chaussade S.¹](#), [Coriat R.¹](#), [Barret M.¹](#)

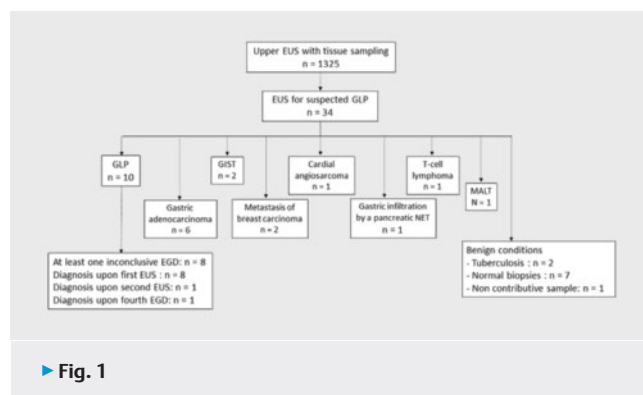
Institutes 1 Faculté de Médecine Paris Centre, Université de Paris/Cochin Hospital, Assistance Publique-Hôpitaux de Paris, Paris, France; 2 Cochin Hospital, Assistance Publique-Hôpitaux de Paris, Paris, France; 3 Faculté de Médecine Paris Centre, Université de Paris/Hôpital Saint Antoine. Assistance Publique-Hôpitaux de Paris, Paris, France

DOI 10.1055/s-0042-1744622

Aims Gastric linitis plastica (GLP) is a diffuse infiltrating type of gastric adenocarcinoma. It is associated with a poor prognosis and a five-year survival of 3-10 %. The infiltrating profile of this tumor explains the low yield of the superficial mucosal biopsies. The objective of this study was to investigate the role of endoscopic ultrasound-fine needle biopsy (EUS-FNB) in the diagnosis of GLP.

Methods We performed a retrospective analysis including all patients who had a EUS-FNB, for suspected GLP, at a tertiary referral center, over the last 3 years. A GLP was suspected based on the presence of a gastric wall thickening, or perigastric lymph nodes on abdominal CT, or gastric stenosis, enlarged gastric folds, or pangastric infiltration on esophagogastroduodenoscopy. The primary outcome was the sensitivity of EUS-FNB in patients with suspected GLP.

Results Between January 2017 and December 2020, 34 patients had a EUS-FNB for suspected GLP. Ten patients had a diagnostic of GLP. This diagnosis was obtained by EUS-FNB in 90 % (9/10) of the cases. Eight patients had at least one previous esophagogastroduodenoscopy (EGD) with negative mucosal biopsies. Gastric EUS-FNB helped diagnose other serious conditions in 47 % (16/34) of cases with inconclusive mucosal biopsies.



► Fig. 1

Conclusions Gastric EUS-FNB in patients with suspected GLP and normal endoscopic mucosal biopsies may lead to a positive diagnosis of GLP in 90 % of cases without notable adverse events. This technique should be considered as a second step in the setting of suspicion of GLP after inconclusive mucosal biopsies.

OP060 EUS AND PET-CT RESTAGING FOR ESOPHAGEAL AND GASTRIC ADENOCARCINOMA.COMPARED PERFORMANCE AND SURVIVAL PREDICTION

Authors Redondo-Cerezo E.¹, Martínez-Cara J.G.¹, Jiménez-Rosales R.¹, Valverde-López F.¹, García-García J.², Amezcua-Hernández V.²

Institutes 1 Virgen de las Nieves University Hospital, Gastroenterology, Granada, Spain; 2 Virgen de las Nieves University Hospital, Oncology, Granada, Spain

DOI 10.1055/s-0042-1744623

Aims Our aim was to study whether EUS and PET-CT restaging can predict survival, and their accuracy when correlated to pathologic results.

Methods We conducted a retrospective study on all patients who underwent EUS for gastric or esophageal junction adenocarcinoma staging between 2010 and 2021. EUS and PET-CT were performed in all patients, who also received preoperative TNM restaging by both procedures within 21 days prior surgery. Disease free survival and overall survival were studied. EUS response to neoadjuvant therapy was studied.

Results 185 patients were included, 139 males (74.7%). EUS overall accuracy for the distinction of T1-T2 vs. T3-T4 tumors after neoadjuvant therapy was 66.7% (95%CI 50.3%-77.8%; kappa: 0.17); for N staging, accuracy was 70.8% (95%CI: 51.8%-81.8%; kappa 0.39). Regarding PET-CT, we found that N positivity showed an accuracy of 60.4% (CI95%: 46.3%-73%, kappa 0.16). In Kaplan-Meier analysis positive lymph nodes on yUN, and in restaging PET-CT significantly correlated with DFS. Multivariate COX regression analysis found that N restaging with EUS and PET-CT, and Charlson score were correlated with DFS. yUN and PET-CT positive lymph nodes were predictors for OS. In multivariate Cox regression analysis only Charlson score, T response by EUS and male sex were independent risks factors for OS.

Conclusions EUS and PET-CT are suboptimal tools, but the most accurate, to determine esophago-gastric cancer stage. Both techniques have the ability to predict survival, considering N staging and response to neoadjuvant therapy evaluated by EUS as the main predictors.

OP061 MAGNIFYING ENDOSCOPY-GUIDED DYE MARKING OF ENDOSCOPIC SUBMUCOSAL DISSECTION SPECIMEN PROVIDES AN ACCURATE METHOD FOR ENDOSCOPIC-TO-PATHOLOGIC EVALUATION OF EARLY GASTRIC CANCER

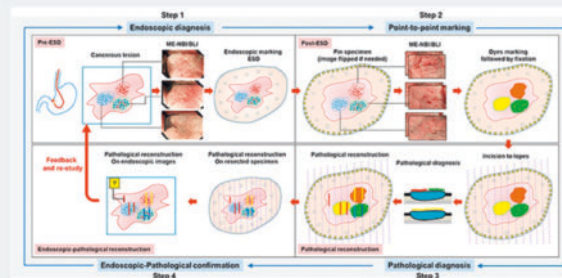
Authors Wang J.¹, An P.¹, Zeng Z.¹, Yu H.¹

Institute 1 Renmin Hospital of Wuhan University, Wuhan, China

DOI 10.1055/s-0042-1744624

Aims There are a lack of precise and comprehensive point-to-point methods to verify the EGC diagnosis in delineating the lateral extent, differentiation and invasion depth between endoscopic and histopathological evaluation. To solve this limitation, we established a dye marking approach on ESD resected specimen guided by magnifying narrow band imaging (ME-NBI) or magnifying blue laser imaging (ME-BLI).

Methods A total of 30 EGC specimens resected by ESD from 25 patients between January 1, 2020, and January 30, 2021, were enrolled in this study. After resection, endoscopists performed ME-NBI/BLI on pinned specimens to determine the cancerous margins, microvascular vessels (MV) and microstructure (MS) pattern changes. By comparing with pre-ESD ME-NBI/BLI images, malignant or suspected fields were confirmed and different color TMDs were carefully marked on resected specimen.



► Fig. 1

Results There were 69 cancerous fields and 51 precancerous fields of all patients of which 68 (98.55%) and 49(96.08%, 95% CI 88.33% to 99.19%) fields were fully detected by post-ESD ME-NBI/BLI. 97.50% of cancerous or precancerous fields detected by pre-ESD ME-NBI/BLI were identified on resected specimen by post-ESD ME-NBI/BLI. 178 out of 180 fields (98.89%) with characteristic MV and 198 out of 201 fields (98.51%) with MS patterns were detected in resected specimen by post-ESD ME-NBI/BLI.

Conclusions We proposed a new endoscopic and pathological co-diagnosis method which provided objective proofs to confirm the correctness of endoscopic diagnosis. TMDs provides indications for pathologists to detect cancerous histopathological proofs. During this feedback and re-study training way, endoscopists are possible to improve their capability in EGC endoscopic evaluation, accumulate important experiences.

OP062 THE COMPARISON OF EFFICACY AND SAFETY OF THE PULL AND PUSH ENDOSCOPIC GASTROSTOMY TECHNIQUES IN CANCER PATIENTS

Authors Kucha P.¹, Szmit M.¹, Żorniak M.^{1,2}, Lipczyński R.¹, Januszewicz W.^{1,2}, Rupiński M.^{1,2}, Kamiński M.F.^{1,2,3}

Institutes 1 The Maria Skłodowska-Curie National Research Institute of Oncology, Department of Gastroenterological Oncology, Warsaw, Poland; 2 Medical Center for Postgraduate Education, Department of Gastroenterology, Hepatology, and Oncology, Warsaw, Poland; 3 University of Oslo, Institute of Health and Society, Oslo, Norway

DOI 10.1055/s-0042-1744625

Aims Percutaneous endoscopic gastrostomy (PEG) is a cornerstone of nutritional support in patients with inadequate oral intake. Two main techniques for PEG placement: peroral “pull” technique and the percutaneous “push” procedure were compared regarding efficacy and safety.

Methods In a single-center retrospective analysis, both procedures were compared regarding technical success, and the rate of complications. Secondary outcomes included complications requiring surgical intervention and 30-day mortality. The risk factors for major PEG-related complications were analyzed using logistic regression model adjusted for patients' sex, age, BMI, diabetes, oncological treatment status (post- vs pre-treatment), cancer location (head and neck[HNC] vs other), and operators' specialty (surgeon vs gastroenterologist).

Results We analyzed 692 PEG procedures performed in 663 patients in 2016-2020 (mean age 61.7 yrs.; 70.3% males; indication: 77.2% HNC/ 22.8% other cancer), of which 40.1% constituted pull-PEGs and 59.9% push-PEGs. The technical success was 96.8% and 98.1% for pull- and push-PEGs, respectively. The push technique had a higher rate of complications overall (31.8% vs 5.1%, $P < .001$, Table 1). After exclusion of tube dislodgement, major complications, complications requiring surgery and mortality rate were not different between the groups. Post-radiotherapy status was associated with increased odds of major complications (OR 2.2 [95%CI:1.0-4.5], $P = .038$).

► Table 1			
	Push-technique (n = 277)	Pull-technique (n = 415)	P-value *
Technical success rate (%)	96.8 %	98.1 %	0.396
Complications – all (%)	88 (31.8 %)	21 (5.1 %)	<0.001
▪ Bleeding	5 (1.8 %)	1 (0.2 %)	
▪ “Buried bumper”	0 (0.0 %)	3 (0.7 %)	
▪ Tube dislodgement	57 (20.6 %)	1 (0.2 %)	
▪ Infection	10 (3.6 %)	5 (1.2 %)	
▪ Leakage	5 (1.8 %)	8 (1.9 %)	
▪ Perforation	2 (0.7 %)	1 (0.2 %)	
▪ Peritonitis	3 (1.1 %)	0 (0.0 %)	
▪ Death	1 (0.4 %)	0 (0.0 %)	
▪ Other	5 (1.8 %)	2 (0.5 %)	
Complications requiring surgical intervention	2.9 %	1.5 %	0.326

* chi-square Test

Conclusions The risk of major complications was comparable between the push- and pull-PEG technique. Due to frequent tube dislodgement in push-PEG, the pull-PEG seems better for long-term feeding. Post-radiotherapy status increased the risk of complications, which suggest early PEG placement when such treatment is expected.

Efficient diagnostic approaches to the small bowel
Thursday, 28 April 2022

15:00–16:00
Club E

OP063 EARLY CAPSULE ENDOSCOPY AND DEVICE-ASSISTED ENTEROSCOPY IN OVERT BLEEDING: A SYSTEMATIC REVIEW WITH META-ANALYSIS

Authors Estevinho M.M.¹, Pinho R.¹, Fernandes C.¹, Rodrigues A.¹, Ponte A.¹, Gomes A.C.¹, Afecto E.¹, Correia J.¹, Freitas T.¹

Institute 1 Vila Nova de Gaia/Espinho Hospital Center, Gastroenterology, Vila Nova de Gaia, Portugal

DOI 10.1055/s-0042-1744626

Aims The best timing for small bowel capsule endoscopy (SBCE) and device-assisted enteroscopy (DAE) for the management of obscure gastrointestinal bleeding (OGIB) remains unknown. This meta-analysis aimed to compare, for the first time, diagnostic and therapeutic yields, detection of active bleeding and vascular lesions, rebleeding, and mortality of “early” versus “non-early” SBCE and DAE.

Methods Three online databases were searched to identify studies comparing “early” versus “non-early” SBCE and DAE. Random effects meta-analysis was performed; reporting quality was also assessed.

Results From 1974 records, 39 were included (4825 patients). Time intervals for the “early” approach varied, until 14 days in SBCE and 72h in DAE. The pooled diagnostic and therapeutic yields of “early” DAE were superior to those

of SBCE (7.97 % and 20.89 %, respectively, $p < 0.05$). The odds for active bleeding (odds ratio [OR] 5.09, $I^2 = 53 %$), positive diagnosis (OR 3.99, $I^2 = 45 %$), and therapeutic intervention (OR 3.86, $I^2 = 67 %$) were higher in the “early” group for SBCE and DAE ($p < 0.01$). Regarding diagnostic yield, subgroup effects existed for the number of patients in the “early” approach. Our study failed to identify differences when studies were classified according to time intervals for early DAE ($I^2 < 5 %$), yet the analysis was limited due to a lack of data availability. Lower rebleeding in “early” SBCE and DAE was observed (OR 0.40, $p < 0.01$, $I^2 = 0 %$).

Conclusions The role of small bowel studies in the early evaluation of OGIB is unquestionable, impacting diagnosis, therapeutic, and prognosis. Comparative studies are still needed to identify the best timings.

OP064 CAPSULE ENDOSCOPY IN PATIENTS WITH MECKEL’S DIVERTICULUM- CLINICAL FEATURES AND DIAGNOSTIC FINDINGS – A EUROPEAN MULTICENTRE STUDY

Authors Baltes P.¹, Dray X.², Riccioni M.E.³, Pérez-Cuadrado-Robles E.⁴, Fedorov E.⁵, Wiedbrauck F.⁶, Chetcuti Zammit S.⁷, Cadoni S.⁸, Bruno M.⁹, Rondonotti E.¹⁰, Wurm Johansson G.¹¹, Mussetto A.¹², Beaumont H.¹³, Perrod G.¹⁴, McNamara D.¹⁵, Plevris J.¹⁶, Spada C.¹⁷, Pinho R.¹⁸, Rosa B.¹⁹, Hervás N.²⁰, Carretero C.²¹, Tontini G.E.²², Keuchel M.¹

Institutes 1 Agaplesion Bethesda Krankenhaus Bergedorf, Hamburg, Germany; 2 Hospital Saint Antoine, Sorbonne University, Paris, France; 3 Fondazione Policlinico Universitario A. Gemelli IRCCS, Rome, Italy; 4 Morales Meseguer Hospital, Murcia, Spain; 5 Moscow University Hospital N31, Pirogov Russia National Research Medical University, Moscow, Russian Federation; 6 Allgemeines Krankenhaus Celle, Celle, Germany; 7 Sheffield Teaching Hospitals, Sheffield, United Kingdom; 8 CTO Hospital, Iglesias, Italy; 9 University Hospital City of Science and Health Turin, Turin, Italy; 10 Valduce Hospital, Como, Italy; 11 Skåne University Hospital, Lund University, Malmö, Sweden; 12 Santa Maria delle Croci Hospital, Ravenna, Italy; 13 Amsterdam University Medical Center, location VU, Amsterdam, Netherlands; 14 Georges Pompidou European Hospital, Paris, France; 15 Tallaght University Hospital, Dublin, Ireland; 16 The Royal Infirmary of Edinburgh, Edinburgh, United Kingdom; 17 Fondazione Poliambulanza, Brescia, Italy; 18 Centro Hospitalar de Vila Nova de Gaia, Vila Nova de Gaia, Portugal; 19 Hospital da Senhora da Oliveira, Guimarães, Portugal; 20 Complejo Hospitalario Navarra, Pamplona, Spain; 21 Clínica Universidad de Navarra, Pamplona, Spain; 22 Fondazione IRCCS Ca’Granda Ospedale Maggiore Policlinico, Milan, Italy
DOI 10.1055/s-0042-1744627

Aims Evaluation of indicative capsule endoscopy (CE) findings in patients with diagnosis of Meckel’s diverticulum (MD) in context of clinical presentation.

Methods Patients with findings suggestive of MD on CE from 2001 until July 2021 were submitted by 22 European Centres. Data was analysed retrospectively.

Results 69 patients with confirmed MD were included. Definite diagnosis of MD following CE was made by surgery (80 %), endoscopy (14 %) or Meckel-Scan (6 %). Mean age was 38.9 (+/- 20.5) years with a male-to-female ratio of 3:1. Gastrointestinal bleeding was the main reason for presentation (59/69 patients, 86 %), mean haemoglobin was 7.7 (+/- 1.8) g/dl with a transfusion rate of 52 %. Typical CE findings were double lumen (71 %), visible entrance of MD (71 %), webs (43 %) and bulges (28 %), showing two or more typical findings in 48/69 patients (70 %). Ulcers in or next to MD were detected in 48 %. Blood was noted in 29 %. A combination of double lumen and visible entrance of MD was evident in 64 %, additionally showing ulcers in 25 patients (36 %). The mean small bowel transit time at which MD was noted was 57 %.

Conclusions Diagnosis of MD may be challenging as MD is rare and no preoperative gold standard investigation exists. Gastrointestinal bleeding, younger age at diagnosis and male gender are clinical factors that may point to the

existence of MD. A double lumen sign and visible entrance of MD are the most frequent CE findings. Additionally, ulcers and blood can be evident at CE. A combination of these findings may support diagnosis of MD.

OP065 SCORE REPRODUCIBILITY AND RELIABILITY IN DIFFERENTIATING SMALL BOWEL SUBEPITHELIAL MASSES FROM INNOCENT BULGES

Authors Sciberras M.¹, Gatt K.¹, Elli L.², Scaramella L.², Riccioni M.E.³, Marmo C.³, Cadoni S.⁴, McAlindon M.⁵, Sidhu R.⁵, Ohara F.⁶, McNamara D.⁶, Rondonotti E.⁷, Piccerelli S.⁸, Spada C.⁸, Bruno M.⁹, Keuchel M.¹⁰, Baltes P.¹⁰, Calleja N.¹, Margalit R.¹¹, Koulaouzidis A.¹², Cortegoso Valdivia P.¹³, de'Angelis G.¹³, Dray X.¹⁴, Ellul P.¹

Institutes 1 Mater Dei Hospital, Medicine, Msida, Malta; 2 Fondazione IRCCS Ca' Granda Ospedale Maggiore Policlinico, Milan, Italy; 3 Fondazione Policlinico Universitario Agostino Gemelli, IRCCS, Università Cattolica del Sacro Cuore, Rome, Italy; 4 Digestive Endoscopy Unit, CTO Hospital, CTO Hospital, Italy; 5 Academic Department of Gastroenterology and Hepatology, Sheffield Teaching Hospitals NHS Foundation Trust, Sheffield, United Kingdom; 6 TAGG Research Centre, Department of Clinical Medicine, Trinity Centre, Tallaght Hospital, Dublin, Ireland; 7 Gastroenterology Unit, Valduce Hospital, Como, Italy; 8 Digestive Endoscopy Unit and Gastroenterology, Fondazione Poliambulanza Istituto Ospedaliero, Brescia, Italy; 9 Gastroenterology and Digestive Endoscopy Unit, "Città della Salute e della Scienza" Hospital, Torino, Italy; 10 Agaplesion Bethesda Krankenhaus BergeDorf, Hamburg, Germany; 11 Institute of Gastroenterology, Sheba Medical Center, Tel Hashomer, Israel; 12 Pomeranian Medical University, Szczecin, Poland; 13 Gastroenterology and Endoscopy Unit, University Hospital of Parma, University of Parma, Parma, Italy; 13 Sorbonne Université, Centre d'Endoscopie Digestive, Hôpital Saint-Antoine, APHP, Paris, France

DOI 10.1055/s-0042-1744628

Aims To assess the reliability, intra- and inter-observer variation of the smooth of the smooth protruding lesions index at capsule endoscopy (SPICE), Mucosal protrusion angle (MPA) and SHYUNG scores in differentiating a subepithelial mass (SEM) from a bulge.

Methods This is a retrospective multicentre study where in patients with intraluminal protrusion findings, the 3 scores were analysed for intra and inter-observer variation by 14 expert SBCE readers. The results of radiological studies, device assisted-enteroscopy and/or surgical findings were analysed.

Results 100 patients with a potential SEM were recruited, with 75 patients having a pathology, the most common being NETs (25.3%), GIST (24%) and adenocarcinoma (6.6%).

The mean SPICE score in patients with SEM was 2.04 vs 1.16 in those without any pathology (AUC 0.74; $p < 0.001$) with a fair intra-observer agreement (Kappa 0.3, $p < 0.001$) and slight inter-observer score agreement (Kappa 0.14, $p < 0.05$). It had a 37.3% sensitivity and 92% specificity in distinguishing between a SEM and bulge.

The sensitivity and specificity of MPA $< 90^\circ$ in distinguishing a SEM from a bulge was 58.7% and 76%, with poor intra-observer ($p = 0.05$) and interobserver agreement ($p = 0.64$). The SHYUNG Score demonstrated a moderate intra-observer (Kappa 0.44, $p < 0.001$) and slight inter-observer reliability (Kappa 0.18 $p < 0.001$). The sensitivity of an elevated SHYUNG score (≥ 4) in identifying a SEM was 18.7% with a specificity of 92.0% (AUC 0.71, $p = 0.002$).

Conclusions Though these scores are easy to use, they have at best slight to moderate intra and inter-observer agreement. Cross-sectional imaging and enteroscopy remain the cornerstone in distinguishing between SEM and bulges.

OP066 NOMENCLATURE AND SEMANTIC DESCRIPTION OF ATROPHIC LESIONS IN SMALL BOWEL CAPSULE ENDOSCOPY: AN INTERNATIONAL DELPHI CONSENSUS STATEMENT

Authors Elli L.¹, Marinoni B.², Baltes P.³, Beaumont H.⁴, Bojarski C.⁵, Branchi F.⁵, Bruno M.⁶, Buchkremer J.⁵, Cadoni S.⁷, Cavallaro F.¹, Chetcuti Zammit S.⁸, Dray X.⁹, Eliakim R.¹⁰, Ellul P.¹¹, Fernandez Urien I.¹², Keuchel M.¹³, Khater S.¹⁴, Kopylov U.¹⁰, Koulaouzidis A.¹⁵, Leenhardt R.⁹, Marmo C.¹⁶, McNamara D.¹⁷, Mussetto A.¹⁸, Nemeth A.¹⁹, Cuadrado Robles E.P.²⁰, Perrod G.¹¹, Rahmi G.¹¹, Riccioni M.E.²¹, Robertson A.²², Rondonotti E.²³, Saurin J.C.²⁴, Sidhu R.⁸, Spada C.²⁵, Toth E.¹⁵, Tontini G.E.²⁶, Triantafyllou K.²⁷, Johansson G.W.²⁸, Rimondi A.²

Institutes 1 Fondazione IRCCS Ca' Granda Ospedale Maggiore Policlinico, Gastroenterology and Endoscopy Unit, Milano, Italy; 2 Università degli Studi di Milano, Post Graduate Specialization in Gastrointestinal Diseases, Milano, Italy; 3 Bethesda Krankenhaus BergeDorf, Hamburg, Germany; 4 Amsterdam Universitair Medische Centra, Amsterdam, Netherlands; 5 Charité – Universitätsmedizin Berlin, Berlino, Germany; 6 "Città della Salute e della Scienza" Hospital, Turin, Italy; 7 CTO Hospital, Iglesias, Italy; 8 Royal Hallamshire Hospital, Sheffield, United Kingdom; 9 Sorbonne Université, Paris, France; 10 Tel Aviv University, Tel Aviv, Israel; 11 Paris University, Paris, France; 12 Complejo Hospitalario de Navarra, Pamplona, Spain; 13 Academic Teaching Hospital of the University of Hamburg, Hamburg, Germany; 14 Hôpital Européen Georges Pompidou, Paris, France; 15 Pomeranian Medical University, Szczecin, Poland; 16 IRCCS Fondazione Policlinico Gemelli, Rome, Italy; 17 Tallaght University Hospital, Dublin, Ireland; 18 Santa Maria delle Croci Hospital, Ravenna, Italy; 19 Lund University, Malmö, Sweden; 20 Morales Meseguer Hospital, Murcia, Spain; 21 Università Cattolica del Sacro Cuore, Rome, Italy; 22 Western General Hospital, Edinburgh, United Kingdom; 23 Valduce Hospital, Como, Italy; 24 CNRS, Villeurbanne, France; 25 Fondazione Poliambulanza, Brescia, Italy; 26 Università degli Studi di Milano, Department of Pathophysiology and Organ Transplantation, Milano, Italy; 27 "Attikon" University General Hospital, Athens, Greece; 28 Karolinska University Hospital Ringgold standard institution, Stockholm, Sweden

DOI 10.1055/s-0042-1744629

Aims Coeliac disease (CD) and serology negative villous atrophy represent growing indications for small bowel capsule endoscopy (SBCE). Uniformity in reporting features of small bowel atrophy in SBCE is missing and the recognition of atrophic signs is variable. In this study we aimed to establish an international Consensus regarding nomenclature and descriptions of the main atrophic lesions.

Methods A Delphi Method Consensus was employed to reach the agreement in a panel of experts in SBCE. The nomenclatures and descriptions of the atrophic lesions were decided in a core group of 10 experts via a question and feedback mechanism. After achieving consensus, four images for each lesion were chosen in a large database of SBCE and agreement on the correspondence between the picture and the definition was evaluated with the same method in a broadened group of 36 experts.

Results Four atrophic lesions were identified: Mosaicism, Scalloping, Folds reduction and Granular mucosa. The core group succeeded in reaching the agreement on the nomenclature and description of these items (Table 1). The consensus in matching the agreed definitions to the proposed set of images was met for Mosaicism (88.9%-1stround), Scalloping (97.2%-1stround) and Folds Reduction (94.4%-1stround), whereas Granular Mucosa failed to achieve a consensus (75.0%-3rdround). Operator expertise in CD SBCE (i.e. upper quartile in numbers of dedicated CD capsules per year) did not influence the identification of atrophic signs.

► Table 1

Nomenclature and Description	Agreement in core group (total no. 10)	Number of rounds
Mosaicism: loss of villous structure with the presence of non-ulcerated, orthogonally converging fissures of the small bowel mucosa	9 out of 10 (90%)	2
Scalloping: presence of multiple incisures on the edge of the small bowel folds (cogwheel appearance)	10 out of 10 (100%)	2
Folds Reduction: flattening of the mucosa with reduction of the folds (<2 field view) in terms of both height and number	10 out of 10 (100%)	2
Granular Mucosa: mucosal surface characterized by multiple small nodules, rough villous architecture and edema of the villi	9 out of 10 (90%)	3

Conclusions For the first time ever, a consensus among 36 experts of SBCE on the most common atrophic lesions frequently found in CD and related conditions was set.

OP067V MOTORIZED SPIRAL ENTEROSCOPE GUIDED BILIARY INTERVENTION FOR RELIEF OF OBSTRUCTIVE JAUNDICE IN PATIENT WITH HEPATICOJEJUNOSTOMY

Authors Achanta C.R.¹, Kinhal S.¹, Imandi V.¹, Singh A.¹

Institute 1 KIMS ICON Hospital, Visakhapatnam, India

DOI 10.1055/s-0042-1744630

A 47-year-old male with hepaticojejunostomy (HJ) done for postcholecystectomy biliary injury 2 years ago, presented with recurrent jaundice, abdominal pain, intermittent fever for three months. Workup showed serum bilirubin-21.7 mg/dL, alkaline phosphatase-347 IU/mL, WBC count-18300/mm³. MRCP showed dilated biliary radicles with HJ site stricture. Motorized spiral enteroscope-guided ERCP was done under general anesthesia. HJ site was identified 50 cm distal to the jejunojejunostomy site. Cholangiogram showed prominent biliary radicles with multiple filling defects. HJ stricture was dilated with a 6 mm balloon, and black pigmented stones were suctioned out. A 7 Fr pigtail plastic stent was placed. He was discharged later.

OP068 TAKE A GLIMPSE TO THE SMALL BOWEL: ASSESSING MUCOSAL HEALING IN CELIAC PATIENTS WITH CAPSULE ENDOSCOPY

Authors Scaramella L.¹, Marinoni B.^{1,2}, Rimondi A.^{1,2}, Tontini G.E.^{1,2}, Penagini R.^{1,2}, Sidhu R.³, Sanders D.S.³, Leffler D.⁴, Chetcuti Zammit S.⁵, Vecchi M.^{1,2}, Elli L.^{1,2}

Institutes 1 Fondazione IRCCS Ca' Granda Ospedale Maggiore Policlinico, Milan, Italy; 2 Università degli Studi di Milano, Milan, Italy; 3 Royal Hallamshire Hospital, Sheffield, United Kingdom; 4 Harvard Medical School, Boston, United States; 5 Mater Dei Hospital, Msida, Malta

DOI 10.1055/s-0042-1744631

Aims Capsule endoscopy (CE) is useful in the management of complicated Celiac Disease (CD). However, its use to monitor treated CD is unclear and small bowel mucosal healing (SBMH) in CD is not usually assessed. The aim of this study was to determine the SBMH of CD patients monitored with CE.

Methods 37 consecutive CD patients (30 females, mean age 47), undergoing multiple CE (at least 2) were enrolled. CE findings, their localization and extension were analyzed.

Results 107 CEs were performed (mean CE per patient 3), follow-up 4 years. Indications were alarming symptoms (42%), refractory Celiac Disease (RCD) (38%), non-adherence to GFD (16%) and persistent anti-transglutaminase antibodies positivity (4%). 80% of CEs were positive; atrophy was the most common finding (79%), mostly represented in duodenum and jejunum (97%). Successive CEs demonstrated a partial SBMH in 19% and a complete SBMH in 21%; 11% of cases presented a worsening of the previous findings, while a stable picture was detected in 49% of cases. Notably, in patients non-adherent to GFD, 53% of CEs were normal and 40% of follow up CEs showed a SBMH over time. In RCD, 49% of CEs showed a partial SBMH after immunosuppressive therapy, usually occurring in a distal to proximal fashion. A single case of lymphoma was detected (incidence: 0.006). There were no major complications.

Conclusions Our data showed that CE is effective and safe in assessing SBMH during CD monitoring. During follow up, half of the patients presents a partial to complete SBMH.

Better, faster, stonger : improving training in endoscopy.

Thursday, 28 April 2022

15:00–16:00

Club H

OP069 A SIMPLE CLINICAL RISK SCORE CAN PREDICT PROCEDURE-RELATED ADVERSE EVENTS IN ERCPs WITH TRAINEE INVOLVEMENT: RESULTS FROM THE INTERNATIONAL MULTICENTER OBSERVATIONAL TIERS STUDY

Authors Voiosu T.A.^{1,2}, Bengus A.¹, Bronswijk M.³, Voiosu A.^{2,1}, Boskoski I.⁴, Balanescu P.², Klarin I.⁵, Smarandache B.⁶, Lyutakov I.⁷, Mateescu R.B.^{1,2}, Wani S.⁸

Institutes 1 Colentina Clinical Hospital, Gastroenterology, Bucharest, Romania; 2 Carol Davila Faculty of Medicine, Internal Medicine, Bucharest, Romania; 3 Imelda Hospital, Gastroenterology, Bonheiden, Belgium; 4 Policlinico Agostino Gemelli, Endoscopy, Rome, Italy; 5 Opcia Bolnica Zadar, Gastroenterology, Zadar, Croatia; 6 Spitalul Clinic I Cantacuzino, Gastroenterology, Bucharest, Romania; 7 University Hospital Tsaritsa Yoanna – ISUL, Gastroenterology, Sofia, Bulgaria; 8 University of Colorado, Gastroenterology, Denver, United States

DOI 10.1055/s-0042-1744632

Aims There are limited data assessing the impact of trainee involvement on ERCP effectiveness and safety. We aimed to validate a simple risk score (Table 1) that includes patient- and procedure-related variables designed to predict adverse events (AEs) in ERCPs with trainee involvement.

► Table 1

Risk factor	Points attributed (a total score > 1 is considered high risk for procedure-related adverse events for ERCPs with trainee involvement)
Native papilla	1 point
Bilirubin > 10mg/dL	1 point
Schutz difficulty ≥ grade 2	2 points
Failure of a previous ERCP attempt	3 points

Methods We conducted a prospective, multicenter, observational study in 5 European training centers evaluating the accuracy of our proposed risk score. Data on consecutive ERCP procedures with trainee involvement was collected using standard forms. Patients were followed for 30 days to accurately assess outcomes and AEs. The primary outcome measure was the rate of procedure-related AE which included any of the following: technical failure, postERCP pancreatitis, bleeding, perforation, death or prolonged hospital stay.

Results Between September 2019 and September 2021 we enrolled 409 ERCP procedures (72% with native papilla) performed by 11 supervisors and 10 trainees. There were 86 (21.2%) AEs in our cohort, with a 30-day mortality rate of 0.7%. There was a significant difference in AE rates (17.1% vs. 27%, $p=0.002$) and technical success rates (93.1% vs 79.9%, $p<0.001$) between high and low-risk procedures. Our score showed a high negative predictive value of 82.9% for AEs. On multivariable analysis, after adjusting for gender, age and indication for ERCP, the risk score was the only predictor of AE, with an OR of 1.38 for each additional risk point ($p=0.006$).

Conclusions The TIERS risk model performed well in a real-life setting and could personalize ERCP training by allowing novice endoscopists to start training in selected, low-risk cases, thus increasing patient safety.

OP070 NEWLY TRAINED ENDOSCOPISTS PERFORM HIGH QUALITY SCREENING COLONOSCOPIES AFTER INTENSIVE TRAINING AND EVEN OUTPERFORM EXPERIENCED GASTROENTEROLOGY CONSULTANTS

Authors Schult A.L.^{1,2,3}, Botteri E.^{1,4}, Hoff G.^{1,2,5}, Holme Ø.^{1,6,7}, Seip B.^{1,8}, Randel K.R.¹, Darre-Næss O.³, Owen T.⁹, Nilsen J.A.³, Nguyen D.H.⁹, Johansen K.¹, de Lange T.^{10,11,12}

Institutes 1 Cancer Registry of Norway, Section for Colorectal Cancer Screening, Oslo, Norway; 2 University of Oslo, Institute of Clinical Medicine, Oslo, Norway; 3 Vestre Viken Hospital Trust Bærum, Department of Medicine, Gjetsum, Norway; 4 Cancer Registry of Norway, Department of Research, Oslo, Norway; 5 Telemark Hospital Trust, Department of Research and Development, Skien, Norway; 6 University of Oslo, Institute of Health and Society, Oslo, Norway; 7 Sørlandet Hospital Trust, Department of Medicine, Kristiansand, Norway; 8 Telemark Hospital Trust, Department of Medicine, Skien, Norway; 9 Østfold Hospital Trust, Department of Medicine, Grålum, Norway; 10 Vestre Viken Hospital Trust Bærum, Department of Medical Research, Gjetsum, Norway; 11 Sahlgrenska University Hospital, Department of Medicine, Mölndal, Sweden; 12 Sahlgrenska Academy, University of Gothenburg, Department of Molecular and Clinical Medicine, Gothenburg, Sweden

DOI 10.1055/s-0042-1744633

Aims High quality performance is essential for patient outcome. The need for colonoscopies is increasing and new endoscopists need to be trained. Most endoscopy trainees are considered colonoscopy competent after 275 procedures. The aim of this study was to investigate whether trainees then achieve similar quality as gastroenterologist consultants.

Methods This cross-sectional study including screening colonoscopies after positive faecal immunochemical test (FIT) or positive sigmoidoscopy performed between 2012 and 2020 at two Norwegian screening centres, compared colonoscopy key performance indicators for trainees immediately after an intensive training consisting of 300 colonoscopies, and consultants. Multivariable logistic and linear regression analyses, adjusting for possible confounders, were performed for the comparison of trainees and consultants. Odds ratios (OR) and regression coefficients with 95% confidence intervals (CI) were reported.

Results In total, 21 trainees performed 6,655 colonoscopies and 17 consultants performed 921 colonoscopies. Trainees had higher cecum intubation rate (OR 1.64, 95%CI 1.09-2.46), higher adenoma detection rate after positive FIT (OR 1.44, 95%CI 1.19-1.75), higher adequate polyp resection rate (OR 1.42, 95%CI 1.14-1.77) and fewer serious adverse events (significant bleedings and

perforations) (OR 0.52, 95%CI 0.27-1.00), than consultants. Trainees' withdrawal time was longer (+2.17 minutes, 95% CI 1.15-3.20). There was no difference in advanced adenoma detection rates, patient reported procedural pain and patient satisfaction.

Conclusions

► Table 1

Quality indicators	Endoscopy trainees	Gastroenterology consultants	Odds ratio (95% confidence interval)
Cecum intubated in 1st colonoscopies per participant, n/N (%)	6,003/6147 (97.7)	749/778 (96.3)	1.64 (1.09–2.46)
Adenoma detected in 1st colonoscopies per participant after FIT n/N (%)	2,414/4,192 (57.6)	253/503 (50.3)	1.44 (1.19–1.75)
Adequate polyp resection, n/N (%)	9,734/10,254 (94.9)	1,122/1,205 (93.1)	1.42 (1.14–1.77)
Significant bleedings and perforations, n/N (%)	43/6655 (0.65)	12/921 (1.30)	0.52 (0.27–1.00)

Our results show that it is feasible to train endoscopists to perform high quality colonoscopies through a limited number of training colonoscopies and that trainees then even surpass experienced consultants on several key performance indicators.

OP071 REAL-TIME COMPUTER AIDED DETECTION-ASSISTED COLONOSCOPY ELIMINATES DIFFERENCES IN ADENOMA DETECTION RATE BETWEEN TRAINEE AND EXPERIENCED ENDOSCOPISTS

Authors Cocomazzi F.¹, Gentile M.¹, Loconte I.², Mileti A.², Paolillo R.², Marra A.¹, Castellana S.³, Mazza T.³, Di Leo A.², Perri F.¹, Biscaglia G.¹

Institutes 1 Casa Sollievo della Sofferenza Hospital, IRCCS, Division of Gastroenterology and Endoscopy, San Giovanni Rotondo, Italy; 2 University of Bari, Section of Gastroenterology, Department of Emergency and Organ Transplantation, Bari, Italy; 3 Fondazione IRCCS Casa Sollievo della Sofferenza, Laboratory of Bioinformatics, San Giovanni Rotondo, Italy

DOI 10.1055/s-0042-1744634

Aims Adenoma detection rate (ADR) is a well-accepted quality indicator of screening colonoscopy. In recent years, artificial intelligence (AI) showed its added value in terms of ADR and adenoma miss rate (AMR). To date, there are no studies evaluating the impact of AI on the performance of trainee endoscopists (TE). Aim of this study was to evaluate whether AI may eliminate any difference in ADR or AMR between TE and experienced endoscopists (EE).

Methods We performed a prospective observational study in 45 subjects referred for screening colonoscopy. A same-day tandem examination was carried out for each patient by a TE with the AI assistance and subsequently by an EE unaware of the lesions detected by the TE. Besides ADR and AMR, we also calculated for each subgroup of endoscopists the adenoma per colonoscopy (APC), the polyp detection rate (PDR), the polyp per colonoscopy (PPC) and the polyp miss rate (PMR). Sub-analyses according to size, morphology and site were performed.

Results ADR, APC, PDR, and PPC of AI-supported TE were 38 %, 0.93, 62 %, 1.93, respectively. The corresponding parameters for EE were 40 %, 1.07, 58 %, 2.22. No significant difference was found for each analysis between the two groups ($p > 0.05$). AMR and PMR for AI-assisted TE were 12.5 % and 13 %. Sub-analyses did not show any significant difference ($p > 0.05$).



► Fig. 1

Conclusions In this monocenter prospective study, AI showed its possible impact on the endoscopists' quality training. In the future, this could result in better efficacy of screening colonoscopy by reducing the incidence of interval or missed cancers.

OP072 CUMULATIVE SUM (CUSUM) ANALYSIS IN THE ASSESSMENT OF TRAINEE COMPETENCE IN EUS-GUIDED TISSUE SAMPLING OF SOLID TUMORS IN THE UPPER GASTROINTESTINAL TRACT

Authors Razpotnik M.¹, Bota S.¹, Urak C.¹, Essler G.¹, Weber-Eibel J.¹, Peck-Radosavljevic M.¹

Institute 1 Department of Internal Medicine and Gastroenterology (IMuG), Hepatology, Endocrinology, Rheumatology and Nephrology and Emergency Medicine (ZAE) with Centralized Endoscopy Service, Klinikum Klagenfurt am Wörthersee, Klagenfurt am Wörthersee, Austria

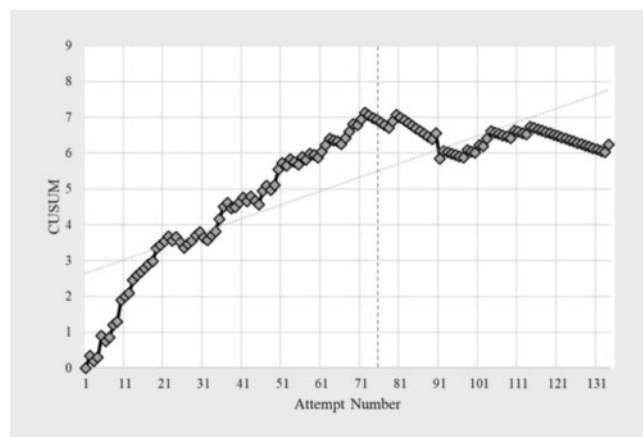
DOI 10.1055/s-0042-1744635

Aims Recently, the European Society of Gastrointestinal Endoscopy proposed a minimum of 250 endosonographic (EUS) and 75 fine-needle aspiration/biopsy (FNA/B) procedures to reach adequate competency. We aimed to assess the learning curve of EUS-FNA/B in solid tumors of the upper gastrointestinal tract.

Methods Consecutive patients undergoing FNA/B of solid pancreatic and non-pancreatic tumors were prospectively enrolled in a single-center (on-site cytopathologist was not available). Four trainees participated in the study, two of them reached the recommended threshold for competency (> 250 EUS, > 75 FNA/Bs) over the study period. The final diagnosis was determined by cytopathology, histopathology, or clinical follow-up. The learning curve was assessed by the cumulative sum analysis.

Results 308 EUS-FNA/Bs of solid tumors (69.2 % malignant) were enrolled in 267 patients (median age 68 years, 60.7 % males): 227 pancreatic, 34 submucosal, 23 lymph nodes, and 24 other tumors. Overall, 19 samples were insufficient (adequacy 93.8 %). The accuracy and sensitivity for detecting malignancy were 217/289 (75.1 %) and 169/213 (79.3 %). After 70 attempts, a downward deviation due to predominantly positive outcomes was observed, indicating the adequate proficiency of the examiners (Fig. 1). Compared to competent endosonographers, there was a significant difference in the duration of the procedure (33.5 vs. 40.4 min, $p < 0.0001$), and numerically lower accuracy for tumors < 20 mm (85.7 % vs. 53.5 %, $p = 0.06$) and sampling via the trans-duodenal route (86.1 % vs. 74.8 %, $p = 0.23$).

Conclusions During the EUS training, at least 70 FNA/B attempts in solid upper gastrointestinal tumors were needed to reach the acceptable level of performance.



► Fig. 1 Cusum analysis for successful EUS-FNA/Bs.

OP073 DEVELOPMENT AND VALIDATION OF THE GLOBAL POLYPECTOMY ASSESSMENT TOOL (GPAT) – A NOVEL ONLINE ASSESSMENT TOOL FOR ANY COLORECTAL POLYPECTOMY

Authors De Crem A.C.P.^{1,2}, Debels L.^{2,1}, Schoonjans C.³, Desomer L.^{4,1}, Anderson J.⁵, Valori R.⁵, Tate D.J.^{2,1}

Institutes 1 University of Ghent, Medicine and Health Sciences, Ghent, Belgium; 2 University Hospital of Ghent, Gastroenterology and Hepatology, Ghent, Belgium; 3 AZ Sint Jan Hospital, Gastroenterology and Hepatology, Bruges, Belgium; 4 AZ Delta Hospital, Gastroenterology and Hepatology, Roeselaere, Belgium; 5 Cheltenham General Hospital, Gastroenterology and Hepatology, Cheltenham, United Kingdom

DOI 10.1055/s-0042-1744636

Aims Colorectal polypectomy is commonly incomplete with high variability between endoscopists resulting in interval cancer or repeated procedures. Existing scores for polypectomy technique are cumbersome and difficult to use. We developed a user-friendly online assessment tool for any colorectal polypectomy: the Global Polypectomy Assessment Tool (GPAT). We aimed to validate GPAT with endoscopists of varied experience.

Methods GPAT was developed using statements derived from a Delphi-consensus between 11 internationally recognized polypectomy experts. The score has 20 items (Fig. 1), calculates a complexity and overall quality score. Evidence-based statements and explanatory videos enhance its reliability. We included nine endoscopic-view videos of polypectomies (small/large polyps and hot/cold snare), recruited twelve international assessors via email (4 gastroenterologists, 3 trainee-gastroenterologists, 2 surgeons, and 3 medical students) and assessed GPAT's validity through demonstrating the inter-rater agreement (Fleiss Kappa-value (κ)). The assessors watched a 2 minute 37 second GPAT-explaining video.

Table 1: Components of GPAT (20)	
CATEGORIES	
Global competencies (4)	<ul style="list-style-type: none"> - Tip control - Fully appreciates/demonstrates extent of the polyp to be resected - Positioning with respect to the polyp - Technique selected is appropriate for the polyp resected?
Injection Technique (3)	<ul style="list-style-type: none"> - Correct Plane - Dynamic Injection - Lesion Access improved
Snare Placement Technique (4)	<ul style="list-style-type: none"> - Stable 6 o'clock position - Stable position with lesion at 6 o'clock OR transformed to 6 o'clock - Snare visualised during placement and closure - Residual islands avoided if piecemeal resection OR macroscopically complete if en-bloc resection attempted
Safety Checks (Hot Snare only) (2)	<ul style="list-style-type: none"> - Checks mobility in relation to deeper structures prior to resection - Lifts the snare away from the mucosal surface prior to activation of diathermy
Defect Assessment (4)	<ul style="list-style-type: none"> - Looks for, detects and removes residual at margin and within defect - Thermal ablation of the POST EMR margin - Looks for, detects and treats any bleeding vessels within the defect - Looks for, detects and treats Deep Mural Injury (≥ Type 2 on the Sydney Classification)
Accessory Techniques (3)	<ul style="list-style-type: none"> - Appropriate placement of clips - Appropriate use of Polyp Retrieval device - Appropriate use of the coagulation grasper

► Fig. 1

Results We analyzed 108 GPAT-assessments of 12 assessors and demonstrated moderate agreement for the target population (the gastroenterologists and trainee-gastroenterologists) for both GPAT and the SMSA-score. Surgeons and medical students demonstrated fair agreement. (Table 1) Positive feedback was received regarding content and ease of use.

► Table 1 Mean inter-observer agreement for all videos.

	SMSA (κ , 95 %C.I.)	GPAT (κ , 95 %C.I.)
Gastroenterologists	0.415 [0.095-0.735]	0.413 [0.348-0.478]
Trainees	0.518 [0.043-0.993]	0.460 [0.360-0.560]
All assessors	0.417 [0.327-0.506]	0.400 [0.379-0.422]

Conclusions This validation demonstrates standardized scoring of colorectal polypectomy video quality and difficulty with moderate inter-observer agreement amongst a varied panel of gastroenterologists and trainee-gastroenterologists with similar agreement found for the broadly used SMSA-score. With further study, GPAT may allow standardized assessment of trainees' polypectomy competency with feedback on performance, demonstration of improvement over time and a method to accredit endoscopists in different levels of polypectomy.

OP074 A NOVEL ONE-DAY VIRTUAL-LIVE HYBRID TRAINING COURSE IS FEASIBLE AND HAS A POSITIVE IMPACT ON COLONOSCOPY KEY PERFORMANCE INDICATORS OF EXPERIENCED ENDOSCOPY TRAINEES

Authors Krott L.¹, Debels L.¹, Schoonjans C.², Anderson J.³, Valori R.³, Desomer L.⁴, Tate D.¹

Institutes 1 Universitair Ziekenhuis Gent, Gent, Belgium; 2 AZ St Jan, Brugge, Belgium; 3 Gloucestershire Hospitals NHS Foundation Trust, Gloucestershire, United Kingdom; 4 AZ Delta, Roeselare, Belgium
DOI 10.1055/s-0042-1744637

Aims Colonoscopy is a complex practical skill and highly operator dependent. The consistent attainment of key performance indicators (KPIs) depends primarily upon training. Training can be unstructured and contingent upon the observed practice of a small number of trainers. We sought to demonstrate the feasibility and impact of a one-day virtual-live colonoscopy-training course with remote, experienced trainers.

	Pre N=33	95% CI	Post N=27	95% CI	Total N=60	95% CI	P
CIR N(%)	30 (91%)	76.4-96.9%	26 (96%)	81.7-99.3%	56 (93%)	84.1-97.4%	0.386
ADR (%)	39%	24.7-56.3%	63%	44.2-78.5%	50%	37.7-62.3%	0.069
Doctor-reported Gloucester Comfort Score (GCS) >3	6 (18%)	8.6-34.4%	3 (11%)	3.9-28.1%	9 (15%)	8.1-26.1%	0.495
Nurse-reported GCS >3	7 (22%) (N=32)	11.0-38.8%	2 (8%) (N=26)	2.1-24.1%	9 (16%) (N=58)	8.4-26.9%	0.131
Patient-reported VAS >2 during colonoscopy	22 (67%)	49.6-80.3%	15 (56%)	37.3-72.4%	37 (62%)	49.0-72.9%	0.379
Patient reported more pain than expected	13 (45%) (N=29)	28.4-62.5%	8 (32%) (N=25)	17.2-51.6%	21 (39%) (N=54)	27.0-52.2%	0.335

► Fig. 1

Methods 6 endoscopy trainees underwent a one-day course involving training by consciously competent colonoscopists who were physically remote. The intervention comprised 5 interactive sessions on colonoscopy theory combined with 6 live sessions, where trainees performed colonoscopy in their local endoscopy unit, receiving real-time instruction and performance enhancing feedback via a tele-conference monitor. KPIs were assessed on trainee-performed colonoscopies for 3 weeks prior and 4 weeks after the training. Qualitative trainee and trainer feedback regarding the course was obtained.

Results 6 experienced colonoscopy trainees (median 26 months prior-training) underwent the intervention. Trainees performed 60 colonoscopies, (33 pre-, and 27 post-training). Favourable trends in cecal intubation rate and adenoma detection rate were observed, (91 % vs 96 % (P = 0.386), and 39 % vs 63 % (P = 0.069)). A trend to improved endoscopist-reported comfort scores (18 % vs 11 % (P = 0.375)) and nurse-reported comfort scores (22 % vs 8 % (P = 0.189)) was observed. Course participants and trainers alike reported globally favourable qualitative experiences with the expert trainers.

Conclusions Standardization of colonoscopy training is critical to the consistent attainment of KPIs and improving patient experience. This is the first demonstration of delivering live colonoscopy training remotely: an approach acceptable to trainees and trainers that has a positive impact on KPIs.

EARLY ESOPHAGEAL CANCER: Taking the diagnostics to a next level
Thursday, 28 April 2022

16:30–17:30
Club A

OP075 COMPUTER AIDED DIAGNOSIS FOR THE CHARACTERISATION OF DYSPLASIA IN BARRETT'S ESOPHAGUS WITH MAGNIFICATION ENDOSCOPY ON I-SCAN IMAGING

Authors Hussein M.^{1,2}, Lines D.³, González-Bueno Puyal J.^{3,1}, Bowman N.¹, Sehgal V.², Toth D.³, Everson M.¹, Ahmad O.¹, Kader R.¹, Esteban J.M.⁴, Bischopps R.⁵, Banks M.², Haefner M.⁶, Mountney P.³, Stoyanov D.¹, Lovat L.¹, Haidry R.^{2,1}

Institutes 1 University College London, London, United Kingdom; 2 University College London Hospital, London, United Kingdom; 3 Odin Vision, London, United Kingdom; 4 Clínico San Carlos, Madrid, Spain; 5 UZ Leuven, Leuven, Belgium; 6 St Elisabeth hospital, Vienna, Austria
DOI 10.1055/s-0042-1744638

Aims We aimed to develop a computer aided detection system that can support the diagnosis of Barrett's oesophagus (BE) dysplasia on magnification endoscopy.

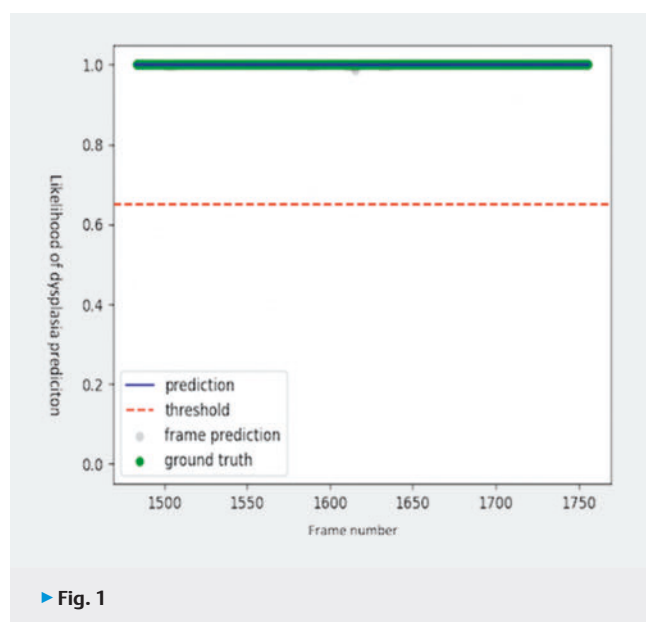
Methods Videos were collected in high-definition magnification white light and virtual chromoendoscopy with i-scan (Pentax Hoya, Japan) imaging in patients with dysplastic/ non-dysplastic BE (NDBE) from 4 centres. We trained a neural network with a Resnet101 architecture to classify frames.

The network was tested – on high quality still images, all available frames and on a selected sequence within each video.

Results 57 different patients each with videos of magnification areas of BE (34 dysplasia, 23 NDBE) were included. Performance was evaluated using a leave-one-out cross-validation methodology. 60,174 (39,347 dysplasia, 29,827 NDBE) magnification video frames were used to train the network. The testing set included 49,726 iscan-3/optical enhancement magnification frames. On 350 high quality images the network achieved a sensitivity of 94 %, specificity of 86 % and Area under the ROC (AUROC) of 96 %.

On all 49,726 frames the network achieved a sensitivity of 92 %, specificity of 82 % and AUROC of 95 %.

On a selected sequence of frames per case (Total of 11,471 frames) we used an exponentially weighted moving average of consecutive frames to diagnose dysplasia. The network achieved a sensitivity of 90 %, specificity of 82 % and AUROC of 94 % (Figure 1)



The mean assessment speed per frame was 0.0135 seconds (SD, + 0.006)

Conclusions Our network can characterise BE dysplasia with high accuracy and speed on high-quality magnification images and sequence of video frames moving it towards real time automated diagnosis.

OP076 INFLUENCE OF AN ARTIFICIAL INTELLIGENCE (AI) BASED DECISION SUPPORT SYSTEM (DSS) ON THE DIAGNOSTIC PERFORMANCE OF NON-EXPERTS IN BARRETT ´S ESOPHAGUS RELATED NEOPLASIA (BERN)

Authors Meinkheim M.¹, Mendel R.², Scheppach M.W.¹, Probst A.¹, Prinz F.¹, Schwamberger T.¹, Schlottmann J.¹, Gölder S.K.³, Walter B.⁴, Steinbrück I.⁵, Palm C.², Messmann H.¹, Ebigo A.¹

Institutes 1 University Hospital Augsburg, Department of Internal Medicine III – Gastroenterology, Augsburg, Germany; 2 Ostbayerische Technische Hochschule, Faculty of Computer Science and Mathematics, Regensburg, Germany; 3 Ostalb-Klinikum Aalen, Department of Internal Medicine I – Gastroenterology, Aalen, Germany; 4 University Hospital Ulm, Department of Internal Medicine I – Gastroenterology, Ulm, Germany; 5 Evangelisches Diakoniekrankenhaus Freiburg, Gastroenterology, Freiburg, Germany

DOI 10.1055/s-0042-1744639

Aims Barrett ´s esophagus related neoplasia (BERN) is difficult to detect and characterize during endoscopy, even for expert endoscopists. We aimed to assess the add-on effect of an Artificial Intelligence (AI) algorithm (*Barrett-Ampel*) as a decision support system (DSS) for non-expert endoscopists in the evaluation of Barrett ´s esophagus (BE) and BERN.

Methods Twelve videos with multimodal imaging white light (WL), narrow-band imaging (NBI), texture and color enhanced imaging (TXI) of histologically confirmed BE and BERN were assessed by expert and non-expert endoscopists. For each video, endoscopists were asked to identify the area of BERN and decide on the biopsy spot. Videos were assessed by the AI algorithm and regions of BERN were highlighted in real-time by a transparent overlay. Finally, endoscopists were shown the AI videos and asked to either confirm or change their initial decision based on the AI support.

Results *Barrett-Ampel* correctly identified all areas of BERN, irrespective of the imaging modality (WL, NBI, TXI), but misinterpreted two inflammatory lesions (Accuracy = 75 %). Expert endoscopists had a similar performance (Accuracy = 70,8 %), while non-experts had an accuracy of 58.3 %. When AI was implemented as a DSS, non-expert endoscopists improved their diagnostic accuracy to 75 %.

Conclusions AI may have the potential to support non-expert endoscopists in the assessment of videos of BE and BERN. Limitations of this study include the low number of videos used. Randomized clinical trials in a real-life setting should be performed to confirm these results.

OP077 A VISUALIZATION SYSTEM OF ESOPHAGEAL CANCER FEATURES BASED ON DEEP LEARNING

Authors Luo R.¹, Zhang L.¹, Hu S.², Yu H.¹

Institutes 1 Wuhan University, Wuhan, China; 2 WuHan EndoAngel Medical Technology Co.,LTD, Wuhan, China

DOI 10.1055/s-0042-1744640

Aims Esophageal cancer is the sixth leading cause of cancer deaths worldwide. Superficial esophageal squamous cell carcinoma (SESCC) is recommended to be treated with endoscopic treatment when invasion depths are diagnosed as EP-SM1. When the depth of invasion is deeper than SM2, surgery or chemotherapy are recommended. Therefore, identifying the depth of invasion of SESCC is crucial to determine the treatment measure. In this study, we propose a new method for diagnosing the invasion depth of SESCC.

Methods We retrospectively collected 1113 images of ESCC at the Renmin Hospital of Wuhan University and Nanjing Drum Tower Hospital, China. We used deep learning to visualize multiple indicators of the depth of esophageal cancer in the endoscopic image of SESCC, and generated a multi-information composite image of blood vessels, avascular areas (AVAs), and background coloration. We used these multi-information composite images to train this deep learning model. We compare this model with a deep learning model trained on the original image to evaluate its accuracy.

Results The sensitivity of the deep learning model using the original images was 83.67 % [95 % CI, 73.32 %-94.02 %], the specificity was 60.00 % [95 % CI, 51.74 %-68.26 %], and the accuracy was 66.30 % [95 % CI, 59.65 %-72.95 %]. The sensitivity of the deep learning model using the multi-information composite images was 81.63 % [95 % CI, 70.79 %-92.47 %], specificity was 69.63 % [95 % CI, 61.87 %-77.39 %], and accuracy was 72.83 % [95 % CI, 66.59 %-79.07 %].

Conclusions The deep learning model trained using the multi-information composite image can eliminate the influence of noise and can more accurately identify the invasion depth of SESCC.

OP078 A CLINICALLY APPLICABLE, GENOMIC ASSAY DETECTS PATHOGENIC ALTERATIONS IN BARRETT'S ESOPHAGUS PATIENTS WITH NON-DYSPLASTIC TISSUE

Authors Frei N.F.¹, Khoshiwal A.M.¹, Akarca G.², Rara M.³, Duits L.C.¹, Hof M.⁴, Zwinderman A.⁴, Zhang C.-Z.², Bass A.J.², Bergman J.J.¹, Stachler M.D.³

Institutes 1 University Medical Centers Amsterdam, Gastroenterology & Hepatology, Amsterdam, Netherlands; 2 Dana Farber Cancer Institute, Boston, United States; 3 University of California, San Francisco, Pathology, San Francisco, United States; 4 University Medical Centers Amsterdam, Biostatistics & Epidemiology, Amsterdam, Netherlands

DOI 10.1055/s-0042-1744641

Aims Current risk prediction for malignant progression in Barrett's Esophagus (BE) is based on the histological diagnosis of dysplasia, which is limited by several factors. Genomic abnormalities precede dysplasia and may allow for objective and early risk stratification. We aimed to identify genomic factors to develop a clinically applicable targeted sequencing panel predicting progression in BE.

Methods Progressors (P) to high-grade dysplasia/esophageal adenocarcinoma (EAC) and matched non-progressors (NP) from a nested, community-based cohort were identified. DNA from baseline and subsequent (temporal) non-dysplastic endoscopies was assessed. Sequencing was performed utilizing a targeted capture-based panel designed to detect alterations previously identified in BE/EAC. Mutations, homozygous deletions, and high-level amplifications were filtered for likely pathogenic events.

Results 227 BE patients (85 % male) with a median BE length of C3M4 were analyzed. 105 patients progressed after a median of 4 (IQR 3-6) years. 122 NP had a median follow-up of 6 (IQR 5-7) years. Mutations were more frequent in P compared with NP (73 % vs. 55 %, $p = 0.004$, Table 1). Baseline analysis identified TP53 in 30 % of P compared with 3 % of NP, $p < 0.0001$, and increased to 50 % closer to progression. TP53, KMT2D, ATM, and KDM6A were identified as risk predictors in univariate Cox regression analysis. Copy number alterations (amplifications, arm level loss) increased in P closer to progression.

Time point	Baseline analysis		Temporal analysis		
Genomic Abnormality	Non-Progressor	Progressor	Non-Progressor	Progressor	p-value
Mutations, %					
- Patients with mutations	54%	73%	Stable	Increase	
- TP53	3%	30%	8%	50%	<0.001
- ARID1A	12%	15%	43%	57%	0.024
- FAT3	0%	<1%	0%	5%	0.036
- KMT2C	3%	7%	3%	15%	0.012
- NF1	0%	4%	0%	6%	0.015
- PLK2	0%	3%	0%	5%	0.036
- PTPN23	0%	<1%	<1%	7%	0.015
- RB1	0%	<1%	0%	5%	0.036
Chromosome Arm Level Loss					
- Arm Level Loss			Stable	Increase	
- 17p Loss	0%	5%	0%	8%	0.006
- 18p	0%	<1%	0%	5%	0.036
- 18q	0%	<1%	0%	5%	0.036
Gene Amplifications					
- Patients with amplification	1%	6%	5%	16%	0.015
- CDK6	0%	3%	0%	7%	0.026
- YAP1	0%	3%	0%	7%	0.026
Gene Deletions					
- Patients with deletion	20%	11%	31%	18%	0.082
- CDKN2A	16%	7%	24%	10%	0.029

► Fig. 1

Conclusions We performed a genomic characterization of a large cohort of patients with NDBE, using a clinically applicable platform. Our study identified multiple mutational and copy number aberrations in non-dysplastic biopsies years before progression.

OP079 AN OBJECTIVE, FULLY AUTOMATED BARRETT'S RISK PREDICTION ASSAY OUTPERFORMS MOST PATHOLOGISTS IN RISK STRATIFYING BARRETT'S ESOPHAGUS WITH LOW GRADE DYSPLASIA

Authors Khoshiwal A.M.¹, Frei N.F.¹, Duits L.C.¹, Pouw R.E.¹, Bossart E.², Wilhelm M.², Critchley-Thorne R.², Bergman J.J.¹

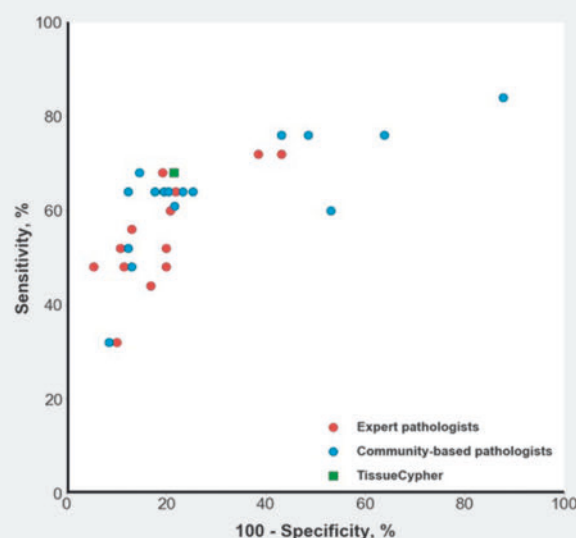
Institutes 1 University Medical Centers Amsterdam, Gastroenterology & Hepatology, Amsterdam, Netherlands; 2 Castle Biosciences Inc, Pittsburgh, United States

DOI 10.1055/s-0042-1744642

Aims Low-grade dysplasia (LGD) is the best predictor of malignant progression in Barrett's Esophagus (BE). LGD is over-diagnosed, therefore guidelines recommend expert histological revision. TissueCypher is an objective, automated BE risk prediction assay, previously validated. We aimed to evaluate the predictive value of TissueCypher in BE patients with community-based LGD and to benchmark its performance against an international panel of pathologists.

Methods BE patients with community-based LGD derived from the screening cohort of the randomized SURF trial comparing Surveillance vs. RFA for confirmed LGD. All baseline LGD-endoscopy biopsies were assessed by TissueCypher, which classifies patients as low-, intermediate- or high-risk for progression to high-grade dysplasia (HGD) or esophageal adenocarcinoma (EAC), and independently reviewed by 29 pathologists, including 13 BE-experts, from the USA, UK, Germany, Netherlands and Belgium.

Results 155 patients (79 % male), age 62 ± 10 years, median BE length C3M4, median follow-up 7 years (IQR 4.4-9.7), mean 3 ± 2 endoscopies, were studied. 25 patients developed HGD/EAC within 5 years (progressors) and 130 did not (non-progressors). The panel downstaged 69 % (mean, range 13–88 %) LGD cases to non-dysplastic, confirmed LGD in 18 % (7–41 %), and classified 13 % (0–74 %) of cases as indefinite-for-dysplasia (IND). TissueCypher downstaged 71 % of the cases to low-risk and scored 29 % as intermediate/high-risk for progression. Sensitivity and specificity for predicting progression is shown in Table 1 and Figure 1.



Perfect score is in the left upper corner. Pathologist diagnoses were assessed as LGD+IND vs. NDBE.

► Fig. 1

► **Table 1** Sensitivity and specificity of TissueCypher, expert pathologists, community-based pathologists.

Progression to HGD/EAC within 5 years	TissueCypher	Expert pathologists (n = 13)	Community-based pathologists (n = 16)
	High/Intermediate vs. Low Risk Score	LGD + IND vs. NDBE	LGD + IND vs. NDBE
Sensitivity, %	68	55 (32-72)	64 (32-84)
Specificity, %	79	81 (57-95)	70 (12-92)

Conclusions Histological review of community-based LGD showed a high inter-observer variability with a significant number of cases classified as non-informative. TissueCypher provides an objective reassessment of LGD, outperforming the vast majority of pathologists.

OP080 POOLING BARRETT'S ESOPHAGUS (BE) SURVEILLANCE ENDOSCOPIES ON DEDICATED BE ENDOSCOPY LISTS IMPROVES ADHERENCE TO THE FOUR-QUADRANT RANDOM (4QR) BIOPSY PROTOCOL

Authors Beaufort I.^{1,2}, Meeuse J.³, van de Meeberg P.⁴, Alderlieste Y.⁵, Verbeek R.⁶, Sikkema M.⁷, Scheffer B.⁸, Naber T.⁹, Ledebor M.¹⁰, Pullens P.¹¹, van de Vrie W.¹², Willems M.¹³, Lieveer R.¹⁴, Verhagen M.¹⁵, Baars J.¹⁶, van Heel N.¹⁷, Bos P.¹⁸, Burger J.¹⁹, Weusten B.^{1,2}

Institutes 1 St. Antonius Ziekenhuis, Nieuwegein, Netherlands; 2 Universitair Medisch Centrum Utrecht, Utrecht, Netherlands; 3 Ziekenhuis Rivierland Tiel, Tiel, Netherlands; 4 Slingeland Ziekenhuis, Doetinchem, Netherlands; 5 Beatrixziekenhuis, Gorinchem, Netherlands; 6 Groene Hart Ziekenhuis, Gouda, Netherlands; 7 Elisabeth-TweeSteden Ziekenhuis, Tilburg, Netherlands; 8 Jeroen Bosch Ziekenhuis, 's-Hertogenbosch, Netherlands; 9 Tergooi, Hilversum, Netherlands; 10 Deventer Ziekenhuis, Deventer, Netherlands; 11 Meander Medisch Centrum, Amersfoort, Netherlands; 12 Albert Schweitzer Ziekenhuis, Dordrecht, Netherlands; 13 Ziekenhuis Sint Jansdal, Harderwijk, Netherlands; 14 Ziekenhuisgroep Twente, Almelo, Netherlands; 15 Diaconessenhuis, Utrecht, Netherlands; 16 Amphia Ziekenhuis, Breda, Netherlands; 17 Gelre Ziekenhuizen, Apeldoorn, Netherlands; 18 Ziekenhuis Gelderse Vallei, Ede, Netherlands; 19 Rijnstate, Arnhem, Netherlands

DOI 10.1055/s-0042-1744643

Aims For BE patients, guidelines recommend endoscopic surveillance with 4QR biopsies every 2 centimeters of BE length. In clinical practice however, adherence to the 4QR biopsy protocol is low. We wished to investigate whether pooling BE surveillance endoscopies on dedicated endoscopy lists performed by dedicated endoscopists enhances biopsy protocol adherence and subsequently dysplasia detection rates (DDR).

Methods Data were used from the ACID-study (Netherlands Trial Registry NL8214), a prospective trial on BE surveillance in 18 community hospitals in the Netherlands (data entry since October 2019). BE patients with a history of dysplasia were excluded. Biopsy protocol adherence was defined as 4QR biopsies every 2 centimeters of circumferential BE extent, plus at least 1 biopsy every 2 centimeters of BE tongues. Biopsy protocol adherence and DDR were compared for patients on dedicated and non-dedicated lists.

Results BE surveillance was performed on dedicated endoscopy lists in 3/18 hospitals. 854 patients were included, 204 on dedicated lists and 650 on gen-

eral endoscopy lists. Mean age (65.2 vs 64.8), male sex (73 % vs 69 %) and median BE length (C1M4 vs C1M3) were comparable between the two groups. Sedation was more often administered during dedicated list endoscopies ($p < 0.0001$). 4QR biopsy protocol adherence was significantly better for endoscopies on dedicated lists compared to non-dedicated lists (83 % vs 63 %, $p < 0.0001$). DDR were not significantly different (8.4 % and 7.1 % respectively, $p = 0.66$).

► **Table 1**

	Dedicated BE list (N = 204)	Non-dedicated BE list (N = 650)	p-value
Barrett length, median (IQR)			
Prague C	1 (0-4)	1 (0-4)	0.48
Prague M	4 (2-5)	3 (2-5)	0.11
Sedation used, n (%)	166 (82)	404 (62)	<0.0001
Adherence 4QR biopsy protocol, n (%)	168 (83)	409 (63)	<0.0001
Dysplasia, n (%)	17 (8.4)	46 (7.1)	0.66

Conclusions Pooling BE surveillance endoscopies on dedicated lists is associated with better 4QR biopsy protocol adherence. This however did not translate into a higher DDR.

Post polypectomy and IBD surveillance

16:30-17:30

Thursday, 28 April 2022

Club E

OP081 STOOL-BASED TESTING TO REDUCE THE NUMBER OF UNNECESSARY SURVEILLANCE COLONOSCOPIES: THE MOCCAS STUDY

Authors Carvalho B.¹, de Klaver W.^{1,2}, van Wifferen F.³, van Lanschot M.^{1,2}, van de Wetering A.J.P.⁴, van der Zander Q.E.W.⁴, Lemmens G.M.¹, Bolijn A.S.¹, Tijssen M.¹, Delis-van Diemen P.¹, Buekers N.⁴, Daenen K.⁴, van der Meer J.⁴, van Mulligen P.G.¹, Hijmans B.¹, de Ridder S.², van der Hulst R.W.M.⁵, Kuijvenhoven J.P.⁵, van Berkel A.-M.⁶, Depla A.C.T.M.⁷, van Leerda M.E.¹, Jansen J.M.⁸, Wientjes C.A.⁸, Straathof J.W.⁹, Keulen E.T.P.¹⁰, Ramsoekh D.³, Moons L.M.G.¹¹, Berger B.M.¹², Lidgard G.P.¹², Zacherl M.¹³, Masclee A.A.M.⁴, Greuter M.J.E.³, Coupé V.M.H.³, van Engeland M.⁴, Dekker E.², Meijer G.A.¹

Institutes 1 Antoni van Leeuwenhoek Nederlands Kanker Instituut, Amsterdam, Netherlands; 2 Amsterdam UMC Locatie AMC, Amsterdam, Netherlands; 3 Amsterdam UMC Locatie VUmc, Amsterdam, Netherlands; 4 Maastricht Universitair Medisch Centrum+, Maastricht, Netherlands; 5 Spaarne Gasthuis, Haarlem, Netherlands; 6 Noordwest Ziekenhuisgroep, Alkmaar, Netherlands; 7 MC Slotervaart, Amsterdam, Netherlands; 8 OLVG, Amsterdam, Netherlands; 9 Maxima Medisch Centrum, Eindhoven, Netherlands; 10 Zuyderland Medisch Centrum, Heerlen, Netherlands; 11 Universitair Medisch Centrum Utrecht, Utrecht, Netherlands; 12 EXACT Sciences Corp, Madison, United States; 13 Sysmex-Europe, Norderstedt, Germany

DOI 10.1055/s-0042-1744644

Aims The yield of colonoscopy surveillance after colorectal cancer screening is limited. To lower patient burden and healthcare costs, there is a need to reduce colonoscopies in which no advanced neoplasia is detected. The MOlecular stool testing for Colorectal CAncer Surveillance (MOCCAS) study evaluated

whether stool-based testing could safely reduce the number of surveillance colonoscopies.

Methods This cross-sectional study included patients under colonoscopy surveillance, who performed the multi-target stool DNA test (mt-sDNA, ColoGuard) and two fecal immunochemical tests (FITs, OC-Sensor and FOB-Gold) before colonoscopy. Test characteristics were determined for all stool tests. With the validated Adenoma and Serrated pathway to Colorectal Cancer (ASCCA) model, we simulated a colonoscopy surveillance (European post-polypectomy surveillance guideline) strategy and stool-based surveillance strategies that varied in stool-based test and test interval. We chose test cut-offs such that predicted effectiveness (colorectal cancer mortality) of stool-based surveillance equaled effectiveness of colonoscopy surveillance. Outcomes of each strategy included number of colonoscopies and costs.

Results 3453 Patients had a valid result for all stool tests and a complete colonoscopy. Colonoscopy surveillance was predicted to result in 1669 lifetime colonoscopies per 1000 individuals under surveillance. At equal effectiveness, fewer colonoscopies were predicted for all stool-based strategies (16–41 % reduction). Annual testing with FOB-Gold led to the largest reduction in colonoscopies (41 %, cut-off $\geq 32 \mu\text{g/g}$). Mt-sDNA surveillance was more costly than colonoscopy surveillance, while FIT-based surveillance saved costs.

Conclusions Stool-based surveillance can be as effective as post-polypectomy colonoscopy surveillance, and reduces the number of colonoscopies by up to 41 % without increasing healthcare costs.

OP082 RISK FACTORS FOR METACHRONOUS COLORECTAL CANCER OR ADVANCED ADENOMAS AFTER ENDOSCOPIC RESECTION OF HIGH RISK ADENOMAS: A SYSTEMATIC REVIEW AND META-ANALYSIS

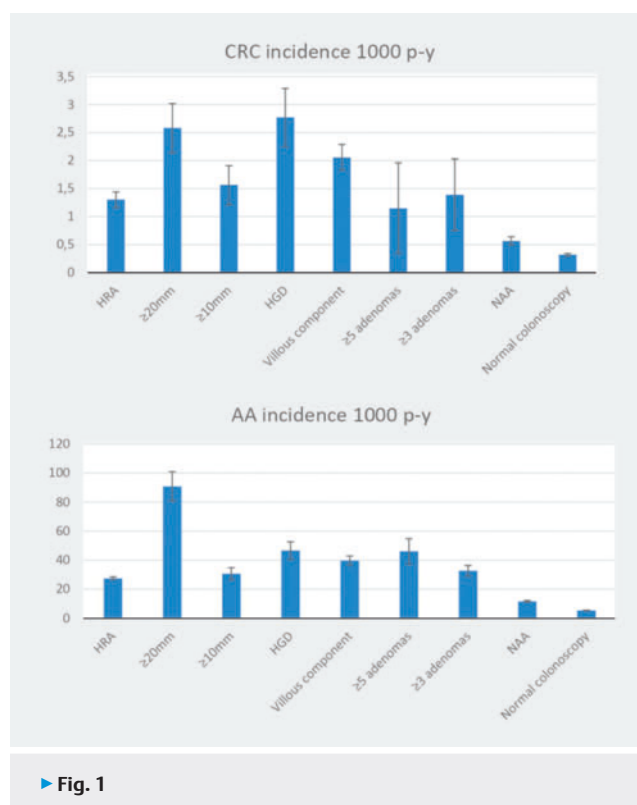
Authors Baile-Maxia S.¹, Mangas-Sanjuan C.², Ladabaum U.³, Hassan C.⁴, Rutter M.D.⁵, Bretthauer M.⁶, Medina-Prado L.², Murcia O.², Zapater P.⁷, Jover R.⁸

Institutes 1 Gastroenterology Department. Hospital Universitario del Vinalopó, Alicante, Spain; 2 Gastroenterology Department. Hospital General Universitario de Alicante, Alicante, Spain; 3 Division of Gastroenterology and Hepatology. Stanford University School of Medicine, Stanford CA, United States; 4 Gastroenterology Department. Nuovo Regina Margherita Hospital., Rome, Italy; 5 Population Health Sciences Institute, Newcastle University, Newcastle upon Tyne, United Kingdom; 6 Clinical Effectiveness Research Group, Institute of Health and Society, University of Oslo and Department of Transplantation Medicine, Oslo University Hospital, Oslo, Norway; 7 Clinical Pharmacology Department. Hospital General Universitario de Alicante. Instituto de Investigación Biomédica ISABIAL, Alicante, Spain; 8 Gastroenterology Department. Hospital General Universitario de Alicante., Alicante, Spain

DOI 10.1055/s-0042-1744645

Aims To assess which high-risk adenoma (HRA) characteristics are associated with high risk of metachronous colorectal cancer (CRC) or advanced adenomas (AA).

Methods We systematically searched Pubmed, EMBASE and Cochrane for cohort, case-control and clinical trials of CRC or AA incidence at surveillance stratified by baseline lesion size, histology and multiplicity. We calculated pooled relative risks (RR) using a random-effects model. Heterogeneity was assessed with the I^2 statistic.



► Fig. 1

Results Sixty-eight studies were included, with 731,040 patients. CRC incidence per 1,000 person-years was 2.6 (2.1–3.0) for adenomas $\geq 20\text{mm}$, 2.8 (2.3–3.3) for high-grade dysplasia (HGD), 2.1 (1.8–2.3) for villous component, 1.2 (0.3–1.9) for ≥ 5 adenomas, and 1.4 (0.8–2.3) for ≥ 3 adenomas. Metachronous CRC risk was higher in patients with adenomas $\geq 20\text{mm}$ vs. adenomas 10–20 mm (RR 2.08, 95%CI 1.20–3.61), HGD vs low-grade dysplasia (RR 2.94, 95%CI 1.97–4.39) and villous component vs. tubular adenomas (RR 1.75, 95%CI 1.35–2.24). No differences in metachronous CRC risk were found in patients with ≥ 5 adenomas vs those with 3–4 (RR 1.07, 95%CI 0.44–2.57), nor in patients with ≥ 3 adenomas vs 1–2 (RR 1.60, 95%CI 0.94–2.74). Similar trends were seen for metachronous AA. The absolute risk differences for CRC incidence were low, ranging from 0.05 % increase in absolute risk in patients with > 5 adenomas to 0.14 % in patients with HGD.

Conclusions Metachronous CRC risk is highest in patients with baseline adenomas with size $> 20\text{mm}$, HGD, or villous component. Multiplicity does not seem to be associated with a substantially higher CRC risk.

OP083 IMPLEMENTATION OF BOTH BSG 2019 AND ESGE 2020 POLYPECTOMY SURVEILLANCE GUIDELINES SAFELY REDUCES THE BURDEN OF SURVEILLANCE IN A SCREENING COHORT – A VIRTUAL MODEL STUDY

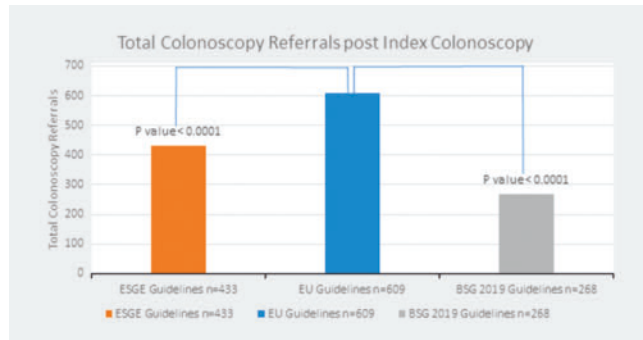
Authors Stack R.^{1,2}, Doherty J.^{1,2}, O'Morain N.^{1,2}, Nolan B.¹, Horgan G.^{1,2}, Sheridan J.¹, Buckley M.¹, Mc Dermott E.^{1,2}, Mulcahy H.^{1,2}, Cullen G.^{1,2}, Doherty G.^{1,2}

Institutes 1 St. Vincent's University Hospital, Gastroenterology, Dublin, Ireland; 2 University College Dublin, Dublin, Ireland

DOI 10.1055/s-0042-1744646

Aims To evaluate the impact of BSG 2019 and ESGE 2020 polypectomy surveillance guidelines within a national FIT-based bowel cancer screening (BS) cohort on surveillance activity and detection of pathology by retrospective virtual application.

Methods A retrospective review of BS colonoscopies performed in 2015–2016 with 5 years prospective follow up in single institution. Index colonoscopies were selected. Incomplete colonoscopies were excluded. Histology of all resected polyps was reviewed. Surveillance intervals were calculated according to BSG 2019 and ESGE 2020 guidelines compared to pre-existing ‘European guidelines for quality assurance in colorectal cancer screening and diagnosis’ (EUQA 2013). Total number of colonoscopies deferred by virtual implementation of BSG 2019 and ESGE 2020 guidelines were calculated. Pathology identified on procedures that would have been deferred was reviewed.



► Fig. 1

Results Total number of index BS colonoscopies performed in 2015–2016 inclusive was 892. 117 were excluded (23 no caecal intubation, 51 inadequate bowel preparation, 48 incomplete polyp clearance). N = 609 colonoscopies were scheduled following index colonoscopy in 2 surveillance rounds based on EUQA. Overall, volume of surveillance was significantly reduced with retrospective application of BSG 2019 (n = 268, P value < 0.0001); and ESGE 2020 (n = 433 P value < 0.0001). No cancers were detected within the ‘potentially deferred’ procedures who attended for follow up (n = 145). High risk findings were found in 3% (9/145) and 2% (7/145) colonoscopies within the BSG and ESGE cohorts (P value = 0.7980), respectively.

► Table 1

Guidelines	No. colonoscopies following Index N = 775	No. colonoscopies following 1 st surveillance N = 221	No. colonoscopies following 2 nd surveillance N = 114	Total number of colonoscopies
EUQA 2013	289	213	107	609
BSG 2019	189 (P value < 0.0001)	71 (P value < 0.0001)	8 (P value < 0.0001)	268 (P value < 0.0001)
ESGE 2020	224 (P value < 0.0001)	172 (P value < 0.0001)	37 (P value < 0.0001)	433 (P value < 0.0001)

Conclusions Both BSG 2019 and ESGE 2020 polypectomy guidelines safely reduce the burden of colonoscopy demand with acceptable pathology findings on deferred colonoscopies.

OP084 COMPARISON OF DYE-SPRAYING CHROMOENDOSCOPY AND VIRTUAL CHROMOENDOSCOPY FOR COLONIC DYSPLASIA DETECTION IN LONG-STANDING INFLAMMATORY BOWEL DISEASE

Authors Correia J.¹, Ponte A.¹, Proença L.¹, Rodrigues A.¹, Pinho R.¹, Leite S.¹, Fernandes C.¹, Rodrigues J.¹, Silva J.C.¹, Gomes C.¹, Afecto E.¹, Estevinho M.¹, Freitas T.¹

Institute 1 Centro Hospitalar de Vila Nova de Gaia/Espinho, Gastroenterology, Vila Nova de Gaia, Portugal

DOI 10.1055/s-0042-1744647

Aims This study aimed to compare virtual chromoendoscopy (VCE) and dye-spraying chromoendoscopy (DCE) for colonic surveillance in patients with long-standing extensive Inflammatory Bowel Disease (IBD).

Methods Eleven gastroenterologists were given a survey with 20 pairs of pictures of IBD surveillance colonoscopies (10 with nondysplastic lesions, 5 with dysplastic lesions and 5 with no lesions). Each pair contained the same image captured during colonoscopy using VCE and DCE. For each picture, the gastroenterologist assessed the presence/absence of lesion and, when a lesion was identified, assessed the presence/absence of dysplasia and delineated its margins. To compare lesion and dysplasia detection between techniques, the sensitivity, specificity and inter-observer agreement were calculated. The chi-square test was used to assess the accuracy of margins delineation.

Results When assessing lesion detection using VCE, sensitivity (S) and specificity (E) were 0.93 and 0.49 and in DCE, 0.97 and 0.38, respectively. When assessing dysplasia detection using VCE, S and E were 0.74 and 0.60 and, in DCE, 0.67 and 0.62, respectively. Interobserver agreement analysis revealed that VCE and DCE had a moderate agreement in lesion detection (k = 0.57 and 0.58, respectively); however, for dysplasia detection, VCE had a fair agreement (k = 0.30) and DCE a slight agreement (k = 0.11). The rate of accurately defined margins was similar for both techniques (p = 0.22).

Conclusions Similar lesion and dysplasia detection and margins delineation were achieved with both techniques. However, concerning dysplasia detection, interobserver agreement was slightly better using VCE. Therefore, VCE may constitute a valid alternative to DCE for dysplasia screening in IBD.

OP085 ENDOSCOPIST ESTIMATE OF POLYP SIZE IS DOUBLE THE ACTUAL SIZE OF NEOPLASIA WITHIN A POLYP

Authors Heda R.¹, Ghamsari F.¹, Anderson J.^{2,3}, Hirschman S.⁴, Pohl H.^{2,3}

Institutes 1 Tulane University School of Medicine, Internal Medicine, New Orleans, United States; 2 Geisel School of Medicine at Dartmouth, Department of Gastroenterology, Hanover, United States; 3 White River Junction VA Medical Center, Section of Gastroenterology, White River Junction, United States; 4 White River Junction VA Medical Center, Pathology, White River Junction, United States

DOI 10.1055/s-0042-1744648

Aims Polyp size is a major determinant for post-colonoscopy surveillance. It is unknown how endoscopist size estimates (ES) compares to actual neoplasia size (NS) within a resected polyp. We aimed to compare ES with NS.

Methods This prospective study included patients undergoing elective colonoscopy with en bloc polypectomy. Each polyp had three size determinations: 1) by the endoscopist, 2) ex-vivo as the polyp specimen size, and 3) as the maximum extent of neoplasia within the polyp (pathologist). The primary outcome was the mean absolute (AD) and relative difference (RD) between ES and NS with 95% confidence interval (CI).

Results 2356 polyps from 1239 patients were included. 97% were adenomatous. Median ES was 4 mm (IQR 3–5). ES estimates were smaller than specimen sizes (Table 1), and both were greater than NS. ES was on average twice the NS (RD 1.95 (95% CI 1.86–2.04) with a mean AD of 1.3 mm (95% CI 1.21 – 1.37). In multivariable analysis the difference increased with size (per endoscopist)

and flat morphology and was lower with trainee involvement. Of all = 10 mm polyps (n = 44 in 44 patients) as assessed by the endoscopist, only 23% (95% CI 11.5–37.8) (10 polyps in 10 patients) had an actual neoplasia size of at least 10 mm.

► Table 1

	Endoscopist size, mean mm (SD) * (ES)	Specimen size, mean mm (SD) * (SS)	Neoplasia size, mean mm (SD) * (NS)	Mean relative difference (95% CI) (ES/NS)
All polyps (N = 2356)	4.0 (2.1)	5.0 (2.9)	2.7 (1.8)	1.95 (1.86–2.04)
Size groups (per endoscopist):				
1–5 mm	3.4 (1.1)	4.7 (2.7)	2.4 (1.3)	1.86 (1.78–1.94)
6–9 mm	6.8 (0.95)	6.4 (3.1)	4.2 (2.5)	2.23 (2.04–2.42)
≥ 10 mm	13 (3.9)	9.0 (4.4)	6.4 (4.4)	4.39 (1.65–7.14)

Conclusions This is the first study to compare endoscopist polyp size estimates, polyp specimen size, and actual neoplasia size within a polyp. These findings question current practice, call for objective neoplasia size measurements, and may have implications for assignment of patient risk and surveillance interval.

OP086 EFFICACY OF DYE-BASED CHROMOENDOSCOPY FOR COLORECTAL NEOPLASIA DETECTION: A SYSTEMATIC REVIEW AND METANALYSIS

Authors Antonelli G.^{1,2}, Correale L.³, Spadaccini M.³, Maselli R.³, Cereatti F.¹, Pecere S.⁴, Bevivino G.¹, Iacopini F.¹, Repici A.³, Hassan C.³

Institutes 1 Ospedale dei Castelli Hospital, Department of Gastroenterology and Digestive Endoscopy, Rome, Italy; 2 Sapienza University of Rome, Department of Anatomical, Histological, Forensic Medicine and Orthopedics Sciences, Rome, Italy; 3 Humanitas University, Department of Biomedical Sciences, Rozzano (MI), Italy; 4 Fondazione IRCCS Policlinico Gemelli, Digestive Endoscopy Unit, Rome, Italy

DOI 10.1055/s-0042-1744649

Aims Dye-Based chromoendoscopy (DBC) has shown to be effective in increasing adenoma detection rate (ADR), but the technique is time-consuming and its uptake is limited. The burden of dye spraying the colon has recently been cut down by the possibility to orally administer the dye during bowel preparation. We aimed to assess the effect of DBC in increasing ADR including only randomized controlled trials (RCTs).

Methods Four scientific databases were searched for RCTs comparing DBC with standard colonoscopy (SC) in terms of ADR, advanced ADR, and serrated sessile adenoma detection rates as well as the mean number of adenomas per

patient (MAP) and per colonoscopy (MAC) and the mean number of sessile serrated adenomas per colonoscopy (MSSAC). We calculated relative risk (RR) and 95% confidence intervals (CIs), using a random-effect model. The I^2 test was used for quantifying heterogeneity. Quality of the studies was evaluated with GRADE system.

Results Overall, 10 RCTs (5,334 patients; 2,650 DBC, 2,684 SC) were included. Indication for colonoscopy was screening/surveillance (3 studies), mixed (5 studies) and high-risk patients (2 studies). Procedure time was increased in the DBC arm (27.6 vs 20.9 mins; $p = < 0.001$). Pooled ADR was higher in the DBC group vs. SC group, (48.2% [41.8–54.6%] vs 39.8% [33.9–46.2%]; RR = 1.20 [95%CI 1.11–1.29], $p < 0.00001$), with low heterogeneity ($I^2 = 29\%$). This effect was consistent for advanced ADR (RR = 1.21 [95% CI 1.03–1.42] $I^2 = 0.0\%$), and for MAP (RR 0.24 [95% CI, 0.17–0.31]).

Conclusions Meta-analysis of RCTs supports that DBC increases key-quality parameters in colonoscopy, promoting its incorporation in clinical practice.

SAFETY FIRST !

16:30–17:30

Thursday, 28 April 2022

Club H

OP087 SAFETY INCIDENTS IN ENDOSCOPY – A HUMAN FACTORS ANALYSIS

Authors Ravindran S.^{1,2,3}, Matharoo M.², Healey C.¹, Coleman M.¹, Ashrafian H.³, Darzi A.³, Thomas-Gibson S.^{2,4}

Institutes 1 Joint Advisory Group on Gastrointestinal Endoscopy, London, United Kingdom; 2 St Mark's Academic Institute, Wolfson Unit for Endoscopy, London, United Kingdom; 3 Imperial College London, Surgery and Cancer, London, United Kingdom; 4 Imperial College London, Metabolism, Digestion and Reproduction, London, United Kingdom

DOI 10.1055/s-0042-1744650

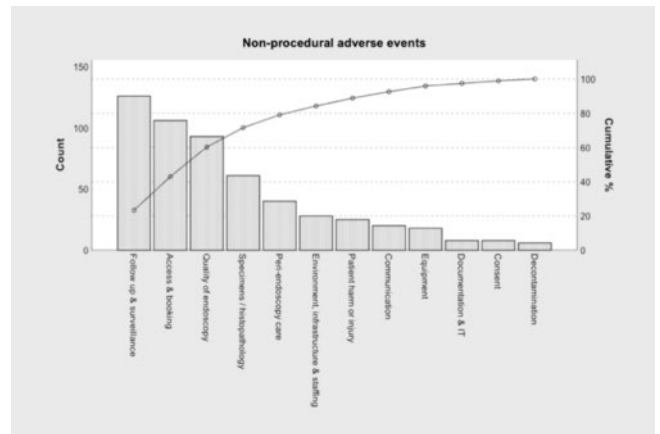
Aims Outside of procedural adverse events and complications, there is little understanding of wider patient safety incidents (PSIs) in endoscopy. The aim of this study was to quantify endoscopy PSIs and identify their contributory human factors utilising a national data set.

Methods Data were extracted from the National Reporting and Learning System (NRLS) which records staff-reported safety incidents in England and Wales. Two independent coders with backgrounds in safety and human factors analysis coded data using a hybrid thematic analysis approach. Pareto analysis was utilised to ascertain the causes of the top 80% of incidents and the Human Factors Analysis and Classification System (HFACS) was applied to code contributory factors.

Results Over the period 2017–2019, 1811 endoscopy-related PSIs were identified, of which 629 were procedural adverse events (pAEs; directly related to procedure), 539 were non-procedural adverse events (nAEs; any incident not directly related to a procedure) and 16 were 'never' events. Inter-coder reliability was substantial with a kappa of 0.77. A total of 842 human factors codes were identified from available data across four levels: acts, preconditions, supervision and organisational influences. Decision-based errors were the most common acts (>40%) across categories. Patient factors were significant contributors in pAEs (74.5%) and co-ordination, communication (33.5 – 66.7%) and situational (27.1%) factors were key contributory factors in nAEs and never events.

► Table 1

	Procedural adverse events	Non-procedural adverse events	Never events
Distribution	629/1181 (53.3%)	539/1181 (45.6%)	16/1181 (1.4%)
Categories (n,%)	<ul style="list-style-type: none"> Instrumental (312, 49.8%) Bleeding (94, 15%) Cardiovascular (39, 6.2%) Pulmonary (27, 4.3%) Pancreatitis (25, 4.0%) Pain (23, 3.7%) Drug reaction (17, 2.7%) Infection (15, 2.4%) Integument (14, 2.2%) Thromboembolic (13, 2.1%) Other (48, 7.7%) 	<ul style="list-style-type: none"> Follow up & surveillance (126, 23.4%) Access & booking (106, 19.7%) Quality (93, 17.3%) Specimens / histopathology (61, 11.3%) Peri-endoscopy care (40, 7.4%) Staffing, environment, infrastructure (28, 5.2%) Patient harm or injury (25, 4.6%) Communication (20, 3.7%) Equipment (18, 3.3%) Documentation (8, 1.5%) Consent (8, 1.5%) Decontamination (6, 1.1%) 	<ul style="list-style-type: none"> Wrong patient (10, 62.5%) Wrong site (6, 37.5%)
Reported degree of harm (n,%)	<ul style="list-style-type: none"> Moderate (484, 77.2%) Severe (62, 10.2%) Death (79, 12.6%) 	<ul style="list-style-type: none"> Moderate (390, 72.4%) Severe (131, 24.3%) Death (18, 3.3%) 	<ul style="list-style-type: none"> Moderate (14, 87.5%) Severe (2, 12.5%)
Contributory factors (HFACS)	<p>Level 1: Decision-based errors (43.6%)</p> <p>Level 2: Patient factors (74.5%)</p> <p>Co-ordination and communication factors (16.5%)</p>	<p>Level 1: Decision-based errors (51.8%)</p> <p>Routine non-concordance (23.8%)</p> <p>Level 2: Communication (33.5%)</p> <p>Situational factors (27.1%)</p> <p>Level 3: Planning (58.8%)</p> <p>Level 4: Organisational processes (42.3%)</p>	<p>Level 1: Decision-based errors (58.3%)</p> <p>Skill-based errors (41.7%)</p> <p>Level 2: Co-ordination and communication factors (66.7%)</p>



► Fig. 1

Conclusions This is the first overview of national-level endoscopy safety incident data and demonstrates the role human factors play in PSI development. These findings should inform patient safety improvement strategies in endoscopy.

OP088 PROPOFOL TARGET-CONTROLLED INFUSION (TCI) BY GASTROENTEROLOGISTS FOR ENDOSCOPIC PROCEDURES: AN ANALYSIS OF PATIENT SAFETY AND SATISFACTION

Authors Mandarinò F.V.¹, Fanti L.¹, Barchi A.¹, Biamonte P.¹, Azzolini F.¹, Esposito D.¹, Viale E.¹, Massimino L.¹, Danese S.¹

Institute 1 San Raffaele Scientific Institute, Milan, Italy

DOI 10.1055/s-0042-1744651

Aims The aim of the study is to assess the complication rate and patient satisfaction after gastrointestinal endoscopic procedures (excluding surgical endoscopy), with sedation regimen of propofol target-controlled infusion (TCI) administered by gastroenterologist.

Methods Patients with American Society Anesthesiologists (ASA) Physical Status Classification System < 3, who consecutively underwent endoscopic procedures at San Raffaele Hospital (Milan, Italy) between May 2019 and October 2021, were enrolled. The sedation protocol included propofol TCI alone or plus fentanyl 1 mcg/kg (during colonoscopies). Endoscopic and clinical data were collected retrospectively from a prospectively recorded database.

Results A total of 11628 endoscopic procedures with gastroenterologist administered propofol TCI sedation were analyzed, including 5898 esophagogastroduodenoscopies (EGD), 5717 colonoscopies, and 13 sigmoidoscopies. Median age of patients was 59.5 (49.3-70.7) years and 48% was male.

Sedation-related adverse events occurred in 162 patients (1.4%), including arterial hypotension (29 cases), desaturation (81 cases), disinhibition (17 cases), bradyarrhythmia (23 cases), two or more listed above (12 cases), all were transient.

A weak positive correlation was found between cardiovascular diseases and anticoagulant therapy with two or more adverse events (respectively, Pearson correlation $R^2 = 0.03$ and 0.05).

In a post-procedure questionnaire, 8551 patients (85%) gave a satisfaction score for sedation of more than 8 (score 0-9) and 9952 patients (99%) stated that they would repeat the endoscopic procedure with the same mode of sedation.

Conclusions TCI of propofol managed by gastroenterologist (plus opioids) may provide a safe and comfortable sedation for endoscopic procedures, under adequate cardiorespiratory monitoring.

OP089 SAFETY OF ENDOSCOPIC ULTRASOUND-GUIDED TISSUE ACQUISITION ON DIRECT ORAL ANTICOAGULANTS: A RANDOMIZED PRECLINICAL TRIAL

Authors Garcia Garcia de Paredes A.^{1,2}, Hernandez-Lara A.H.¹, Hartley C.³, Pruthi R.K.⁴, Graham R.P.³, AbiMansour J.P.¹, Vargas Valls E.J.¹, Storm A.C.¹, Gleeson F.C.¹, Levy M.J.¹, Rajan E.¹

Institutes 1 Mayo Clinic, Division of Gastroenterology and Hepatology, Rochester, United States; 2 Hospital Universitario Ramon y Cajal, IRYCIS, Universidad de Alcalá, Gastroenterology and Hepatology Department, Madrid, Spain; 3 Mayo Clinic, Division of Anatomic Pathology, Rochester, United States; 4 Mayo Clinic, Division of Hematology and Hematopathology, Rochester, United States

DOI 10.1055/s-0042-1744652

Aims To assess the safety and outcome of endoscopic ultrasound-guided fine needle biopsy (EUS-FNB) without interruption of a direct oral anticoagulant in a porcine model.

Methods Twenty pigs were randomized (1:1) to oral apixaban or placebo and underwent EUS-FNB of the pancreas (22G needle). Apixaban (0.5mg/Kg/12h) was administered 3 days before EUS-FNB and continued for 72 hours to end of survival. Specimens were submitted for rapid on-site evaluation (ROSE) and histology. Hemoglobin levels were checked pre EUS-FNB and 72 hours later. Apixaban concentration was analyzed before EUS-FNB. Study endpoints were 1. Occurrence of clinically significant bleeding (CSB, a composite outcome of drop in hemoglobin level ≥ 2 g/dL and evidence of intraprocedural or postprocedural bleeding) 2. Diagnostic specimens defined by ROSE or histological confirmation of pancreas tissue and 3. Quality of specimens graded by the degree of blood contamination. Endosonographers and pathologists were blinded to treatment allocation.

Results CSB occurred in 1 animal in the apixaban group ($p = 1$). Minor bleeding occurred in 10 animals, 6 from the apixaban group (5 intraprocedural bleeding; 10 hematoma at necropsy). Median drop in hemoglobin was 0.85g/dL (IQR: 0.3-1.35), without difference between groups ($p = 0.78$). All specimens were considered diagnostic by ROSE or histology criteria. There was no difference in specimen quality for ROSE ($p = 0.21$). In histological specimens, blood accounted for 74% (IQR: 45.6-96.3) of the core area in the apixaban group and 97.6% (IQR: 92.6-98.6%) in placebo group, $p = 0.05$.

Conclusions EUS-FNB of the pancreas with apixaban did not significantly increase CSB, nor did it limit a diagnostic cytopathological evaluation.

OP090 OUTCOMES OF ERCP WITH NON-ANESTHESIOLOGIST ADMINISTERED PROPOFOL (NAAP)

Authors Albuquerque Miranda M.^{1,2}, Pijoan Comas E.^{1,2}, Zaragoza Velasco N.³, Figa Francesch M.¹, Vargas García A.^{1,2}, Miguel Salas I.³, Miñana Calafat J.M.³, Torres Vicente G.³, Reñé Espinet J.M.³, Gonzalez-Huix Lladó F.^{3,1}, Working Group on D SEE, and Sedation P ERC

Institutes 1 Clínica Girona, Girona, Spain; 2 Hospital de Palamós, Palamós, Spain; 3 Hospital Universitari Arnau de Vilanova, Lleida, Spain

DOI 10.1055/s-0042-1744653

Aims To determine the equivalence of bile duct cannulation rate(BDCR) and management of pathology(MP), including clearance of common bile duct(c-CBD) and stent placement in case of biliary obstruction(spBO), in ERCP performed with NAAP and monitored-anesthesia care(MAC).

Methods Single-blind non-randomized controlled equivalence trial of patients admitted for ERCP on bicenter study (Hospital Universitari Arnau de Vilanova and Clinica Girona). **Patients:** Consecutive adult patients (> 18 years old) admitted for ERCP. **Intervention:** Blindly assignation of patients by programming office according to the day in which the patient was admitted (Monday: NAAD,

Wednesday-Tuesday:MAC). ESGE performance measures(PM) for ERCP were recorded. **Main outcome measures:** BDCR and MP (cCDB and spBO) in stand-ard programmed ERCP performed with NAAP.

Results We included 938 patients (age: 72.59 ± 0.53 , 50.7 % women): 352(37.5 %) in NAAP and 586(62.5 %) in MAC. Three experts endoscopists (> 1000 ERCP) performed ERCPs. Adequate indication and antibiotic prophylaxis were 94,6 % and 91.7 % respectively; ERCP complexity grade 3/4:51,5 %; total complications(TC):9.2 %; postERCPpancreatitis(PEP):2,5 %; and exitus related to procedure:0,3 %. CR:94,7 %; appropriate MP:92.8 %; cCDB:91,3 % and spBO:92,8 %. Per-protocol analysis showed CR of 93,8 % in NAAP and 95,4 % in MAC, difference(Δ CR):1,36 %, (95 %CI): -0.35 to 0.97. PM was 92,6 % and 93 % in NAAP vs MAC respectively(Δ PM:1,05 %;95 %CI: -0,45 to 0,56). No differences in cCDB and spBO. PEP rate was 2.0 % in NAAP and 2,7 % in MAC (Δ PEP:1,38; 95 %CI: -0.57 to 1.22).TC rate in ERCP were also equivalent.

Conclusions ESGE performance measures in standard ERCP performed with NAAP are equivalent to those performed with MAC. Similarly, there is no difference in complication rate.

OP091 THE ENDOSCOPY SAFETY ATTITUDES QUESTIONNAIRE (ENDO-SAQ): VALIDATION AND RESULTS

Authors Ravindran S.^{1,2,3}, Matharoo M.², Healey C.¹, Marshall S.², Bassett P.⁴, Coleman M.¹, Ashrafian H.³, Darzi A.³, Thomas-Gibson S.^{5,2}

Institutes 1 Joint Advisory Group on Gastrointestinal Endoscopy, London, United Kingdom; 2 St Mark's Academic Institute, Wolfson Unit for Endoscopy, London, United Kingdom; 3 Imperial College London, Surgery and Cancer, London, United Kingdom; 4 Statsconsultancy Ltd, Amersham, United Kingdom; 5 Imperial College London, Metabolism, Digestion and Reproduction, London, United Kingdom

DOI 10.1055/s-0042-1744654

Aims Safety culture is fundamental in healthcare. Safety attitudes, a surrogate for safety culture, have been linked to patient outcomes. We report the results of a national survey of safety attitudes in endoscopy and validation of the Endo-SAQ (Endoscopy Safety Attitudes Questionnaire).

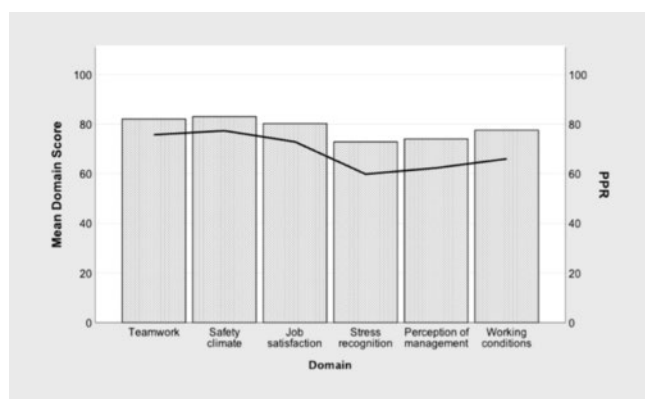
Methods The Endo-SAQ, consisting of 6 domains and 35 question items, was disseminated online to endoscopy staff in UK and Ireland. Outcomes measures were domain scores and percentage of positive responses (PPR) per domain. Descriptive and comparative analyses were performed as well as binary logistic regression to identify predictors of positive scores. Validity and reliability of Endo-SAQ were assessed through confirmatory factor analysis, Cronbach's alpha and composite reliability measures.

Results 453 participants completed the Endo-SAQ. All domains scores were above 70, indicating positive safety attitudes. Teamwork and safety climate scores were the highest rated across domains. Endoscopists scored higher than nursing staff in stress recognition ($p = 0.02$) and working conditions ($p = 0.03$). Joint Advisory Group on Gastrointestinal Endoscopy (JAG) accreditation was a positive predictor in safety climate (OR 1.923, $p = 0.02$) and job satisfaction (OR 2.093, $p = 0.004$) domains. Female gender was a negative predictor in safety climate (OR 0.520, $p = 0.01$), job satisfaction (OR 0.625, $p = 0.047$) and working conditions (OR 0.348, $p < 0.001$) domains. Endo-SAQ met construct validity and reliability thresholds.

► Table 1

Confirmatory factor analysis Goodness-of-fit (tests of model fit)	Value	Accepted threshold
Comparative Fit Index (CFI)	0.972	>0.95
Tucker-Lewis-Index (TLI)	0.97	>0.95
Standardised Root Mean Square Residual (SRMR)	0.045	<0.05
Root Mean Square Error of Approximation (RMSEA)	0.049	<0.05

Conclusions Endoscopy staff in the UK and Ireland have generally positive safety attitudes. There were significant differences between staff subtypes. There is evidence to support the validity and reliability of Endo-SAQ.



► Fig. 1

OP092 COMPARING NUMBER AND RELEVANCE OF FALSE ACTIVATIONS BETWEEN TWO ARTIFICIAL INTELLIGENCE CADE SYSTEMS: THE NOISE STUDY

Authors Spadaccini M.¹, Alfarone L.¹, Da Rio L.¹, Maselli R.¹, Carrara S.¹, Galtieri P.A.¹, Pellegatta G.¹, Fugazza A.¹, Koleth G.², Emmanuel J.³, Anderloni A.¹, Mori Y.⁴, Wallace M.B.⁵, Sharma P.⁶, Repici A.¹, Hassan C.¹

Institutes 1 Humanitas Research Hospital, Department of Gastroenterology and Hepatology, Rozzano, Italy; 2 Hospital Selayang, Department of Gastroenterology and Hepatology, Selangor, Malaysia; 3 Queen Elizabeth Hospital, Department of Gastroenterology and Hepatology, Sabah, Malaysia; 4 Digestive Disease Center, Showa University Northern Yokohama Hospital, Yokohama, Japan; 5 Sheikh Shakhboub Medical City, Endoscopy Unit, Abu Dhabi, United Arab Emirates; 6 Kansas City VA Medical Center, Gastroenterology and Hepatology, Kansas City, United States

DOI 10.1055/s-0042-1744655

Aims Artificial Intelligence(AI)has been shown to be effective in polyp detection, and multiple computer-aided detection(CADe)system have been developed. False positive(FP)activation emerged as a possible way to benchmark CADe performances in clinical practice. The aim of this study is to validate a previously developed classification of FP comparing the performances of different brands of approved CADe systems.

Methods We compared two different consecutive video libraries(40 video per arm)collected at Humanitas Research Hospital with two different CADe system brands(CADe A-CAD-EYE and CADe B-GIGENIUS-).For each video, the number of CADe false activations, the cause and the time spent by the endoscopist to

examine the area erroneously highlighted were reported. The FP activations were classified according to the previously developed classification of false positives(the NOISE classification) according to their cause and relevance.

Results A total of 1021 FP activations were registered across the 40 videos of the Group A(25.5 ± 12.2 FPs per colonoscopy).A comparable number of FPs were identified in the Group B(n = 1028, mean:25.7 ± 13.2 FPs per colonoscopy) (p0.53).Among them, 22.9 ± 9.9(89.8 %, Group A),and 22.1 ± 10.0(86.0 %,Group B)were due to artifacts from bowel wall. Conversely,2.6 ± 1.9(10.2 %)and 3.5 ± 2.1(14 %)were caused by bowel content(p 0.45).Within the Group A each false activation required 0.2 ± 0.9seconds, with 1.6 ± 1.0 (6.3 %) FPs requiring additional time for endoscopic assessment. Comparable results were reported within the Group B with 0.2 ± 0.8 seconds spent per false activation and 1.8 ± 1.2 FPs per colonoscopy requiring additional inspection.

Conclusions The use of a standardized nomenclature permitted to provide comparable results with either of the two recently approved CADe systems.

Role of EUS in detecting malignancy in pancreatic cystic lesions

08:30–09:30

Friday, 29 April 2022

Club A

OP093 INCIDENCE OF PANCREATIC CANCER WITHIN PANCREATIC CYSTIC NEOPLASM: 6-YEAR RESULTS FROM A NATIONWIDE PATHOLOGY DATABASE

Authors van Huijgevoort N.¹, Gorris M.^{1,2}, Farina Sarasqueta A.³, Brosens L.⁴, van Santvoort H.⁵, Groot Koerkamp B.⁶, Bruno M.⁷, Besselink M.², van Hooft J.⁸

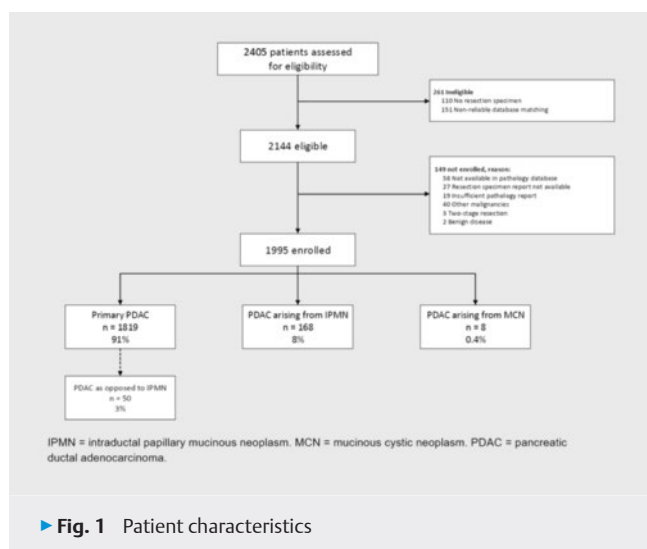
Institutes 1 Amsterdam UMC, University of Amsterdam, Department of Gastroenterology and Hepatology, Amsterdam, Netherlands; 2 Amsterdam UMC, University of Amsterdam, Department of Surgery, Amsterdam, Netherlands; 3 Amsterdam UMC, University of Amsterdam, Department of Pathology, Amsterdam, Netherlands; 4 University Medical Centre Utrecht, Utrecht University, Department of Pathology, Utrecht, Netherlands; 5 University Medical Centre Utrecht, Utrecht University, Department of Surgery, Utrecht, Netherlands; 6 Erasmus MC Cancer Institute, University Medical Center Rotterdam, Department of Surgery, Rotterdam, Netherlands; 7 Erasmus MC Cancer Institute, University Medical Center Rotterdam, Department of Gastroenterology and Hepatology, Rotterdam, Netherlands; 8 Leiden University Medical Center, Department of Gastroenterology and Hepatology, Leiden, Netherlands

DOI 10.1055/s-0042-1744656

Aims Pancreatic cystic neoplasms (PCN) are known precursor lesions for pancreatic ductal adenocarcinoma (PDAC) and thereby pose an opportunity for early detection and curative treatment. The aim of this national retrospective study was to investigate the incidence of PDAC arising from PCN in the Netherlands.

Methods Clinical information from all patients who underwent pancreatic resection for PDAC between 2013 – 2018 was retrieved from the Netherlands Cancer Registry (NCR) and matched with the corresponding pathology reports from the automated national pathology database (PALGA). Primary outcome was the incidence of PDAC arising from PCN. Secondary outcomes were the overall survival between primary PDAC and PDAC arising from PCN and the incidence PDAC as opposed to PCN.

Results After assessing 2405 patients for eligibility, 1991 patients were included (Fig. 1). Primary PDAC was diagnosed in 1819 patients (91 %), of which 50 patients (3 %) had PDAC as opposed to PCN. Invasive PCN was diagnosed in 176 patients (9 %), the majority being invasive IPMN (n = 168, 8 % of total cohort). Overall survival was significantly higher in patients with PDAC arising from PCN (53 % vs. 24 %, p = 0.000) after a median follow-up period of 534 days (IQR 318-894) from diagnosis. This difference remained significant when adjusted for TNM stage in Cox regression analysis (Hazard ratio 0.530 [95 %CI 0.422-0.665]).

► **Table 1**

	PDAC arising from PCN (n = 176)	Primary PDAC (n = 1819)	p-value
Male, n (%)	83 (47)	955 (53)	0.176
Age in years, median (IQR)	69 (62-74)	68 (61-74)	0.481
Perioperative therapy, n (%)			
Chemotherapy	92 (52)	1119 (62)	0.009 * a
Radiotherapy	1 (.6)	74 (4)	0.037 * a
pTNM stage, n (%)			0.000 *
1A	34 (19)	67 (4)	
1B	23 (13)	128 (7)	
2A	25 (15)	251 (14)	
2B	71 (40)	1042 (57)	
3	18 (10)	270 (15)	
4	3 (2)	61 (3)	

Conclusions This nationwide cohort study showed that 9% of resected PDAC was diagnosed as PDAC arising from PCN. Patients with PDAC arising from PCN showed longer survival when compared to patients with primary PDAC.

OP094V EUS, CH-EUS, FNA AND FNB OF DEGENERATED IPMN

Authors Mauriello A.¹, Castellano F.¹, Sacco M.¹, Fimiano F.¹, Gesualdo M.¹, Benazzo G.M.², De Angelis C.G.¹

Institutes 1 Gastroenterology Department, Endoscopy Unit, AOU Città della Salute e della Scienza di Torino, Turin, Italy; 2 Pathology Unit, Department of Medical Sciences, University of Turin, Turin, Italy

DOI 10.1055/s-0042-1744657

This video presents the case of 57-year-old woman with onset of epigastric pain with posterior irradiation, dyspepsia, asthenia and recent weight loss; blood test detected high serum level of Carbohydrate antigen 19-9 (5148 U/ml) without alteration of serum amylase and lipase; on the other hand, abdominal CT showed multiple pancreatic cysts with pancreatic atrophy and no clear masses. EUS-FNA and EUS-FNB were performed obtaining the diagnosis of adenocarcinoma cells in

a context of necrotic tissue. The final diagnosis was IPMN degenerated with a vascular infiltration. Due to vascular infiltration, a chemotherapy regimen was started.

OP095 ESOPHAGOGASTRODUODENAL FINDINGS IN PATIENTS WITH INTRADUCTAL PAPILLARY MUCINOUS NEOPLASMS (IPMNS)

Authors Ben Ami Shor D.^{1,2}, Zelnik Yovel D.^{1,3}, Khader M.¹, Tzadok R.^{1,2}, Scapa E.^{1,2}, Shnell M.^{1,2}, Bar Yishay I.^{1,2}, Ziv Baran T.^{1,2}, Shibolet O.^{1,2}

Institutes 1 Sackler Faculty of Medicine, Tel Aviv University, Tel Aviv, Israel; 2 Department of Gastroenterology, Tel-Aviv Sourasky Medical Center, Tel Aviv, Israel; 3 The Kamila Gonczarowski Institute of Gastroenterology and Liver Diseases, Shamir (Assaf Harofeh) Medical Center, Zerifin, Israel

DOI 10.1055/s-0042-1744658

Aims The association between intraductal papillary mucinous neoplasms (IPMNs) and extra-pancreatic malignancies is controversial. Our aim was to compare the esophagogastroduodenal findings among patients with IPMN and patients with no known IPMN.

Methods A cross sectional study comparing esophagogastroduodenoscopy (EGD) findings of 340 patients with IPMN, to 340 age- and gender-matched participants who underwent an EGD for similar clinical indications from 2004 through 2021. For each patient, only first EGD at the study period was included and new gastric and esophageal cancer, Barrett's esophagus, gastric and duodenal neuroendocrine tumors (NETs), gastrointestinal stromal tumors (GISTs), gastric adenomas and ampullary tumors were assessed. Incidence of new gastric cancer among IPMN patients was also compared with data from the Israel National Cancer Registry (INCR) (updated to 2018).

Results In the IPMN group, new gastric cancer was diagnosed in 4/340 (1.2%), and esophageal cancer in 1/340 (0.3%). The incidence of gastric and esophageal cancer was similar in matched individuals, 5/340 (1.5%) and 0/340, respectively, (p>0.999). Also, the overall incidence of Barrett's esophagus, gastric and duodenal NETs, GISTs, gastric adenomas and ampullary tumors was not significantly differ between patients with IPMN and matched individuals. However, the incidence of gastric cancer was higher in patients with IPMN than expected using the INCR data (Standardized incidence ratio 31.39, p<0.001, CI 8.38-78.76).

Conclusions Patients with IPMN have a significantly higher incidence of gastric cancer than the average risk population in Israel. However, the incidence of esophagogastroduodenal findings is similar among patients with IPMN and patients who undergo EGD for different clinical indications.

OP096 SURGICALLY RESECTED INTRADUCTAL PAPILLARY MUCINOUS NEOPLASM: IS LONG-TERM SURVEILLANCE WARRANTED?

Authors AbouSaleh M.¹, Hossain M.S.¹, Said S.A.-d.¹, Perlmutter B.¹, AlKhayyat M.¹, Martin C.¹, Simons-Linares R.¹, McMichael J.¹, Simon R.¹, Joyce D.¹, Augustin T.¹, Chahal P.¹, Walsh M.¹

Institute 1 Cleveland Clinic Foundation, Cleveland, United States

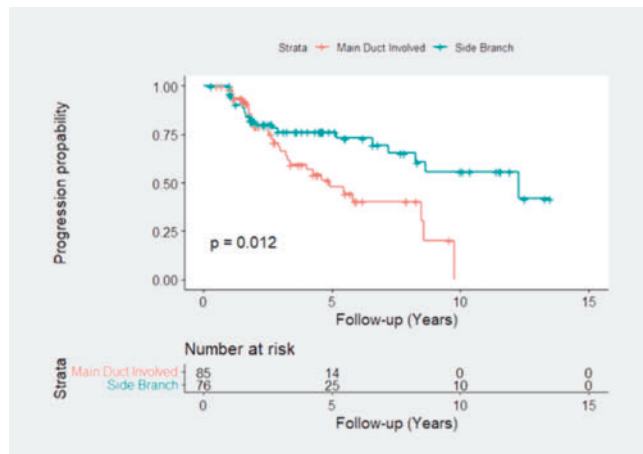
DOI 10.1055/s-0042-1744659

Aims Natural history of remnant pancreas after resection for IPMNs is not well described. Uniform postoperative surveillance recommendations do not exist. In this study, we aim to evaluate the rates and predictors of IPMN progression within the remnant pancreas.

Methods A database of patients who underwent surgical resection for IPMNs was reviewed. Patients with pathology-proven IPMN without malignancy and a minimum one-year postoperative imaging follow-up were included. Total pancreatectomy patients were excluded. Progression was defined as new main pancreatic duct (MPD) dilation, development of new IPMN, increased size of pre-existing IPMN on follow-up imaging, or evidence of pancreatic malignancy. Univariate analysis and Kaplan-Meier estimate curve tests were conducted

Results 166 patients met the inclusion criteria with a median follow-up of 3.8 years. 33.1% patients developed progression. 17%, 9%, 10%, 24% and 11%

patients developed progression at 1-2, 2-3, 3-5, 5-10, and + 10 year intervals, respectively. On baseline pathology of resected IPMNs, 51.2% had MPD involvement while 45.8% were side-branch (SB)-IPMNs. Patients with MPD-involvement on baseline pathology showed significantly earlier progression than SB-IPMNs with a median duration of 4.9 vs. 12.3 years, respectively, $P=0.012$. Among patients who developed progression, 10.9% patients underwent repeat surgical resection and 27.3% underwent endoscopic intervention. 5.5%, 5.5%, and 3.6% patients had evidence of low, high-grade dysplasia, and invasive pancreatic cancer, respectively.



► Fig. 1

Conclusions Following resection for IPMNs, there was high rate of radiological evidence of progression with need for repeat endoscopic or surgical intervention. MPD-involvement on baseline pathology was associated with earlier progression. These findings support long-term surveillance after resection

OP097 PANCREATIC CYST FLUID INTERLEUKIN-1 BETA (IL-1B) LEVEL IN PREDICTING THE RISK OF MALIGNANCY IN PANCREATIC CYSTS.

Authors Abdallah T.¹, Shalaby S.¹, Salem A.¹, Yousef T.¹, Saleh S.¹, Okasha H.², Zaghloul M.³, El-Nady M.²

Institutes 1 Ain Shams University, Internal Medicine, Cairo, Egypt; 2 Cairo University, Internal Medicine, Cairo, Egypt; 3 Kafrelsheikh University, Hepatology, Gastroenterology and Infectious Diseases, Kafrelsheikh, Egypt
DOI 10.1055/s-0042-1744660

Aims The of the current study was to determine the predictive value of cystic fluid IL-1 β in detection of malignant pancreatic cystic lesions and its correlation to the different degrees of dysplasia.

Methods Between January 2018 and November 2020, 50 patients underwent EUS-guided fine needle aspiration (EUS-FNA) for cyst fluid analysis at the Endoscopy unit. Patients were pre-endoscopically consented. Correlative studies on cyst fluid carcinoembryonic antigen (CEA), cyst fluid interleukin 1beta (IL-1 β) and fine needle aspiration (FNA) cytology were performed on a subset of these patients. Demographics and clinical data including preendoscopic serum CA 19-9 were supplemented through electronic medical record review. Pancreatic fluid levels of IL-1 β were measured using commercially available ELISA kits (Cat DLB-50; R&D, Minneapolis, Minn and RPN222; GE Healthcare Life Sciences, Pittsburgh, Penn). The threshold value of IL-1 β (>50 pg/mL)

Results Cyst fluid IL-1 β can differentiate between benign and malignant cysts at cutoff value > 200 pg/ml; the sensitivity and specificity were 84.00% and 56.00% respectively and also can differentiate between mucinous and non-mucinous pancreatic cysts at cutoff value > 150 pg/ml; the sensitivity and

specificity were 83.33% and 53.78% respectively, but cannot differentiate between degrees of dysplasia of IPMN.

► **Table 1** Univariate logistic regression analysis for predictors of malignancy.

	B	p value	Odds ratio (OR)	95% C.I. for OR
Age > 55 ys	3.401	0.000	30	5.294 – 170.015
Size of cyst \leq 55mm	1.992	0.007	7.333	1.716 – 31.343
C.F IL1b > 200 pg/ml	3.520	0.001	33.800	3.895 – 293.305
Mucin stain	3.386	0.002	29.545	3.428 – 254.667

Conclusions Pancreatic cyst fluid IL-1 β can be a promising biochemical cyst fluid marker to differentiate between mucinous and non-mucinous cysts as well as benign and malignant cysts. Further larger studies are needed to validate its role.

OP098 TRAINING MODULES FOR CONFOCAL ENDOMICROSCOPY (CLE) PATTERNS OF PANCREATIC CYSTIC LESIONS (PCLS) RESULTS IN SUSTAINED LEARNING AND ACCURACY IN DIAGNOSIS FOR EARLY CAREER ADVANCED ENDOSCOPISTS

Authors Machicado J.D.¹, Napoleon B.², Akshintala V.³, Bazarbachi A.⁴, Bilal M.⁵, Corral J.⁶, Dugum M.⁶, Han S.⁷, Hussain F.¹, Johnson A.M.⁴, Jovani M.⁸, Kolb J.⁴, Leonor P.⁶, Lee P.¹, Mulki R.⁷, Shah H.², Singh H.⁶, Sanchez Luna S.⁷, Shah S.L.⁶, Singla A.⁷, Vargas E.⁷, Tielleman T.⁷, Dalmacy D.¹, Fry M.⁷, Krishna S.G.⁷

Institutes 1 Mayo Clinic, Eu Claire, WI, United States; 2 Mayo, Eu Claire, WI, United States; 3 Johns Hopkins, Baltimore, MD, United States; 4 Ohio State, Columbus, OH, United States; 5 Veteran's Affairs, Minnesota, United States; 6 Mayo Clinic, Florida, United States; 7 Ohio State University, Columbus OH, United States; 8 University of Kentucky, Lexington, United States
DOI 10.1055/s-0042-1744661

Aims Demonstrate the impact of audiovisual training modules of CLE patterns for early EUS users and assess the durability of training.

Methods Twenty-one gastroenterologists naïve to CLE with varying EUS experience watched a 20-minute audiovisual teaching module outlining the CLE imaging criteria to characterize PCLs. PHASE 1: Participants then watched 80 edited videos with representative EUS-CLE patterns of PCLs with confirmed histopathology. Feedback about cyst histology was provided. Observers were then randomized 1:1 for a refresher feedback session (to review 20 different CLE videos at 4 weeks). PHASE 2: Eight weeks after the initial session, all observers assessed the same 80 videos presented in a different sequence.

Results PHASE 1: progressing through blocks of 20 videos, observers improved their diagnostic accuracy, interobserver agreement (IOA), and degree of confidence to differentiate mucinous from non-mucinous PCLs and specific cyst types ($p < 0.001$, **Table 1**). Observers distinguished mucinous from non-mucinous PCLs with high sensitivity (86%), specificity (82%), accuracy (85%), confidence (76%), and IOA ($k = 0.67$).

PHASE 2: After 8 weeks, the sensitivity (90%), accuracy (89%), high confidence (83%), and IOA ($k = 0.75$) to classify mucinous vs. non-mucinous PCLs significantly improved ($p < 0.05$), suggesting durability of initial training (**Figure 1**). The diagnostic accuracy of EUS-nCLE for all PCL types was > 80% (IPMN: 84%, MCN: 82%, pseudocyst: 96%, SCA: 86%, NET/SPN: 84%). The addition of a refresher feedback session did not modify the results.

	Overall (95% CI)	1–20 (95% CI)	21–40 (95% CI)	41–60 (95% CI)	61–80 (95% CI)	P-value
Mucinous vs. Non-mucinous						
Accuracy	85 (83–87)	74 (69–78)	86 (83–89)	94 (91–96)	86 (83–90)	<0.001
High Confidence, %	76 (74–78)	63 (58–67)	73 (68–77)	85 (81–88)	83 (79–86)	<0.001
IOA, kappa	0.67 (0.63–0.71)	0.47 (0.38–0.55)	0.66 (0.58–0.73)	0.85 (0.80–0.91)	0.70 (0.63–0.77)	
IPMN						
Accuracy	84 (82–85)	71 (67–76)	83 (79–86)	90 (87–93)	90 (88–93)	<0.001
High Confidence, %	63 (60–66)	52 (44–60)	60 (53–66)	65 (59–71)	71 (66–77)	<0.001
IOA, kappa	0.67 (0.63–0.71)	0.43 (0.35–0.51)	0.65 (0.58–0.73)	0.80 (0.75–0.86)	0.80 (0.74–0.86)	
MCN						
Accuracy	82 (80–84)	81 (77–84)	78 (74–82)	85 (82–89)	84 (81–88)	0.018
High Confidence, %	65 (62–68)	56 (48–64)	61 (55–68)	65 (59–71)	74 (68–80)	<0.001
IOA, kappa	0.44 (0.39–0.50)	0.21 (0.10–0.31)	0.28 (0.17–0.39)	0.60 (0.52–0.69)	0.58 (0.49–0.67)	
Cystic-NET or SPN						
Accuracy	88 (86–89)	79 (75–83)	85 (82–89)	95 (93–97)	90 (87–93)	<0.001
High Confidence, %	56 (51–60)	52 (43–60)	47 (36–58)	59 (50–67)	63 (54–72)	0.017
IOA, kappa	0.54 (0.48–0.59)	0.16 (0.4–0.51)	0.56 (0.46–0.65)	0.82 (0.74–0.90)	0.60 (0.49–0.71)	
Pseudocyst						
Accuracy	95 (94–96)	96 (94–98)	92 (90–95)	95 (93–97)	96 (95–98)	0.17
High Confidence, %	50 (46–54)	48 (39–53)	37 (27–46)	60 (51–69)	57 (48–65)	0.003
IOA, kappa	0.51 (0.42–0.60)	0.80 (0.71–0.89)	0.29 (0.11–0.46)	–	–	
SCA						
Accuracy	92 (90–93)	82 (78–86)	96 (93–98)	97 (96–99)	91 (89–94)	<0.001
High Confidence, %	50 (46–54)	50 (42–59)	34 (26–43)	55 (47–64)	60 (51–68)	0.031
IOA, kappa	0.65 (0.60–0.71)	0.44 (0.33–0.55)	–	0.89 (0.83–0.95)	0.71 (0.62–0.80)	

IPMN: intraductal papillary mucinous neoplasm; MCN: mucinous cystic neoplasm; NET: neuroendocrine tumor; SPN: solid pseudopapillary tumor; SCA: serous cystadenoma; IOA: interobserver agreement; CI: confidence interval.

► Fig. 1

Conclusions A teaching intervention for early career endosonographers in CLE image interpretation for classifying PCLs results in durable learning and highly accurate diagnoses of PCLs.

Interval and post colonoscopy colorectal cancer

08:30–09:30

Friday, 29 April 2022

Club E

OP099 ADENOMA DETECTION RATE AND RISK OF INTERVAL POST-COLONOSCOPY COLORECTAL CANCER IN FIT-BASED SCREENING

Authors Wisse P.¹, Erler N.², de Boer S.³, den Hartog B.³, Oudkerk Pool M.³, Terhaar sive Droese J.³, Verwee C.³, Meijer G.⁴, Lansdorp-Vogelaar I.⁵, Kuipers E.¹, Dekker E.⁶, Spaander M.¹

Institutes 1 Erasmus University Medical Center, Gastroenterology and Hepatology, Rotterdam, Netherlands; 2 Erasmus University Medical Center, Biostatistics, Rotterdam, Netherlands; 3 Bevolkingsonderzoek Nederland, Utrecht, Netherlands; 4 Netherlands Cancer Institute, Pathology, Amsterdam, Netherlands; 5 Erasmus University Medical Center, Public Health, Rotterdam, Netherlands; 6 Amsterdam University Medical Center, Gastroenterology and Hepatology, Amsterdam, Netherlands

DOI 10.1055/s-0042-1744662

Aims Adenoma detection rate (ADR) is an essential quality indicator for endoscopists performing colonoscopies for colorectal cancer screening as it is associated with post-colonoscopy colorectal cancers (PCCRCs). Currently, data on ADRs of endoscopists performing colonoscopies in fecal immunochemical testing (FIT)-based screening, the most common screening method, is scarce. Also, the association between ADR and PCCRC has not been demonstrated in this setting. Patients and endoscopists may benefit from an ADR target that minimizes PCCRC risk and represent adequate colonoscopy performance after positive FIT.

Methods We assessed quality indicator performance and PCCRC incidence for colonoscopies in FIT-positive screeners. PCCRCs were classified as interval, a cancer detected before recommended surveillance, or non-interval. The association between ADR and interval PCCRC was evaluated with a multivariable Cox regression model. PCCRC incidence was determined for different ADRs.

Results In total, 383 endoscopists performed 233,945 colonoscopies with a median ADR of 65%. We identified 211 interval PCCRCs. Each 1% increase in ADR was associated with a 7% decrease in interval PCCRC risk (HR 0.93, $p < 0.001$). For every 1,000 patients undergoing colonoscopy, the expected number of interval PCCRC diagnoses after 5 years was approximately 1.5 for endoscopists with ADR of 70%, compared to two, three or four for endoscopists with ADRs of 65%, 60% and 55%, respectively.

Conclusions ADR is inversely associated with the risk of interval PCCRC in FIT-positive colonoscopies. Endoscopists performing colonoscopy in FIT-based screening should aim for markedly higher ADRs compared to primary colonoscopy. Based on our results we recommend an ADR target of 60%.

OP100 SENSITIVITY OF FAECAL IMMUNOCHEMICAL TEST FOR COLORECTAL CANCER SCREENING AND RISK FACTORS FOR INTERVAL CANCER: A FRENCH POPULATION-BASED STUDY

Authors Canévet M.¹, Pruvost-Couvreux M.², Badic B.³, Brousse-Potocki J.⁴, Le Reun S.⁴, Bouzeloc S.², Kermarrec T.², Noursbaum J.-B.¹, Robaszkiewicz M.¹, Reboux N.¹, Quéhérvé L.¹

Institutes 1 Brest University Hospital, Gastroenterology Department, Brest, France; 2 Digestive tumour registry of Finistère, Brest, France; 3 Brest University Hospital, Digestive surgery department, Brest, France; 4 CRCDC Bretagne, Rennes, France

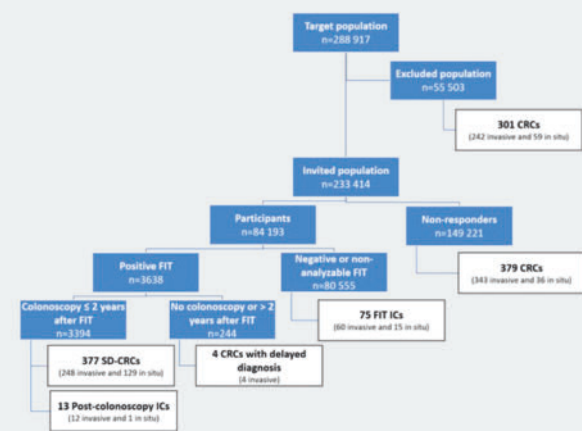
DOI 10.1055/s-0042-1744663

Aims Faecal immunochemical test (FIT) is intended to detect pre-symptomatic lesions to reduce the incidence and mortality of colorectal cancer (CRC). The objectives of this study were to determine the FIT sensitivity, whether diagnostic circumstances had an impact on treatment and survival, and risk factors for interval cancer (IC).

Methods This population-based study evaluated the 2016-2017 CRC screening campaign in Finistère, France. CRCs were classified according to diagnostic circumstances: screen-detected CRC (SD-CRC), CRC with delayed diagnosis, FIT-IC, Post-colonoscopy IC, CRC in non-responders and CRC in the excluded population.

Results The FIT sensitivity for invasive CRC was 80.5%. The median time from FIT to diagnostic colonoscopy was 72 days for SD-CRCs, 389 days for FIT-ICs, and 862 days for post-colonoscopy ICs. SD-CRCs were more frequently treated with endoscopic and surgical resection alone (60.9%), as opposed to FIT-ICs, which were frequently treated with surgery combined with chemotherapy or radiation therapy (70%). Disease-specific 3-year survival was higher in the SD-CRC group (94%) than in the FIT-IC group (73%), non-responders (67%) and excluded subjects (78%; $p < 0.0001$). In multivariate analysis, stage III (OR:2.78) and IV (OR: 3.79), proximal (OR:5.00) and rectal locations (OR:7.73) were risk factors of being diagnosed with FIT-IC rather than SD-CRC. The FIT positivity threshold maximizing the sum of sensitivity and specificity was found to be 17 µg/g, with 14 additional invasive CRCs diagnosed.

Conclusions Our study confirms the good sensitivity of FIT. SD-CRCs are primarily early-stage CRCs accessible to less invasive curative treatments and therefore with better survival.



► Fig. 1

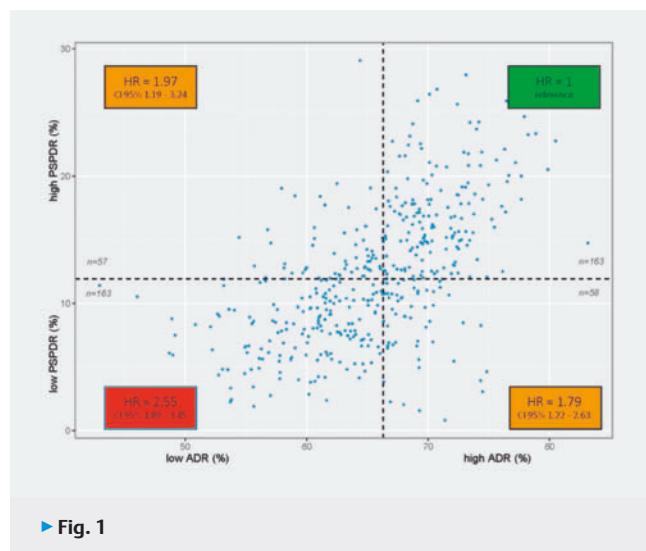
OP101 PROXIMAL SERRATED POLYP DETECTION RATE AND INTERVAL POST-COLONOSCOPY COLORECTAL CANCER RISK

Authors van Toledo D.¹, Ijspeert J.¹, Bossuyt P.², Van Leerdam M.^{3,4}, Van Der Vlugt M.¹, Lansdorp-Vogelaar I.⁵, Spaander M.⁶, Dekker E.¹
Institutes 1 Amsterdam UMC, location AMC, Gastroenterology & Hepatology, Amsterdam, Netherlands; 2 Amsterdam UMC, location AMC, Department of Epidemiology and Data Science, Amsterdam, Netherlands; 3 Netherlands Cancer Institute-Antoni Van Leeuwenhoek, Gastroenterology, Amsterdam, Netherlands; 4 Leiden University Medical Center, Department of Gastroenterology and Hepatology, Leiden, Netherlands; 5 Erasmus University Medical Center, Department of Public Health, Rotterdam, Netherlands; 6 Erasmus University Medical Center, Department of Gastroenterology and Hepatology, Rotterdam, Netherlands
DOI 10.1055/s-0042-1744664

Aims The adenoma detection rate (ADR) is a well-established colonoscopy quality indicator and inversely associated with interval post-colonoscopy colorectal cancer (PCCRC) incidence. However, interval PCCRCs frequently develop from serrated polyps. The proximal serrated polyp detection rate (PSPDR) was advocated as quality indicator, but its association with interval PCCRCs has not yet been studied.

Methods Using colonoscopy data from the Dutch fecal immunochemical test (FIT) based CRC screening program between 2014 and 2020, we evaluated the association between endoscopists' individual PSPDR and their patients' risk of interval PCCRC with a multilevel Cox proportional-hazard regression analysis. We additionally evaluated the risk of interval PCCRC for endoscopists with a PSPDR and ADR above the median versus endoscopists with either one or both parameters below the median.

Results In total, 277,555 colonoscopies performed by 441 endoscopists were included. Median PSPDR was 11.9% (range, 1-29%). Median ADR was 66.3% (range, 43.0-83.2%). During a median follow up of 33 months, 305 interval PCCRCs were detected. Each percent higher PSPDR of endoscopists was associated with a 7% lower risk of interval PCCRC (HR 0.93, CI95% 0.90-0.95). Compared to endoscopists with a PSPDR > 11.9% and ADR > 66.3%, the hazard ratio of interval PCCRC for endoscopists with a low-PSPDR/high ADR was 1.79 (CI95% 1.22-2.63), for high-PSPDR/low-ADR 1.97 (1.19-3.24) and for low-PSPDR/low-ADR 2.55 (1.89-3.45).



► Fig. 1

Conclusions The PSPDR of an endoscopist is inversely associated with the incidence of interval PCCRC. Implementation of PSPDR monitoring, in addition to ADR monitoring, can contribute to optimize cancer prevention in FIT-based screening programs.

OP102 PROXIMAL SERRATED POLYP DETECTION RATE IS ASSOCIATED WITH REDUCED RISK FOR CRC MORTALITY IN SCREENING PATIENTS

Authors Zessner-Spitzenberg J.¹, Waldmann E.^{1,2}, Jiricka L.^{1,2}, Rockenbauer L.-M.^{1,2}, Hinterberger A.^{1,2}, Majcher B.^{1,2}, Trauner M.¹, Ferlitsch M.^{1,2},
Institutes 1 Medical University of Vienna, Vienna, Austria; 2 Quality Assurance Working Group, Austrian Society for Gastroenterology and Hepatology, Vienna, Austria
DOI 10.1055/s-0042-1744665

Aims Patients with serrated polyps (SP) are at increased risk for colorectal cancer (CRC), however, evidence for a dedicated SP detection rate is lacking. The aim of this study was to investigate whether screening patients with low PSDR endoscopists are at increased risk for CRC mortality.

Methods We conducted a retrospective analysis of prospectively built database within of Austrian quality assurance program for screening colonoscopy. A corresponding PSDR cutoff for an ADR of 25% was calculated by univariable linear regression. Whether PSDR was associated with CRC mortality in patients with high-risk adenomas or SP was assessed by Cox proportional hazards model.

Results 203,373 screening colonoscopies and 7632 follow-up examinations were analyzed. ADR and PSDR showed a moderate correlation ($r = 0.49$, $p < 0.001$), and the corresponding PSDR value for an ADR performance standard of $\geq 25\%$ was $\geq 3.68\%$. High-risk screening patients were at increased risk for CRC mortality when their respective endoscopist had a PSDR $< 3.68\%$ (HR 3.97, CI 1.04-15.06), but not when screening was performed by an endoscopist with a PSDR $\geq 3.68\%$ (HR 0.72, CI 0.07-6.92).

Conclusions PSDR is associated with reduced risk for CRC death in screening patients with high-risk adenomas and SP. We support the inclusion of the PSDR with a minimum standard of 3.68% as a quality parameter to ensure optimal surveillance of SP.

OP103 POST-POLYPECTOMY COLORECTAL CANCER RISK IN IMMUNOCHEMICAL FAECAL TEST SCREENING PROGRAMS

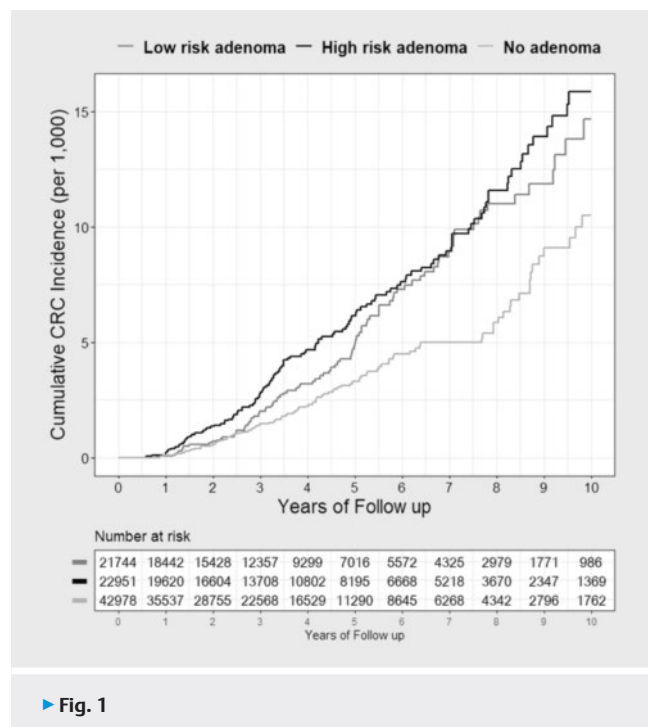
Authors Antonelli G.^{1,2}, Zorzi M.³, Battagello J.³, Hassan C.⁴
Institutes 1 Ospedale dei Castelli Hospital, Department of Gastroenterology and Digestive Endoscopy, Rome, Italy; 2 Sapienza University of Rome, Department of Anatomical, Histological, Forensic Medicine and Orthopedics Sciences, Rome, Italy; 3 Azienda Zero, Veneto Tumor Registry, Padova, Italy; 4 Humanitas University, Department of Biomedical Sciences, Rozzano (MI), Italy
DOI 10.1055/s-0042-1744666

Aims Post-Faecal Immunochemical Test (FIT) colonoscopy represents a highly disease-enriched setting, where nearly 1/3 of all examinations harbour an advanced adenoma. Post-polypectomy endoscopic surveillance is one of the major drivers of endoscopic services work overload but its efficacy in terms of CRC risk reduction can be limited. Aim of our study was to investigate the post-polypectomy CRC incidence and mortality risk in a well-defined screening population of FIT + subjects after resection of low- (LRA) or high-risk adenomas (HRA).

Methods We retrieved data from a cohort of patients undergoing post-polypectomy surveillance after colonoscopy and polypectomy within a FIT-based CRC screening program in Italy between 2002 and 2017. Main outcomes were CRC incidence and mortality risks according to type of adenoma (LRA/HRA) removed at colonoscopy. The absolute risk was calculated as a number of events (CRCs, CRC deaths) per 100,000 person-years of follow-up.

Results Overall, we included 87,673 colonoscopies (133 endoscopists). Of these, 42,978 (49%) were negative, 21,744 (24.8%) had a LRA and 22,951 (26.2%) a HRA. After median follow-up of 4.4 years, a total of 325 CRCs were diagnosed, and 49 CRC related deaths were observed. CRC incidence risk was increased for patients with LRAs (HR 1.42, 95%CI 1.07 – 1.88) and HRAs (HR

1.68, 95% CI 1.29-2.18), compared to those with a negative colonoscopy. No difference in terms of CRC mortality risk were found between negative colonoscopy, LRAs and HRAs.



► Fig. 1

Conclusions CRC incidence risk is higher in patients with baseline adenomas at colonoscopy, supporting follow-up in the context of an organised screening program.

OP104 INTERVAL CANCER IN DANISH COLORECTAL CANCER SCREENING PARTICIPANTS WITH FAECAL IMMUNOCHEMICAL TEST VALUES BELOW 10 MICROGRAM OF HAEMOGLOBIN PER GRAM OF FAECES

Authors Deding U.^{1,2}, Plantener E.¹, Madsen J.B.³, Al-Najami I.¹, Kaalby L.^{1,2}, Kobaek-Larsen M.^{1,2}, Bjørsum-Meyer T.^{1,2}, Baatrup G.^{1,2}

Institutes 1 Odense University Hospital, Department of Surgery, Odense, Denmark; 2 University of Southern Denmark, Department of Clinical Research, Odense, Denmark; 3 University Hospital Lillebælt, Department of Biochemistry and Immunology, Vejle, Denmark

DOI 10.1055/s-0042-1744667

Aims A faecal immunochemical test (FIT) value threshold of 20 microgram haemoglobin per gram (µg hb/g) faeces has been set in the Danish colorectal cancer (CRC) screening program (90% have FIT-values < 10). We aimed to investigate the incidence rate (IR) of interval CRC and other cancers in this population stratified by FIT-value.

Methods Using the Danish National registries, we included CRC screening participants from the Region of Southern Denmark invited in 2014-16 with a FIT-value < 10 µg/g faeces. Screening in Denmark is biennial and follow-up was therefore limited to two years. Individuals with previous CRC or other cancer diagnosis, respectively, were excluded, resulting in different sample sizes. IRs were estimated per 1000 person-years (PY). Hazard ratios (HR) were estimated using multivariate cox proportional hazards regression models adjusted for age and sex. Confidence intervals for CRC and death rates were estimated using the Exact Test for a Poisson distribution.

Results In total, 175 CRCs were registered in 188,255 individuals. 7,517 other cancers were registered in 170,835 individuals. CRC IR was 0.47 per 1000PY (range 0.40-1.47). Other cancer IR was 22.15 per 1000PY (range 21.78-28.24). The HR for CRC was 2.4 for 4-6.9 µg/g faeces, and 3.0 for 7-9.9 µg/g faeces, compared to <4 µg/g faeces. Substantial increases in risk was not observed for other cancers (Table 1).

► **Table 1** Incidence rates and hazard ratios.

FIT-value	CRC Incidence rate per 1000 PY (CI95%), PY	CRC – HR (CI95%), n	Other cancer Incidence rate per 1000 PY (CI95%), PY	Other cancer – HR (CI95%)
<4 µg/g faeces	0.40 (0.33-0.47), PY = 343,592	Reference, n = 172,589 (91.7%)	21.78 (21.27-22.31), PY = 311,736	Reference, n = 156,883 (91.8%)
4-6.9 µg/g faeces	1.13 (0.72-1.66), PY = 22,199	2.44 (1.59-3.74), n = 11,203 (5.9%)	25.59 (23.41-27.92), PY = 19,773	1.15 (1.06-1.26), n = 10,005 (5.9%)
7-9.9 µg/g faeces	1.47 (0.78-2.52), PY = 8,838	3.03 (1.72-5.36), n = 4,463 (2.4%)	28.24 (24.63-32.23), PY = 7,790	1.04 (0.91-1.19), n = 3,947 (2.3%)
Total	0.47 (0.40-0.54), PY = 374,630	- n = 188,255	22.15 (21.66-22.66), PY = 339,299	- n = 170,835

Conclusions The risk of interval cancer in biennial CRC screening is significantly increased even at modest increases in FIT-values. Screening programs may benefit from differentiated screening intervals defined by the FIT-value.

Altered anatomy: Finding solutions
Friday, 29 April 2022

08:30-09:30
Club H

OP105V NOVEL TECHNIQUE TO INSERT LARGE CALIBER SELF-EXPANDING METAL STENTS DURING BALLOON-OVERTUBE ENTEROSCOPY (BAE)-ASSISTED ERCP

Authors Mönkemüller K.¹, Kröner T.¹, Martínez-Alcalá A.¹

Institute 1 Ameos University Teaching Hospital, Gastroenterology, Halberstadt, Germany

DOI 10.1055/s-0042-1744668

When performing device-assisted-ERCP the ability to place large caliber plastic stents or fully-covered self-expanding-metal stents (SEMS) is limited because the working channel of the scope is too narrow and will not allow passage of these devices and utensils. Our technique consists of utilizing the overtube as a "giant working channel", inserting a wire into the bile ducts, removing the scope, and then inserting the self-expanding-metal-stent over-the-wire, through the overtube under fluoroscopic control. In addition, the overtube may be left in situ to allow for insertion of standard or ultraslim scopes to perform direct cholangioscopy, laser lithotripsy and stone removal.

OP106 EUS-DIRECTED TRANSGASTRIC ERCP (EDGE) VERSUS LAPAROSCOPY-ASSISTED ERCP (LA-ERCP) IN PATIENTS WITH ROUX-EN-Y GASTRIC BYPASS (RYGB): A SYSTEMATIC REVIEW AND META-ANALYSIS

Authors Lira De Oliveira V.¹, Mendonça Proença I.¹, Silvino Do Monte Junior E.¹, Marques Bernardo W.¹, Turiani Hourneaux de Moura D.¹, Cândido Hemerly M.¹, Yvamoto E.Y.¹, Boraschi Vieira Ribas P.H.¹, Braga Ribeiro I.¹, Guimaraes Hourneaux De Moura E.¹

Institute 1 Hospital das Clínicas da Faculdade de Medicina da Universidade de São Paulo – HC/FMUSP, Gastrointestinal Endoscopy Unit, São Paulo, Brazil

DOI 10.1055/s-0042-1744669

Aims Performing ERCP is challenging in patients with RYGB and it is not well defined which is the best approach. Although EDGE is arising as a new technique with promising and similar outcomes compared to LA-ERCP, better quality of evidence about this question is still required.

Methods We searched on electronic databases (PUBMED and EMBASE) through November 2021 to identify studies comparing EDGE and LA-ERCP techniques. Outcomes measured were technical success, adverse and severe adverse events, length of hospitalization and procedure time. Patient baseline characteristics and descriptive data related to EDGE procedure were also extracted.

Results A total of 5 studies, all retrospective cohorts were included, representing a sample of 268 patients. There was no significant difference between the groups in technical success, adverse events and severe adverse events. The length of hospitalization was shorter in the EDGE group (MD = -1.2 days; 95% CI - 1.86 to - 0.53; $I^2 = 47\%$; $p = 0.0004$) as well as the procedure time (MD = 98.62 min; 95% CI - 113.62 to - 83.63; $I^2 = 16\%$; $p < 0.00001$). Descriptive data in the EDGE group demonstrated fistula closure in most patients (85%), usually through some endoscopic method, and no average weight gain was reported ($n = 90$).

Conclusions EDGE and LA-ERCP are both adequate techniques to perform ERCP in RYGB patients, with comparable high success rates and low adverse events. However, EDGE is a less invasive technique with shorter length of hospitalization and procedure time and may be a valid option in some cases.

OP107V RENDEZVOUS DOUBLE-BALLOON-ENTEROSCOPY ERCP AND PERCUTANEOUS TRANSHEPATIC CHOLANGIODRAINAGE (PTCD) IN THE SETTING OF ROUX-EN-Y HEPATICOJEJUNOSTOMY AFTER LIVER TRANSPLANT

Authors Mönkemüller K.¹, Kröner T.¹, Alvaro Martínez-Alcalá A.¹

Institute 1 Ameos University Teaching Hospital, Gastroenterology, Halberstadt, Germany

DOI 10.1055/s-0042-1744670

We performed a double-balloon-enteroscopy ERCP in a patient with Roux-en-Y hepaticojejunostomy after liver transplant. The patient had undergone prior percutaneous transhepatic cholangiodrainage (PTCD) due to cholestasis and a tight hepaticojejunostomy stenosis. During DBE we reached the hepaticojejunostomy endoscopically, but due to massive looping of the enteroscope it was impossible to advance any therapeutic devices through the scope. Thus, we changed to combined DBE-ERCP with PTCD rendezvous. First, we dilated the hepaticojejunostomy percutaneously using endoscopic controlled-radial-expansion balloons, and then placed the large caliber (10 Fr) endoscopic plastic stents through-the-skin under endoscopic control, with excellent results.

OP108V ENDOSCOPIC ULTRASOUND-GUIDED ANTEGRADE STENTING IN BENIGN BILIARY DISEASE WITH ALTERED ANATOMY (ROUX-EN-Y) AND EXTREME AGE PATIENT

Authors Luna-Rodriguez D.¹, Garcia-Sumalla A.¹, Velásquez-Rodriguez J.¹, Consiglieri C.¹, Maisterra S.¹, Gornals J.B.¹

Institute 1 Bellvitge University Hospital, Interventional Endoscopy Unit, Barcelona, Spain

DOI 10.1055/s-0042-1744671

A 91yo man with history of Roux-en-Y reconstruction was admitted due to acute cholangitis. Cholangio-MRI: choledocholithiasis with intra and extrahepatic bile duct dilatation. A linear echoendoscope was used to perform an endoscopic biliary drainage. Firstly, EUS-guided biliary accesses by transgastric puncture of left intrahepatic biliary radical, confirmed by serum-instillation and bile-aspiration. Secondly, advancement of a guidewire anterogradely until reach enteral loop, through the papilla y by fluoroscopy-guidance. Finally, a transgastric-hepatic ostomy using a 6-Fr cystotome, and antegrade papiloplasty using a CRE balloon allowed a EUS-guided antegrade stenting (Biliary fully-covered metal stent, 60 x 10mm) without incidences.

OP109V ENDOSCOPIC ULTRASOUND (EUS)-GUIDED GASTROENTEROSTOMY WITH LUMEN APPOSING METAL STENT (LAMS) AS RESCUE THERAPY FOR THE MANAGEMENT OF GASTRIC OUTLET OBSTRUCTION (GOO) AFTER DUODENAL STENT FAILURE

Authors Di Mitri R.¹, Amata M.¹, Mocciano F.¹, Conte E.¹, Bonaccorso A.¹, Scrivo B.¹, Cali A.¹, Scimeca D.¹

Institute 1 ARNAS Civico – Di Cristina – Benfratelli Hospital, Gastroenterology and Digestive Endoscopy, Palermo, Italy

DOI 10.1055/s-0042-1744672

A 79-year-old woman with pancreatic neoplasia, previously treated with uncovered duodenal self-expandable metal (SEMS) for GOO, was admitted for jaundice and vomit. Endoscopy confirmed SEMS's occlusion for neoplastic ingrowth.

EUS-guided choledoco-duodenostomy was performed using a 10x10mm electrocautery-enhanced LAMS (Hot-Axios, Boston Scientific). Novel SEMS was deployed through the previous duodenal stent with partial expansion of distal flange due to extended neoplastic infiltration. Considering the stent-in-stent technique failure, EUS-guided gastroenterostomy with a 20x10mm Hot-Axios was performed in a "free-hand" fashion. A 0.035-inch guidewire was preventively passed through the LAMS delivery system and advanced into the jejunum to preserve the route.

OP110V ERCP IN A PATIENT WITH ROUX-EN-Y HEPATOJEJUNOSTOMY STENOSIS SUCCESSFULLY MANAGED BY ARGON PLASMA COAGULATION AND DILATION

Authors Espinel J.¹, Pinedo E.², Jiménez M.¹, Suarez P.¹

Institutes 1 Hospital Universitario de León, Endoscopy Unit, León, Spain;

2 Hospital Universitario de León, Radiology, León, Spain

DOI 10.1055/s-0042-1744673

A 46 year-old-woman with Roux-en-Y hepaticojejunostomy (HJ) after iatrogenic bile duct injury during a cholecystectomy 10 years ago, was admitted for cholangitis. An MRCP showed a stenosis of the HJ anastomosis. An ERCP was carried out using an SB enteroscope with a distal cap. Then, we could see a very narrow right-HJ stenosis that just allowed a 0.035 guidewire to pass through, which prevented the passage of the dilator catheter. Thus, we applied APC in the stenosis which allowed to pass through the dilation catheter. We dilated the stenosis with a 8 mm balloon catheter. No complications happened.

Bariatric endoscopy: efficacy and outcomes 10:00–11:00
Friday, 29 April 2022 Club A

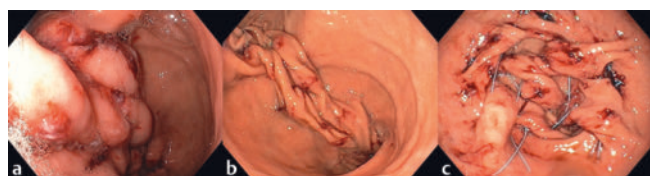
OP111 PRELIMINARY RESULTS OF A PROSPECTIVE, SINGLE CENTER, RANDOMIZED CONTROLLED STUDY ON FEASIBILITY, SAFETY AND EFFICACY OF THREE DIFFERENT TECHNIQUES OF ENDOSCOPIC GASTROPLASTY

Authors Vadalà di Prampero S.F.¹, Masia S.², Bazzu P.², Cosseddu V.², Di Maio F.², Manzoni G.², Rocchi C.¹, Massidda M.¹, Milano V.², Pagliara D.², Bua A.², Delogu G.^{2,3}, Rinaldi P.^{2,4}, Giustacchini P.^{2,4}, Bulajic M.^{1,5}
Institutes 1 Mater Olbia Hospital, Gastroenterology and Digestive Endoscopy, Olbia, Italy; 2 Mater Olbia Hospital, Olbia, Italy; 3 Università Cattolica del Sacro Cuore, Rome, Italy; 4 Fondazione Policlinico Universitario Agostino Gemelli IRCCS, Rome, Italy; 5 Faculty of Medicine, University of Belgrade, Belgrade, Serbia
DOI 10.1055/s-0042-1744674

Aims Endoscopic Gastroplasty (EG) is an endoscopic therapy focusing on gastric body remodeling to treat mostly I and II grade of obese patients. Our study aimed to assess feasibility, safety, and efficacy of endoscopic sleeve gastroplasty (ESG), endoluminal vertical gastroplasty (EVG), and distal primary obesity surgery endoluminal (D-POSE).

Methods This was a prospective, single center, randomized controlled study (ClinicalTrials.gov NCT04854317) of patients who underwent EG through ESG or EVG or D-POSE for the treatment of obesity. Outcomes included technical success rate, serious adverse event rate, and efficacy of these three procedures at inducing weight loss, improving obesity-related comorbidities and quality of life.

Results Between July 2020 and April 2021, 54 obese (body mass index 37.1 ± 2.9 kg/m²) patients (mean age, 45 ± 10 years; sex, female 51 (94.4%); baseline comorbidities in Table 1) underwent EG through ESG or EVG or D-POSE (Figure 1, respectively). The technical success rate was 100%. The stomach was shortened by 11.4 ± 4.2 cm, representing a 35.5% reduction. The serious adverse event rate was 0%. At 6 months, patients experienced 15.5 ± 5.1 % total body weight loss. Fifty-three (98.1%) patients achieved at least 5% total body weight loss, and 46 patients (85.2%) achieved at least 25% excess weight loss. Fatty liver disease, hypertension, hyperlipidemia, diabetes, and obstructive sleep apnea improved after the procedure. Also the quality of life measured by BAROS test improved at 6-month follow-up ($p < 0.01$).



► Fig. 1

► Table 1

Fatty Liver disease	38 (70.0%)
Hypertension	14 (25.9%)
Hyperlipidemia	9 (16.7%)
Obstructive sleep apnea	8 (14.8%)
Type 2 diabetes mellitus/GERD	6 (11.1%)

Conclusions Endoscopic Gastroplasty through ESG, EVG and D-POSE, focusing on gastric body reduction are technically feasible, safe and effective for treatment of obese patients.

OP112 ENDOSCOPIC SLEEVE GASTROPLASTY USING THE ENDOMINA DEVICE AS A BRIDGE-TO SURGERY PROCEDURE FOR SUPEROBES PATIENTS

Authors Prinz F.¹, Gröhl K.¹, Ebigo A.¹, Schnoy E.¹, Messmann H.¹, Goelder S.K.², Nagl S.¹

Institutes 1 University Hospital Augsburg, Gastroenterology, Augsburg, Germany; 2 Ostalb Klinikum, Aalen, Germany

DOI 10.1055/s-0042-1744675

Aims Endoscopic sleeve gastroplasty (ESG) is a minimally invasive bariatric procedure that reduces the gastric volume and delays gastric emptying to facilitate weight loss. The effectiveness and safety of ESG in weight loss has mainly been described for patients with class I and II obesity, but not routinely for superobese and high-risk patients. This study aims to evaluate the safety, feasibility, and efficacy of ESG for superobese and high-risk patients as a bridge to surgery (BTS) procedure.

Methods Eligible patients characterized as high-risk for bariatric surgery due to high BMI [$50-80$ kg/m²] or severe comorbidities, undergoing ESG as a BTS procedure in a two-step concept (first endoscopic, second surgical) between August 2018 and October 2021 at the University Hospital Augsburg were enrolled prospectively. ESG was performed using Endomina (Endo Tools Therapeutics, Gosselies, Belgium). Primary outcomes included technical success, procedure time, absolute weight loss (Δ Weight, kg), change in body mass index (Δ BMI, kg/m²), total body weight loss (TBWL, %) and excess weight loss (EWL, %) at 6 months and adverse events.

Results In total, 8 patients (mean age: $46.4 (\pm 10.3)$ years, 75% female) underwent ESG as a BTS procedure. ESG was successfully performed for all patients. Mean procedure time was $128.3 (\pm 22)$ min. Baseline weight and BMI were $196.3 (\pm 51.4)$ kg and $67.0 (\pm 9.0)$ kg/m². Follow-up data were obtained from 4 patients. At 6 months Δ weight, Δ BMI, %TBWL, %EWL were $30.0 (\pm 2.9)$ kg, $10.9 (\pm 1.8)$ kg/m², $17.6 (\pm 3.9)$ %, $30.1 (\pm 9.3)$ %, respectively. No adverse events were observed.

Conclusions ESG can be used as a safe and effective BTS procedure for super-obese and high-risk patients

OP113 WEIGHT-LOSS ENDOSCOPY TRIAL (WET): A MULTI-CENTER, RANDOMIZED, CONTROLLED TRIAL COMPARING WEIGHT LOSS IN ENDOSCOPICALLY IMPLANTED DUODENAL-JEJUNAL BYPASS LINERS VS. INTRAGASTRIC BALLOONS VS. A SHAM PROCEDURE

Authors Hoffmeister A.¹, Hollenbach M.¹, Prettin C.², Gundling F.³, Schepp W.³, Seufert J.⁴, Stein J.⁵, Aberle J.⁶, Feisthammel J.¹, Petroff D.²

Institutes 1 University of Leipzig Medical Center, Division of Gastroenterology, Medical Department II, Leipzig, Germany; 2 University of Leipzig, Clinical Trial Center Leipzig, Leipzig, Germany; 3 Bogenhausen Clinic, Clinic for Gastroenterology, Hepatology and Gastrointestinal Oncology, Munich, Germany; 4 University of Freiburg, Clinic for Internal Medicine II; 5 Division of Endocrinology and Diabetology, Freiburg, Germany; 6 Sachsenhausen Clinic, Clinic for Internal Medicine; 7 Division of Gastroenterology; 8 Frankfurt, Germany; 9 University of Hamburg-Eppendorf, Clinic for Endocrinology, Diabetology, Adiposity and Lipids, Hamburg, Germany
DOI 10.1055/s-0042-1744676

Aims Obesity is a global problem leading to reduced life expectancy and obesity-related co-morbidities. Surgical interventions are effective but accompanied by risk of serious complications. Endoscopic procedures comprise the intragastric-balloon (IB) and the duodenal-jejunal-bypass-liner (DJBL). A randomized comparison was not undertaken so far.

Methods We performed a prospective, patient-and-assessor-blinded, controlled trial at comparing weight loss in IB vs. DJBL vs. sham procedure (2:2:1 ratio). Patients with a BMI > 35 kg/m² or > 30 with obesity-related comorbidities were included. The IB was removed after 6 months and the DJBL after 12 months. Main objective was successful weight loss (> 10% from baseline) 12 months after explantation. Secondary outcomes were changes in co-morbidities, quality of life and complications.

Results 33 patients were randomized. Recruitment has to be stopped suddenly in November 2017 after the DJBL device lost its CE mark in Europe. 11 patients received DJBL, 15 IB and 7 were allocated to sham group. Blinding was feasible in all patients. Weight decreased from baseline until explantation (DJBL: 129.4 ± 28.3 kg to 107.4 ± 16.7 kg; IB: 118.3 ± 22.8 kg to 107.4 ± 25.7 kg; sham: 134.6 ± 18.0 kg to 131.2 ± 14.3 kg at 12 months) but patients regained weight almost to baseline level 12 months after explantation. Only one patient in IB group reached the primary endpoint. Gastrointestinal disorders were most common adverse events in all groups.

Conclusions Endoscopic bariatric procedures failed to achieve effective weight loss 12 month after explantation of the devices. Results of this trial need to be interpreted with caution due to its preliminary termination.

OP114 OUTCOMES OF ENDOSCOPIC SLEEVE GASTROPLASTY IN THE ELDER POPULATION

Authors Matteo M.V.^{1,2,2}, Bove V.^{1,2}, Pontecorvi V.^{1,2}, De Siena M.^{1,2}, Carlini G.^{1,2}, Massari C.^{1,2}, Antonini N.^{1,2}, Giannetti G.^{1,2}, Costamagna G.^{1,2}, Boskoski I.^{1,2}

Institutes 1 Università Cattolica del Sacro Cuore, Center for Endoscopic Research Therapeutics and Training (CERTT), Rome, Italy; 2 Policlinico A. Gemelli IRCCS, Rome, Italy

DOI 10.1055/s-0042-1744677

Aims With the aging of the population and the epidemic spread of obesity, the frequency of elder individuals with obesity is steadily growing. In this case series, we evaluate for the first time the short and medium-term outcomes of endoscopic sleeve gastroplasty (ESG) in obese patients aged 65 years and older.

Methods A retrospective analysis was done on a prospective database reporting patients that underwent ESG between November 2017 and April 2021; patients aged 65 years and older were included in our analysis. The percentage of excess weight loss (%EWL) and total body weight loss (%TBWL), the Bariatric Analysis and Reporting Outcome System (BAROS) questionnaire and the presence of comorbidities were recorded during follow-up.

Results Of 263 obese patients treated with ESG, 16 were 65 of age and older (7 male) with a mean age of 67.6 (range 65-75) and a mean BMI of 41.1 ± 5.8 kg/m². Changes in weight loss parameters and in BAROS score are reported in Table 1. Five of the nine patients with arterial hypertension and two of the three diabetic patients reduced or removed their medications, and two of the five patients with obstructive sleep apnea were able to discontinue therapy with CPAP (continuous positive pressure equipment) within 12 months following ESG. No adverse events were recorded.

► **Table 1** Changes in weight-related parameters and in the BAROS score in patients over 65 years following ESG

Variable	1 month n = 16	3 months n = 16	6 months n = 13	12 months n = 10
Percentage of TBWL (%) mean ± SD	9.5 ± 3.0	14.0 ± 3.0	15.5 ± 4.0	16.8 ± 7.9
Percentage of EWL (%) mean ± SD	26.5 ± 14.0	37.8 ± 11.0	41.7 ± 14.0	41.3 ± 17.7
BAROS score mean ± SD	2.5 ± 1.5	3 ± 1.2	3.5 ± 1.4	3.3 ± 1.4

Conclusions According to our experience, ESG is a promising therapeutic option for elder individuals with obesity that are unable to lose weight with non-invasive methods, and who refuse or are deemed not suitable for bariatric surgery because of elevated age and comorbidities.

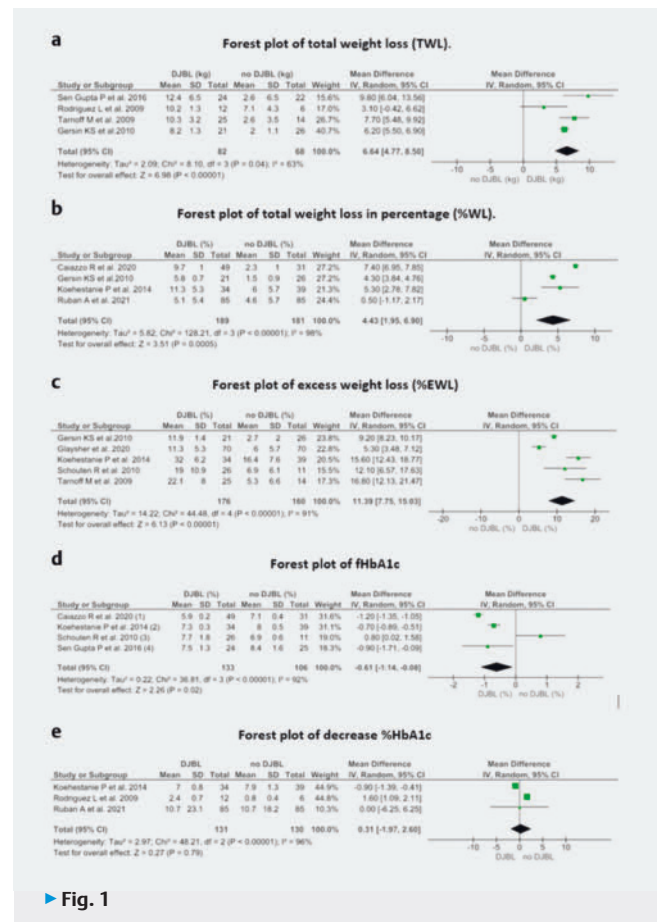
OP115 DUODENAL-JEJUNAL BYPASS LINER AS ENDOSCOPIC BARIATRIC AND METABOLIC THERAPY (EBMT) FOR OBESITY AND TYPE 2 DIABETES: A SYSTEMATIC REVIEW AND META-ANALYSIS OF RANDOMIZED CONTROLLED TRIALS

Authors Yvamoto E.Y.¹, Proença I.M.², Monte Junior E.S.³, Ribas P.H.B.V.³, de Oliveira V.L.³, Hemerly M.C.³, Bernardo W.M.³, de Moura D.T.H.³, Sánchez-Luna S.A.⁴, de Moura E.G.H.³

Institutes 1 Hospital das Clínicas da Faculdade de Medicina da Universidade de São Paulo – HC/FMUSP, Gastrointestinal Endoscopy Unit, São Paulo, Brazil; 2 Hospital das Clínicas da Faculdade de Medicina da Universidade de São Paulo – HC/FMUSP, Gastrointestinal Endoscopy Unit, São Paulo, Brazil; 3 Hospital das Clínicas da Faculdade de Medicina da Universidade de São Paulo – HC/FMUSP, São Paulo, Brazil; 4 The University of Alabama at Birmingham Heersink School of Medicine, Alabama, United States

DOI 10.1055/s-0042-1744678

Aims The duodenal-jejunal bypass liner (DJBL), an endoscopic bariatric and metabolic therapy (EBMT) has emerged as an alternative treatment with good results in glycemic control and weight loss. This systematic review of randomized clinical trials (RCTs) aimed to analyze the effect of DJBL on glycemic control, weight loss, and device-related adverse AEs.



► **Fig. 1**

Methods A search of multiple electronic databases to identify RCTs that compared DJBL to control (sham and/or diabetes pharmacotherapies) was performed. Evaluated outcomes included total weight loss (TWL), percentage of weight loss (%WL), percentage of excess weight loss (%EWL), decrease (%HbA1c) and final glycemic indices (fHbA1c), hospitalization, and adverse events (AE) in DJBL group. The risk of bias was assessed by RoB-2 tool, data were analyzed with Comprehensive Meta-Analysis V3 software, and quality of evidence by GRADE.

Results Ten RCTs were evaluating a total of 681 patients.

The DJBL group showed superior TWL, compared to the control group (+6.64 kg, $p < 0.00001$). The %WL and %EWL were higher in DJBL group (+4.43 %, $p = 0.0005$ and +11.39 %, $p < 0.00001$). The fHbA1c was lower in the DJBL group (-0.61 %, $p = 0.02$). However, the %HbA1c decrease was not different between groups (+0.31 %, $p = 0.79$).

The prevalence of hospitalization in DJBL was 17.2 %, $p < 0.002$ and severe AEs was 21.9 %, $p = 0.006$. Some AEs included liver abscess (1.2 %, $p < 0.0001$), gastrointestinal bleeding (6.5 %, $p < 0.0001$), device migration (8 %, $p < 0.0001$), and obstruction (3.8 %, $p < 0.0001$). These complications self-resolved after removal of the device without sequelae.

Conclusions DJBL is an effective and safe endoscopic therapy for the treatment of obesity and T2D, significantly reducing TWL, %WL, %EWL, and fHbA1c.

OP116 “COVESITY”: THE IMPACT OF SARS-COV-2 PANDEMIC ON SIX-MONTH WEIGHT TRAJECTORIES OF PATIENT UNDERWENT ENDOSCOPIC SLEEVE GASTROPLASTY IN A FOUR-YEAR PERIOD 2018-2021

Authors Carlino G.¹, Bove V.¹, Pontecorvi V.¹, Matteo M.V.¹, De Siena M.¹, Giannetti G.¹, Antonini N.¹, Massari C.¹, Costamagna G.¹, Boškoski I.¹

Institute 1 Università Cattolica del Sacro Cuore, Rome, Italy

DOI 10.1055/s-0042-1744679

Aims To evaluate the effects of the pandemic on weight indices, a retrospective analysis on a prospective database of patients underwent Endoscopic Sleeve Gastroplasty (ESG) from 2018 and October 2021 was conducted, excluding patients enrolled in clinical trials.

Methods For each year weight indices were collected at baseline and after 1-, 3- and 6-months follow-up. Statistical comparisons were performed with the ANOVA test.

Results In the four-year period, 44 (61 % women), 79 (70 % women), 102 (74 % women) and 75 patients (80 % women) underwent ESG in 2018, 2019, 2020 and 2021, respectively. There were no significant differences in mean age. Main weights (SD) were 114,1 kg (21,7), 108,6 kg (19,9), 102,6 kg (16,8) and 104,7 kg (18,9) ($p = 0.004$), in 2018, 2019, 2020 and 2021. Similar differences were found for BMI ($p = 0.003$), EW ($p = 0.002$) and EBMI ($p = 0.003$).

At the 1-, 3- and 6-months follow-up patients' compliances were 100 %, 98 %, 95 % in the 2018, 100 %, 99 %, 97 % in the 2019, 97 %, 91 %, 77 % in the 2020 and 94 %, 65 % and 20 % in the 2021.

YEAR	1m WL (kg)	1m EWL (%)	1m TBWL (%)	1m BMI (kg/m ²)	Δ BMI 1m (kg/m ²)	1m BAROS
2018	10.4 (3.3)	28.0 (12.8)	8.1 (3.2)	36.8 (8.5)	3.6 (1.2)	2.9 (1.5)
2019	11.1 (4.6)	32.1 (12.4)	10.2 (3.5)	34.0 (8.4)	4.1 (1.5)	3.2 (1.6)
2020	12.15 (4.15)	37.8 (13.5)	11.7 (3.5)	33.0 (8.1)	4.4 (1.5)	3.3 (1.5)
2021	11.9 (4.8)	37.4 (17.3)	11.6 (4.8)	33.8 (8.5)	4.4 (1.8)	3.4 (1.4)
p	< 0.05	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
YEAR	3m WL (kg)	3m EWL (%)	3m TBWL (%)	3m BMI (kg/m ²)	Δ BMI 3m (kg/m ²)	3m BAROS
2018	15.7 (5.3)	40.0 (16.8)	13.8 (4.1)	34.7 (8.7)	5.5 (1.7)	2.5 (1.2)
2019	16.1 (7.3)	44.1 (17.2)	14.8 (5.4)	33.0 (8.5)	6.0 (2.8)	3.2 (1.4)
2020	17.5 (7.7)	53.0 (18.5)	16.6 (6.5)	31.0 (8.5)	6.2 (2.4)	2.8 (1.1)
2021	17.0 (8.5)	51.6 (19.2)	15.7 (4.4)	32.1 (8.2)	6.2 (2.4)	3.4 (1.2)
p	< 0.02	< 0.001	< 0.01	< 0.001	< 0.001	< 0.001
YEAR	6m WL (kg)	6m EWL (%)	6m TBWL (%)	6m BMI (kg/m ²)	Δ BMI 6m (kg/m ²)	6m BAROS
2018	19.4 (8.3)	48.2 (19.3)	17.0 (5.3)	33.6 (8.5)	7.0 (2.3)	4.7 (1.5)
2019	18.1 (8.2)	49.5 (21.2)	16.6 (6.8)	32.3 (8.7)	6.6 (3.0)	3.8 (1.5)
2020	19.8 (8.2)	57.1 (19.7)	18.7 (6.2)	30.1 (8.4)	7.1 (2.8)	4.5 (1.6)
2021	14.8 (8.8)	41.5 (32.2)	12.9 (8.5)	36.4 (8.02)	5.6 (3.5)	2.8 (2.0)
p	< 0.10	< 0.001	< 0.01	< 0.001	< 0.001	< 0.001

Weight trajectories patients underwent Endoscopic Sleeve Gastroplasty in a four-year period 2018-2021. Data are reported as mean value (standard deviation) and were compared by ANOVA test.

Abbreviations: WL=Weight Loss; EWL=Excess Weight Loss; TBWL=Total Body Weight Loss; BMI=Body Mass Index; Δ BMI=Variation of Body Mass Index; BAROS=Bariatric Analysis and Reporting Outcome System.

► Fig. 1

One month after ESG EWL, TBWL and ΔBMI were sensibly higher in the 2020 ($p < 0.001$; $p = 0.001$; $p = 0.041$). At the 3-month follow-up EWL and TBWL were

sensibly higher in the 2020 ($p < 0.001$ and $p = 0.013$) whereas BAROS score was higher in the 2021 ($p = 0.003$). After six-month EWL, TBWL and BAROS score were higher in the 2020 ($p = 0.009$; $p = 0.015$; $p = 0.003$).

Conclusions Our analysis showed on the one hand how the pandemic interrupted the downward trend (2018-2020) of the weight indices, while on the other it observed better weight loss outcomes in 2020 compared with 2018, 2019 and 2021.

Early colorectal cancer: diagnosis and treatment

Friday, 29 April 2022

10:00–11:00

Club E

OP117 IMPACT OF FIT-BASED CRC POPULATION SCREENING PROGRAM ON THE MANAGEMENT OF PT1 COLORECTAL CANCER

Authors Daca Alvarez M.¹, Zaffalon D.^{2,1}, Portillo I.^{3,4}, Bujanda L.^{5,6}, Gil-Lasa I.⁵, Ibañez Sanz G.^{7,8}, Herreros de Tejada A.⁹, Salces I.¹⁰, Casanova G.¹, Aguilera L.¹¹, Ponce M.¹², Pizarro A.¹³, Barquero D.¹⁴, Puig I.¹⁵, Díez Redondo P.¹⁶, Martínez de Juan F.¹⁷, Jimeno M.¹⁸, Albuquerque M.¹⁹, Machlab S.²⁰, Ferrandez A.²¹, Peñas B.²², Díaz-González A.²³, Sargatal L.², Jover R.²⁴, Hernandez Villalba L.²⁵, Pérez Pedrosa A.²⁶, Musulen E.^{27,28}, Hernandez G.²⁹, Trelles M.³⁰, Ono A.³¹, Lopez Vicente J.³², Pellisé M.¹

Institutes 1 Hospital Clinic de Barcelona, Department of Gastroenterology, Barcelona, Spain; 2 Consorci Sanitari de Terrassa (CST), Terrassa, Spain; 3 Osakidetza Basque Health Service, Basque Country Colorectal Screening Programme, Bilbao, Spain; 4 Biocruces Health Research Institute, Cancer Biomarker Area, Barakaldo, Spain; 5 Donostia University Hospital, Department of Gastroenterology, Donostia, Spain; 6 Biodonostia Health Research Institute, Donostia, Spain; 7 Hospital de Bellvitge, Barcelona, Spain; 8 ICO Institut Català d'Oncologia, Barcelona, Spain; 9 Hospital Universitario Puerta De Hierro, Madrid, Spain; 10 Hospital Universitario 12 de Octubre, Madrid, Spain; 11 Hospital Vall D'Hebron, Barcelona, Spain; 12 Hospital Clínico Valencia, Valencia, Spain; 13 Hospital Universitario Virgen del Rocío, Sevilla, Spain; 14 Hospital Sant Joan Despi Moisès Broggi, Barcelona, Spain; 15 Althaia Xarxa Assistencial Universitària de Manresa, Digestive Diseases Department, Manresa, Spain; 16 Hospital Universitario Río Hortega, Valladolid, Spain; 17 Instituto Valenciano de Oncología (IVO), Valencia, Spain; 18 Hospital Germans Trias i Pujol, Badalona, Spain; 19 Hospital de Palamós, Palamós, Spain; 20 Consorci Corporació Sanitària Parc Taulí Sabadell, Sabadell, Spain; 21 Hospital Clínico Universitario Zaragoza, Zaragoza, Spain; 22 Hospital Universitario Ramón y Cajal, Madrid, Spain; 23 Hospital Universitario Marqués de Valdecilla, Cantabria, Spain; 24 Hospital General Universitario de Alicante, Alicante, Spain; 25 Hospital Santos Reyes Aranda Duero, Burgos, Spain; 26 Complejo Hospitalario de Ourense, Ourense, Spain; 27 Hospital Universitari General de Catalunya-Grupo Quironsalud, Barcelona, Spain; 28 Institut de Recerca contra la Leucèmia Josep Carreras, Barcelona, Spain; 29 Hospital Universitario de Canarias, Santa Cruz de Tenerife, Spain; 30 Hospital de Inca, Islas Baleares, Spain; 31 Hospital Virgen de la Arrixaca, Murcia, Spain; 32 Hospital Universitario de Móstoles, Móstoles, Spain

DOI 10.1055/s-0042-1744680

Aims To compare the characteristics and management of pT1 Colorectal Cancer (CRC) diagnosed within and outside a Faecal Immunochemical Test-based population CRC screening program.

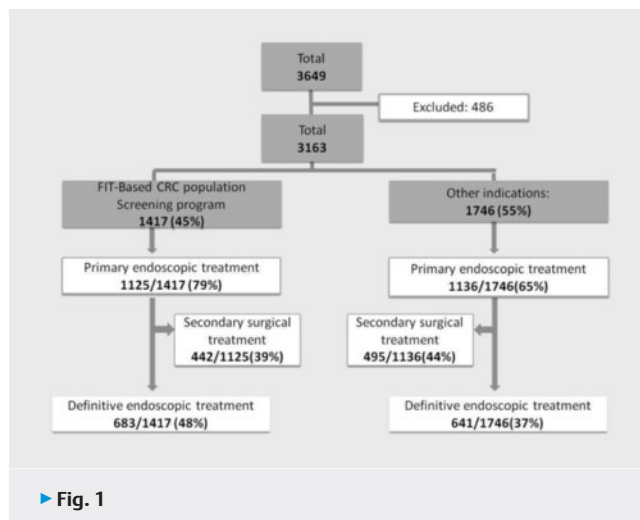
Methods Retrospective, multicenter, Nation-based, cohort study (EpiT1 consortium) including all pT1 CRC cases diagnosed between 2007-2018 regardless of the treatment received. Multivariate analysis was performed using binary logistic and Cox regression.

Results From a sample of 3649 patients, 3163 were finally included for the analysis: 1417 (45 %) of them diagnosed within a FIT-based population CRC

screening program and 1745(55%) outside of it. Baseline patients, colonoscopy and lesions characteristics were significantly different in both groups with more males (65% vs 59% $p = 0.001$), younger age (61.9 ± 6.6 vs 68.8 ± 10.9 $p = 0.001$), less comorbidity (ASA I and II) (85% vs 66% $p < 0.001$), more adequate bowel preparation (94% vs 84% $P < 0.001$), major cecal intubation rate (97% vs 91% $p < 0.001$), small lesion size (21.2 ± 10.9 vs 25.4 ± 14 , $1 p = 0.001$) and distal tumor location (86% vs 78% $p < 0.001$) in the FIT-based screening group. The primary and definitive management of the lesions was different in both groups (image). The screening programme was independently associated to a higher primary and definitive endoscopic treatment (Table 1). The overall and CRC adjusted survival in the screening group vs the rest were 93.3% vs 80.3% and 98,5% vs 97,2%, respectively.

► Table 1

		Primary endoscopic treatment Adjusted OR (95%CI)	Secondary surgical treatment Adjusted OR (95%CI)	Definitive endoscopic treatment Adjusted OR (95%CI)
INDICATION	FIT-based Population Screening Program	1,6 (1,25 – 2,07)	0,90 (0,73 – 1,10)	1,23 (1,01 – 1,49)
PATIENT CHARACTERISTICS	Age (Over 65 yo)	0,3 (0,23 – 0,38)	0,70 (0,57 – 0,85)	1,29 (1,07 – 1,57)
	Degree of comorbidity (ASA III-IV)	1,29 (0,98 – 1,70)	0,75 (0,59 – 0,95)	1,35 (1,08 – 1,68)
LESION CHARACTERISTICS	Size (Greater than 20 mm)	0,3 (0,23 – 0,38)	1,52 (1,25 – 1,85)	0,48 (0,40 – 0,58)
	Location (Distal to splenic angle)	2,4 (1,84 – 3,15)	0,50 (0,36 – 0,69)	2,55 (1,90 – 3,43)
	Lesion Morphology (pedunculated)	7,17 (5,29 – 9,72)	0,38 (0,31 – 0,47)	3,81 (3,18 – 4,58)



Conclusions pT1 CRC detected in the setting of a FIT-based population screening program are more often managed with endoscopic resection as primary and definitive treatment without impact on disease-free survival.

OP118 T1 COLORECTAL CANCER TREATED BY ENDOSCOPIC RESECTION: IS THE PROGNOSIS DIFFERENT BETWEEN RECTAL AND COLON TUMORS?

Authors Corre F.¹, Barret M.¹, Lambin T.², Ratone J.-P.³, Lepilliez V.⁴, Coron E.⁵, Albouys J.⁶, Rahmi G.⁷, Karsenti D.⁸, Canard J.-M.⁹, Chabrun E.¹⁰, Camus M.¹¹, Wallenhorst T.¹², François M.¹³, Gerard R.¹⁴, Rouquette A.¹⁵, Terris B.¹⁵, Coriat R.¹, Pioche M.², Jacques J.⁶, Chaussade S.¹
Institutes 1 Cochin Hospital, University of Paris, Gastroenterology, Paris, France; 2 Lyon University Hospital, Gastroenterology, Lyon, France; 3 Paoli-Calmettes Institute, Gastroenterology, Marseille, France; 4 Jean Mermoz Private Hospital, Gastroenterology, Lyon, France; 5 Nantes University Hospital, Gastroenterology, Nantes, France; 6 Limoges University Hospital, Gastroenterology, Limoges, France; 7 Georges Pompidou European University Hospital, Gastroenterology, Paris, France; 8 Bercy Clinic, Gastroenterology, Paris, France; 9 Trocadero Clinic, Gastroenterology, Paris, France; 10 Anjou Clinic, Gastroenterology, Angers, France; 11 Saint-Antoine Hospital, Gastroenterology, Paris, France; 12 Rennes University Hospital, Gastroenterology, Rennes, France; 13 Nancy University Hospital, Gastroenterology, Nancy, France; 14 Lille University Hospital, Gastroenterology, Lille, France; 15 Cochin Hospital, University of Paris, Pathology, Paris, France
DOI 10.1055/s-0042-1744681

Aims Several studies suggest that rectal tumors have a poorer prognosis than colon tumors. The objective of this study was to compare the prognosis between T1 colon cancers and T1 rectal cancers treated by endoscopic resection.

Methods We conducted a retrospective study including patients who had endoscopic resection for T1 colorectal cancer in fourteen French expert centers between March 2012 and July 2019.

Results 462 patients were included. The mean age was 67.2 ± 11.4 . 207/462(44.8%) patients had rectal tumor and 255/462(55.2%) had colon tumor. There were significantly more Paris 0-Ip pedunculated polyps among the colon tumors 72/255(28.2%) than among the rectal tumors 7/205(3.4%) $p < 0.001$. There were significantly more endoscopic submucosal dissections among rectal tumors 142/207(68.6%) than among colon tumors 72/254(28.3%) $p < 0.001$. Concerning the prognosis, among the 225/462(48.7%) patients who underwent additional surgery, there were significantly more lymph node involvements in rectal tumors 16/84(19.0%) than in colon tumors 14/141(9.9%) $p = 0.05$. In contrast, there was no statistically significant difference in terms of cancer recurrence during follow-up between colon 6/255(2.4%) and rectal tumors 7/207(3.4%) $p = 0.506$. In multivariate analysis, only poor differentiation ($p = 0.009$) and lymphovascular invasion ($p = 0.031$) were significant in predicting lymph node involvement. On the other hand, tumor location ($p = 0.424$) as well as the other usual histological risk factors such as high-grade budding ($p = 0.202$) and deep submucosal invasion ($p = 0.815$) were not significant in multivariate analysis to predict lymph node involvement.

Conclusions In terms of prognosis, it seems unnecessary to differentiate rectal and colon location of T1 colorectal cancers treated by endoscopic resection.

OP119 MRI PRIOR TO PRECISE ENDOSCOPIC EVALUATION OF RECTAL LESIONS MAY LEAD TO UNNECESSARY RADICAL TREATMENT

Authors Osuská D.¹, Pekárek B.¹, Orságh A.¹, Letkovský J.¹, Žitňan L.¹, Kunčák B.¹

Institute 1 National Cancer Institute, Gastroenterology, Bratislava, Slovakia
DOI 10.1055/s-0042-1744682

Aims Proper preprocedural staging of rectal lesions is crucial for the patient's future outcomes and quality of life. Early rectal tumors with a depth of neoplastic invasion up to stage T1 may be curatively treated endoscopically; deeper tumors require more invasive treatment. Endoscopic assessment of the depth of neoplastic invasion is often challenging and occasionally additional radiological imaging is used. The aim of this work was to assess the accuracy of pelvic magnetic resonance imaging (MRI) to distinguish stages T0/TIS-T1, where curative endoscopic resection is possible, from stages T2-T4, in the preoperative staging of rectal neoplasia.

Methods The retrospective monocentric analysis included patients who had undergone rectal endoscopic submucosal dissection (240 patients), of which 29 patients have had preoperative MRI from January 1st 2016 to November 30th 2021. The T stage determined from pelvic MRI was compared with benchmark histopathological results.

Results Sensitivity for differentiating T0/TIS-T1 from T2-4 was 100%; specificity was 60.71 %. Accuracy was 62.1 %, with overstaging observed in 37.9 % of cases. Four patients that were already scheduled for abdominoperineal resection were curatively treated endoscopically, and the operations were canceled.

Conclusions We observed a consistent tendency towards overstaging using MRI – our findings support current recommendations against the use of MRI for tumor staging in early rectal neoplasia. Overstaging can lead to unnecessary surgical resection both with or without neoadjuvant treatment. Even in cases when MRI has already been performed, we recommend precise endoscopic evaluation, coupled with as-needed local excision when diagnosing potential early neoplastic lesions.

OP120 PREDICTED ABSOLUTE RISK OF LYMPH NODE METASTASIS IN T1 COLORECTAL CANCER IN THE SOLE PRESENCE OF TUMOUR BUDDING, LYMPHOVASCULAR INVASION, OR POOR DIFFERENTIATION: A META-ANALYSIS

Authors Lamme S.R.B.¹, van der Schee L.¹, Gijsbers K.M.¹, Haasnoot K.J.C.¹, Didden P.¹, Lacle M.M.², Elias S.G.³, Moons L.M.G.¹

Institutes 1 University Medical Center Utrecht, Gastroenterology & Hepatology, Utrecht, Netherlands; 2 University Medical Center Utrecht, Pathology, Utrecht, Netherlands; 3 University Medical Center Utrecht, Julius Centrum, Utrecht, Netherlands

DOI 10.1055/s-0042-1744683

Aims High-grade (Bd2/Bd3) tumour budding (TB), poor differentiation (PD) and lymphovascular invasion (LVI) are regarded as the strongest predictors for lymph node metastasis (LNM), and their presence considered an indication for completion surgery. However, these risk factors are strongly intercorrelated and their individual predictive strength is unclear. This study therefore aimed to investigate the absolute risk of LNM in the presence of only one of these risk factors.

Methods Studies were eligible for this meta-analysis if a multivariable analysis on the risk of LNM in T1CRC was performed with at least LVI, PD and TB as risk factors. The adjusted odds ratios were pooled in a random-effects model. To convert the pooled adjusted odds ratios (pORs) to absolute risks, a multivariable logistic regression model including the pORs but with an undefined intercept was fitted on a retrospective multicentre cohort of 628 Dutch T1CRC patients (12 % LNM, 92 % deep submucosal invasion, 93 % non-pedunculated,

32 % rectum). Predicted probabilities of LNM with their corresponding 95 % confidence intervals (95 %CI) were calculated in the presence of one risk factor.

Results A total of 14 studies (4628 patients) were included in the meta-analysis. LVI was the strongest predictor (pOR: 4.89 [95 %CI: 2.89-8.27]), followed by PD (pOR: 3.10 [95 %CI: 2.02-4.75]) and TB (pOR 2.34 [95 %CI: 1.69-3.25]). The results of the fitted model (AUC 0.72 [95 %CI: 0.66-0.77]) are summarized in Table 1

	Absence of risk factors	TB +, PD-, LVI-	TB-, PD+, LVI-	TB-, PD-, LVI+
Predicted probability (95 %CI)	3.1 % (2.3 % – 3.9 %)	6.9 % (5.2 % – 8.6 %)	8.9 % (6.8 % – 11.1 %)	13.4 % (10.3 % – 16.5 %)

Conclusions The absolute risk of LNM in the presence of a single histopathological risk factor varies between 6.9 % and 13.4 %, and is strongest for LVI.

OP121 T1 COLORECTAL CANCERS TREATED BY ENDOSCOPIC RESECTION: TUMOR SIZE AS A NEW PROGNOSTIC FACTOR?

Authors Corre F.¹, Barret M.¹, Lambin T.², Ratone J.-P.³, Lepilliez V.⁴, Coron E.⁵, Albouys J.⁶, Rahmi G.⁷, Karsenti D.⁸, Canard J.-M.⁹, Chabrun E.¹⁰, Camus M.¹¹, Wallenhorst T.¹², François M.¹³, Gerard R.¹⁴, Rouquette A.¹⁵, Terris B.¹⁵, Coriat R.¹, Pioche M.², Jacques J.⁶, Chaussade S.¹

Institutes 1 Cochin Hospital, University of Paris, Gastroenterology, Paris, France; 2 Lyon University Hospital, Gastroenterology, Lyon, France; 3 Paoli-Calmettes Institute, Gastroenterology, Marseille, France; 4 Jean Mermoz Private Hospital, Gastroenterology, Lyon, France; 5 Nantes University Hospital, Gastroenterology, Nantes, France; 6 Limoges University Hospital, Gastroenterology, Limoges, France; 7 Georges Pompidou European University Hospital, Gastroenterology, Paris, France; 8 Bercy Clinic, Gastroenterology, Paris, France; 9 Trocadero Clinic, Gastroenterology, Paris, France; 10 Anjou Clinic, Gastroenterology, Angers, France; 11 Saint-Antoine Hospital, Gastroenterology, Paris, France; 12 Rennes University Hospital, Gastroenterology, Rennes, France; 13 Nancy University Hospital, Gastroenterology, Nancy, France; 14 Lille University Hospital, Gastroenterology, Lille, France; 15 Cochin Hospital, University of Paris, Pathology, Paris, France

DOI 10.1055/s-0042-1744684

Aims Tumor size seems to be an important prognostic factor in colorectal cancers, especially in T1. The objective of this study was to compare the rate of lymph node involvement between small ≤ 20 mm T1 colorectal tumors and those of larger size > 20 mm.

Methods We conducted a retrospective study including patients who had en-bloc endoscopic resection of high-risk T1 colorectal cancer followed by additional surgery with lymph node dissection in thirteen French expert centers between March 2012 and July 2019.

Results 141 patients were included. The mean age was 64.1 \pm 10.6. 49/141 (34.8 %) patients had small tumors and 92/141 (65.2 %) had large tumors. There were significantly more rectal cancers among large tumors 46/92 (50.0 %) than among small tumors 9/49 (18.4 %) $p < 0.001$. There were significantly more Paris 0-Ip pedunculated polyps among small tumors 19/49 (38.8 %) than among large tumors 12/92 (13.0 %) $p < 0.001$. There were significantly more submucosal dissections among large tumors 75/92 (81.5 %) than among small tumors 5/49 (10.2 %) $p < 0.001$. Concerning the primary outcome, there were significantly more lymph node involvements among large tumors 17/92 (18.5 %) than among small tumors 3/49 (6.1 %) $p = 0.045$. In multivariate analysis, the only factor that remained significant in predicting lymph node involvement was poor differentiation ($p = 0.005$). As for tumor size, it almost reached statistical significance ($p = 0.091$). On the other hand, the other

usual histological risk factors such as lymphovascular invasion ($p=0.12$), high-grade budding ($p=0.504$) and deep submucosal invasion ($p=0.82$) were not significant in multivariate analysis.

Conclusions This retrospective multicenter study showed that small T1 colorectal cancers treated by endoscopic resection appeared to have a better prognosis than those of larger size.

OP122 ENDOSCOPIC FULL-THICKNESS RESECTION (EFTR) FOR EARLY COLORECTAL CARCINOMA (CRC) – A RETROSPECTIVE ANALYSIS OF 31 CONSECUTIVE CASES

Authors Stathopoulos P.¹, Zumblick M.¹, Hoque S.², Gress T.M.³, Denkert C.⁴, Denzer U.W.¹

Institutes 1 University Hospital Marburg, Division of Interdisciplinary Endoscopy, Department of Gastroenterology, Marburg, Germany;

2 Philipps University of Marburg, School of Medicine, Marburg, Germany;

3 University Hospital Marburg, Department of Gastroenterology, Marburg, Germany; 4 University Hospital Marburg, Institute of Pathology, Marburg, Germany

DOI 10.1055/s-0042-1744685

Aims EFTR has an emerging role in the resection of early CRC with low-risk histological features. We aimed to access the efficacy, safety and oncologic follow-up of patients with early CRC treated with eFTR.

Methods Single-center retrospective analysis of all patients with early CRC treated with eFTR from 11/2016 – 11/2021.

Results Of the 106 eFTR performed in our endoscopy department, 31 patients with early CRC (12 women, mean age 72) were found. The 22 colon and 9 rectal lesions could all be reached; mean histologic lesion size was 13,7 mm (3-25 mm). Mean procedure time was 47,3 min (25-70 min). Technically successful resection and histological R0 resection was achieved in 93,5% and 67,7% of cases, respectively. In 9/31 patients with previously incompletely resected CRCs (R1/Rx) no residual cancer was histologically found after eFTR. 4/31 patients had low-risk features, of which one patient underwent oncologic resection (R1 at lateral margin). 18/31 patients had high-risk features (2 T2, 7 sm2-3 ± L1, 9 R1), of which only 8 patients underwent an oncological surgery. Over a median follow-up period of 15.5 months (0-47), one patient died from cardiac cause and one patient who previously underwent surgery experienced a tumor recurrence (liver metastasis). Adverse events included 2 minor bleedings, one ileus, which could be managed conservatively, and two perforations, which could be closed endoscopically with an over-the-scope clip.

Conclusions eFTR allows accurate histological risk assessment, which may spare patients with early CRC an oncologic surgery. Prospective studies with appropriate oncologic follow-up are needed to evaluate long-term efficacy.

Managing Biliary Complications
Friday, 29 April 2022

10:00–11:00
Club H

OP123 CONVENTIONAL VS ANTIMIGRATION FULLY COVERED METAL STENT (FCMS) FOR ENDOTHERAPY OF BILIARY ANASTOMOTIC STRICTURE (BAS) FOLLOWING DECEASED-DONOR LIVER TRANSPLANTATION (LT)

Authors Fuentes-Valenzuela E.¹, De Benito Sanz M.¹, Estradas J.¹, Dura Gil M.¹, Carbajo Lopez A.Y.¹, Alonso-Martín C.¹, Sanchez-Ocana R.¹, Peñas-Herrero I.¹, Almohalla C.¹, García Pajares F.¹, De la Serna Higuera C.¹, Pérez-Miranda M.¹

Institute 1 Hospital Universitario Río Hortega, Gastroenterology Department, Valladolid, Spain

DOI 10.1055/s-0042-1744686

Aims Antimigration FCMS (A-FCMS) might enhance endotherapy of BAS.

Methods Retrospective cohort study of consecutive LT patients receiving endotherapy for choledcho-choledochostomy BAS with conventional FCMS (C-FCMS) or A-FCMS between 2005-2020 at single tertiary-center. Previous biliary plastic stent placements were also included. Patients were classified according to FCMS type on index ERCP. Primary outcomes: migration and resolution rates on first endoscopic revision. Secondary outcomes: initial/final resolution and recurrence rates.

Results 651 patients underwent LT during the study period; 118 BAS patients (79% male; median [IQR] age of 57.5 [50.2-62.7] years) were included. 48 patients received a total of 58 C-FCMS, 70 patients received 93 A-FCMS. 10x80 mm was the most common FCMS size (81.4%). Median time from LT to index ERCP was 8 months (IQR 3-21). Baseline features were comparable, except that C-FCMS had higher rates of previous plastic stent [27 (56.3% vs 24 (34.3%), $p=0.02$]. A-FCMS patients presented a lower migration rate on first endoscopic revision, similar resolution rates on first endoscopic revision and at the end of treatment; A-FCMS dwell time for each stent was significantly longer. After a median follow-up of 52 months (IQR 17-89), BAS recurrence was observed in 26 patients (22%), with a higher rate in C-FCMS patients [14 (29.2%) vs 12 (17.1%), $p=0.27$]. Patients with BAS recurrence had shorter stent dwell time [6 (4-8) months vs 7 (5-13.5), $p=0.02$].

► Table 1

PATIENTS	Total N = 118	C-FCMS N = 48 (%)	A-FCMS N = 70 (%)	p
Migration 1st revision	30 (24.5)	18 (37.5)	12 (17.1)	0.04
Resolution 1st revision	62 (52.2)	24 (50)	38 (54.3)	0.88
Final resolution	105 (89)	43 (89.3)	62 (88.6)	0.86
STENTS Individual stent dwell time (IQR), months	Total N = 151 5 (2-7)	C-FCMS n = 58 3(2-6)	A-FCMS n = 93 5 (2-7)	0.03

Conclusions A-FCMS are associated with lower migration rates, longer stent dwell time and lower late BAS recurrence rates compared to C-FCMS in LT patients undergoing endotherapy.

OP124 INTRAVENOUS HEMIN, A POTENTIAL HEME OXYGENASE-1 ACTIVATOR, DOES NOT PROTECT FROM POST-ERCP ACUTE PANCREATITIS IN HUMAN: RESULTS OF A RANDOMIZED MULTICENTRIC MULTINATIONAL PLACEBO CONTROLLED TRIAL

Authors Yared R.¹, Chen C.-C.², Vadorpe A.³, Arvanitakis M.¹, Delhay M.¹, Fernandez M., Viesca Y.¹, Huberty V.¹, Blero D.^{1,4}, Toussaint E.^{4,5}, Hittlet A.⁶, Verset D.⁷, Margos W.⁷, Le Moine O.¹, Njimi H.⁸, Liao W.-C.², Devière J.¹, Lemmers A.¹

Institutes 1 Erasme University Hospital – Université Libre de Bruxelles (ULB), Department of Gastroenterology, Hepatopancreatology and Digestive Oncology, Brussels, Belgium; 2 National Taiwan University Hospital, Department of Internal Medicine, Taipei, Taiwan, Province of China; 3 Erasme University Hospital – Université Libre de Bruxelles (ULB), Pharmacy, Brussels, Belgium; 4 CHU de Charleroi, Hôpital Marie Curie, Department of Gastroenterology, Charleroi, Belgium; 5 CHU Brugmann, Department of Gastroenterology, Brussels, Belgium; 6 Hôpital Ambroise Paré, Department of Gastroenterology, Mons, Belgium; 7 CH Jolimont, Department of Gastroenterology, La Louvière, Belgium; 8 Erasme University Hospital – Université Libre de Bruxelles (ULB), Department of Intensive Care Unit, Brussels, Belgium

DOI 10.1055/s-0042-1744687

Aims Hemin, a Heme-oxygenase-1 activator has proven efficacy in the prevention and treatment of acute pancreatitis in mice models. We conducted a randomized controlled trial (RCT) to assess the protective effect of Hemin administration to prevent post-ERCP pancreatitis (PEP) in moderate risk patients.

Methods In this multicenter, multinational, placebo-controlled, double-blind RCT, we assigned patients at moderate risk for PEP to receive a single IV dose of Hemin (4mg/kg) or placebo immediately after ERCP. Patients were considered to be at moderate risk on the basis of validated patient and/or procedure-related risk factors. No rectal NSAID nor pancreatic stent insertion was allowed in randomized patients. The primary outcome was the incidence of PEP. Secondary outcomes evaluated lipase elevation, mortality, safety and length of stay.

Results:

► **Table 1** Clinical and laboratory characteristic at baseline

Characteristic	Hemine (N = 141)	Placebo (N = 140)	p value (* p < 0.05)
Female sex – no (%)	78 (58,6%)	69 (52,3%)	0,324
Past history of acute pancreatitis – no (%)	3 (2,1%)	8 (5,7%)	0,137
Past history of post ERCP pancreatitis – no (%)	2 (1,4%)	1 (0,7%)	0,99
Normal bilirubin – no (%)	64 (45,4%)	73 (52,1%)	0,284

A total of 281 of the 294 randomized patients had completed follow-up. Groups were similar in terms of clinical, laboratory and technical risk factors for PEP (Table 1). PEP occurred in 16 of 141 patients (11.3%) in the Hemin group and in 19 of 140 patients (13.6%) in the placebo group ($p = 0.593$). Incidence of severe PEP reached 0.7% and 3.6% in the Hemin and placebo groups respectively ($p = 0.12$). Lipase elevation at more than 3x ULN after ERCP did not differ between groups. Length of hospital stay was similar between groups (4.8 vs 4.7 days; $p = 0.784$) as well as mortality rate or severe adverse events.

Conclusions Among patients at moderate risk for PEP, intravenous Hemin injection does not protect from PEP when given after the procedure.

OP125V ENDOSCOPIC REPAIR OF POST-SURGICAL DISCONNECTED BILE DUCTS (DBDS) BY MAGNETIC COMPRESSION ANASTOMOSIS (MCA) VIA EUS-GUIDED ANASTOMOSES

Authors Dura-Gil M.¹, de Benito M.¹, Fuentes-Valenzuela E.¹, Sciarretta M.¹, Estradas-Trujillo J.A.¹, Sanchez-Ocana R.¹, de la Serna C.¹, Perez-Miranda M.¹

Institute 1 Hospital Universitario Rio Hortega, Gastroenterology and Hepatology, Valladolid, Spain

DOI 10.1055/s-0042-1744688

Daughter/parent magnets were placed into proximal/distal sides of DBDS < 15-mm apart. A 5x8-mm daughter-magnet was placed via EUS-guided SEMS hepaticogastrostomy in two patients. A same-sized parent-magnet was placed by ERCP into the distal biliary stump of a post-cholecystectomy Strasberg-E3 transection patient with hepatolithiasis and native GI-anatomy. A 4x10-mm double-disc parent-magnet was placed via EUS-guided LAMS gastrojejunostomy on the jejunum of a Roux-en-Y post-Whipple patient. Both magnet sets coupled within 10-days. Transpapillary/trans-anastomotic SEMS were placed across the MCA upon magnet/transhepatic SEMS removal, and retrieved 4/8 months later, respectively. Cholangioscopy documented DBD reconnection. Both patients remain symptom and stent free at 2/9 months.

OP126 PREDICTORS OF PROXIMAL MIGRATION OF BILIARY PLASTIC STENTS : EXPERIENCE FROM HIGH VOLUME TERTIARY CARE CENTRE IN INDIA

Authors Kale A.¹, Aggarwal M.¹, Sundaram S.¹, Giri S.¹, Patwardhan N.¹, Garg L.¹, Kuruthukulangara M.¹, Satai M.¹, Shukla A.¹

Institute 1 Seth G S Medical College and King Edward Memorial Hospital, Department of Gastroenterology, Mumbai, India

DOI 10.1055/s-0042-1744689

Aims Proximal migration of biliary plastic stents (PS) remains a challenging condition to manage with need for additional manipulation in the biliary tree. Our aim was to assess predictors of internally migrated biliary plastic stents.

Methods Retrospective review of prospectively maintained endoscopy database was done from January 2016 to January 2021 to identify 1137 patients who underwent stent removal or repeat ERCP procedure. Indication, stent migration, type of stents, clinical presentation, methods of endoscopic retrieval, technical success, complications were noted and predictors of migration were analyzed.

Results Proximal migration of PS was noted in 74 (6.5%) cases. Fourteen cases had distal tip above cystic duct opening, 34 had below the cystic duct opening but inside bile duct, 26 had tip at the ampulla but not seen in duodenum. Balloon catheter, basket, Sohendra stent retriever, grasping forceps, engaging sphincterotome in the stent, snare over scope were used in 46, 8, 6, 5, 4, 1 cases respectively. Technical success for retrieval was achieved in 94.59% cases. Reasons for failure include impacted stent (2) and stent above stricture (2). Complications were haemobilia (1) and perforation (1). On univariate analysis choledocholithiasis, benign strictures, sphincteroplasty, 7 French stent, dilated bile duct and duration > 3 months were associated with stent migration. Table 1 shows results of multivariate analysis.

► **Table 1** showing results of multivariate logistic regression analysis.

Predictor	Odds ratio (confidence interval)	P value
Sphincteroplasty at index procedure	5.8 (2.7-12.1)	0.0005
Stent size 7 Fr	17 (6.1-30.07)	0.0005
Dilated bile duct on cholangiogram	0.347 (0.172-0.697)	0.003
Duration of stent > 3 months	14 (7.9-27.001)	0.0005

Conclusions Sphincteroplasty at index procedure, dilated bile duct, stent duration > 3 months, 7 Fr stent size increase the risk of internal stent migration. Migrated stents can be retrieved successfully using simple accessories in majority of the cases.

OP127V ENDOSCOPIC ELECTROINCISION OF DIFFICULT ANASTOMOTIC BILIARY STRICTURE AFTER LIVER TRANSPLANTATION

Authors Tringali A.¹, Milluzzo S.M.¹, Perri V.¹, Costamagna G.¹

Institute 1 Policlinico Agostino Gemelli Foundation IRCCS, Digestive Endoscopy Unit, Rome, Italy

DOI 10.1055/s-0042-1744690

Benign biliary stenosis (BBS) can be caused by a variety of etiologies, including post-operative injuries (i.e., post-cholecystectomy, liver transplantation), chronic pancreatitis, chronic cholangiopathies and traumas.

Clinical manifestation varies from incidental elevation of liver function test in asymptomatic patients to more severe clinical course with jaundice and cholangitis. If left untreated, BBS can lead to chronic cholestasis, recurrent sepsis, and secondary biliary cirrhosis.

Endoscopic Retrograde Cholangio-Pancreatography (ERCP) is the preferred option for most of these cases, since it is effective, safe and minimally invasive. In this case, a novel procedure for recanalization of anastomotic biliary stricture after liver transplantation is reported.

OP128 FEASIBILITY AND OUTCOMES OF EUS-GUIDED MAGNETIC COMPRESSION ANASTOMOSIS (EUS-MCA) TO REPAIR DISCONNECTED BILE DUCTS (DBDS): A PILOT STUDY

Authors [Dura-Gil M.¹](#), [de Benito M.¹](#), [Sanchez-Ocana R.¹](#), [Carbajo-Lopez A.Y.¹](#), [Sciaretta M.¹](#), [Estradas-Trujillo J.A.¹](#), [Almohalla C.¹](#), [Penas-Herrero I.¹](#), [de la Serna C.¹](#), [Perez-Miranda M.¹](#)

Institute 1 Hospital Universitario Rio Hortega, Gastroenterology and Hepatology, Valladolid, Spain

DOI 10.1055/s-0042-1744691

Aims Introduction: Intra/extraluminal rendezvous via PTBD may enable ERCP in DBDs. MCA placing daughter/parent magnets across DBDs achieves >90% repair (PMID:27619787). MCA involves prolonged external PTBD. EUS-guided hepaticogastrostomy (HGS) replicates percutaneous rendezvous in post-cholecystectomy DBDs (PMID:34816304). Might transmural EUS-BD replace PTBD as a route for magnet insertion/removal during MCA?

Aims To evaluate feasibility, safety and efficacy of biliary EUS-MCA.

Methods Thirteen consecutive patients (69.2% male; median[range] age = 59[49-86] years) with DBDs < 15-mm failing guidewire canalization underwent EUS-MCA between 2012-2021. Cylindrical rare-earth magnets 4x10-mm/3-6-mm with nylon-thread/central guidewire-lumen were placed intraductally through transmural SEMS/fistulas after HGS/CDS with fully-covered-SEMS (proximal magnet) or by ERCP (distal magnet). Disc-shaped 10x3-mm magnets were placed on the jejunum of patients with Roux-en-Y hepaticojejunostomy (RYHJ) via EUS-guided LAMS gastrojejunostomy (EUS-GJ). HGS/CDS stents were removed upon DBD recanalization and stenting at magnet removal. Ductal SEMS and GJ-LAMS were removed after DBD remodeling. Baseline, procedural and outcome data were reviewed.

Results DBD location, 2 right-hepatic (1 post-chole transection, 1 liver trauma), 1 common-hepatic (1 post-chole transection), 5 choledoch-choledochostomy (OLT), 4 RYHJ (Whipple), 1 choledoch-jejunostomy (OLT). Transmural EUS-BD location, 10 transhepatic (HGS/hepatico-jejunostomy = 9/1), 3 CDS. Magnet insertion succeeded in 12/13, coupling with de-novo-MCA in 11/12 (92%) (1 unrelated death). Magnets retrieved/migrated (5/6) a median 12.5(7-21) days post-placement. Transpapillary SEMS removed in all but 2 (awaiting removal) after a median 172(41-470) days, with successful DBD remodeling. Moderate-severity AE: 3 cholangitis, 1 abscess. After a median 13.5(0.5-41) months 2/7(28%) recurrent strictures underwent ERCP re-treatment.

Conclusions EUS-MCA is feasible and appears effective in selected DBDs.

From Luminal to Third space: Endoscopy in the esophagus

11:30–12:30

Friday, 29 April 2022

Club A

OP129 DECISION-TO-SCOPE (DTS) SCORE: A NOVEL TOOL WITH EXCELLENT ACCURACY IN PREDICTING FOREIGN BODIES IN THE UPPER GASTROINTESTINAL TRACT

Authors [Macedo Silva V.^{1,2,3}](#), [Lima Capela T.^{1,2,3}](#), [Freitas M.^{1,2,3}](#), [Cúrdia Gonçalves T.^{1,2,3}](#), [Boal Carvalho P.^{1,2,3}](#), [Rosa B.^{1,2,3}](#), [Cotter J.^{1,2,3}](#)

Institutes 1 Hospital Senhora da Oliveira, Gastroenterology Department, Guimarães, Portugal; 2 School of Medicine, University of Minho, Life and Health Sciences Research Institute (ICVS), Braga, Portugal; 3 ICVS/3B's, PT Government Associate Laboratory, Braga/Guimarães, Portugal

DOI 10.1055/s-0042-1744692

Aims Foreign body (FB) ingestion is a common indication for urgent esophago-gastroduodenoscopy (EGD). Nevertheless, most of ingested FB pass spontaneously through the gastrointestinal (GI) tract. Differently from upper GI bleeding, there is no currently validated score identifying "low-risk" patients in suspected FB ingestion. We aimed to create a score to discriminate patients who are candidates to urgent EGD in this scenario.

Methods Retrospective study of consecutive patients with suspected FB in the upper GI tract between 2016 and 2021. The evaluated outcome was confirmed FB in EGD. Significant predictors on multivariate analysis were computed into a score predicting the outcome.

Results We included 228 patients, 122(53.5%) female, with a mean age of 58.0 ± 19.7 years. From these, 97(42.5%) had confirmed FB in EGD. Time since ingestion < 6h (OR = 4.0; p = 0.042); absence of any meal after FB ingestion (OR = 7.1; p = 0.005); dysphagia (OR = 11.8; p < 0.001); odynophagia (OR = 4.6; p = 0.004); and drooling (OR = 15.1; p < 0.001) were independent predictors of confirmed FB on EGD. These variables were computed in a predicting score – the Decision-To-Scope (DTS) score: time since ingestion < 6h (+ 1pt), absence of meals (+ 2pts), dysphagia (+ 3pts), odynophagia (+ 1pt), and drooling (+ 4pts), with a maximum of 11pts, which had excellent accuracy to predict the outcome (AUC = 0.953; p < 0.001). Optimal cut-off to identify low-risk patients was ≤ 5 (sensitivity 85%; specificity 95%).

Conclusions More than half of suspected FB were not confirmed by EGD. The DTS-score presented an excellent accuracy at stratifying patients' risk, and may contribute to the decision to perform urgent EGD in suspected FB in the upper GI tract.

OP130V COMBINATION OF THROUGH-THE-SCOPE BALLON, TRANSPARENT CAP AND OVERTUBE TO REMOVE A MIGRATED SELF-EXPANDING METAL STENT DISTAL TO A TIGHT ESOPHAGEAL STRICTURE

Authors [Mönkemüller K.¹](#), [Alvaro Martínez-Alcalá A.¹](#)

Institute 1 Amedeo University Teaching Hospital, Gastroenterology, Halberstadt, Germany

DOI 10.1055/s-0042-1744693

A 55-year-old male underwent placement of a fully-covered-self-expanding-metal-stent for benign esophageal stenosis at an outside hospital, which migrated distally and a second fcSEMS was inserted, dislodging as well. The patient was referred to our unit. The proximal stent had migrated proximally and was removed using a forceps. To remove the distal fcSEMS we dilated the tight stenosis using an over-the-wire, through-the-scope, controlled-radial-expansion balloon, inserted an overtube and placed a transparent cap on the scope. This triple-combined technique allowed to pull the fcSEMS into the cap and through-the-overtube, preventing perforation during the passage of the stent through the freshly dilated stenosis.

OP131V THE SET DOUBLE TUNNEL TECHNIQUE

Author [Hochberger J.¹](#)

Institute 1 Vivantes Klinikum im Friedrichshain, Gastroenterology, Berlin, Germany

DOI 10.1055/s-0042-1744694

A 58-year-old patient was referred because of an obstructing submucosal tumor at the level of the aortic arch. The tumor was successfully removed in SET technique but was too big to be extracted through the cranial incision and UES. As the patient had an axial hernia a second submucosal tunnel was created reaching to the distal esophagus. A mucosal incision was made and allowed the safe expulsion of the tumor and advancement into the stomach. The tumor was now cut into nine pieces which were removed through the esophagus. The technique and the uneventful follow-up after 3 mo are shown.

OP132V ENDOSCOPIC CLOSURE OF BRONCHO-ESOPHAGEAL FISTULA (BEF) OCCURRING AS AN ADVERSE EVENT FOLLOWING SUBMUCOSAL TUNNELING ENDOSCOPIC RESECTION (STER) OF AN ESOPHAGEAL LEIOMYOMA USING BIODEGRADABLE FISTULA PLUGS

Authors Bapaye A.¹, Gandhi A.¹, Pawar B.², Ansari J.¹, Raina H.¹, Bapaye H.³, Nikumbh T.¹

Institutes 1 Deenanath Mangeshkar Hospital and Research Centre, Shivanand Desai Centre for Digestive Disorders, Pune, India; 2 Deenanath Mangeshkar Hospital and Research Centre, Department of Chest Medicine, Pune, India; 3 Byramjee Jeejeebhoy Govt. Medical College, Pune, India
DOI 10.1055/s-0042-1744695

35-y-male, STER-esophageal leiomyoma (4x3cm) at 24–28cm. Inadvertent mucosal diathermy injury over tunnel–endo–clipped. Contrast study–no leak. Oral diet–48 hours & discharge 4-days later. 2-weeks post-STER–cough on swallowing. CECT – BEF. EGD–mucosal breakdown at diathermy injury site; bronchoscopy–BEF–right main bronchus.

Procedure–supine, endotracheal intubation, simultaneous EGD & bronchoscopy; bronchoscopy guided APC to refresh fistula edges. Two 0.025" guidewires via bronchoscope into esophagus under fluoroscopy. Two fistula plugs trimmed, backloaded over guidewire, pushed using 5Fr pusher across fistula. Plugs positioned side-by-side. Esophageal FCSEMS placed; Nasogastric feeding. Post-BEF closure–no contrast leak. Nasogastric feeds after 24 hours. Clinical improvement; discharged after 7 days. 2-weeks later, bronchoscopy–BEF sealing; SEMS removed, EGD–healed fistula; contrast swallow–no leak. Oral diet; asymptomatic at 2-months f/u.

OP133V SUBMUCOSAL TUNNELING AND ENDOSCOPIC MARSUPIALISATION AS A SAFE AND EFFECTIVE TREATMENT OF ESOPHAGEAL BRONCHOGENIC CYST (EBC)

Authors Ansari J.¹, Gandhi A.¹, Raina H.¹, Bapaye H.², Nikumbh T.¹, Pujari R.¹, Bapaye A.¹

Institutes 1 Deenanath Mangeshkar Hospital and Research Centre, Shivanand Desai Centre for Digestive Disorders, Pune, India; 2 Byramjee Jeejeebhoy Govt. Medical College, Pune, India
DOI 10.1055/s-0042-1744696

61-y-male with dysphagia; CECT–esophageal sub-epithelial lesion (SEL); EGD–distal esophageal SEL–anterior wall at 29–35cm; EUS–well circumscribed solid hypoechoic lesion–layer 3 (40mm diameter). STER planned assuming esophageal leiomyoma. FNA not performed–could compromise STER due to resultant submucosal (SM) fibrosis. Procedure–supine, endotracheal intubation; CO₂ insufflation; mucosal incision and SM tunnelling; significant SM fibrosis; inadvertent puncture of cyst with drainage of turbid fluid–suspicion of bronchogenic/duplication cyst; intra-cystic papillary projections–biopsied; therefore procedural plan changed–deroofing of cyst cavity followed by marsupialisation–cyst lining clipped to esophageal mucosa using multiple endoclips; mucosal incision closed. Contrast swallow–no leak; Oral diet after 24 hours. HPE–pseudo-stratified ciliated columnar epithelium s/o bronchogenic cyst. 4-week f/u EGD–cyst epithelialisation, healed incision site; asymptomatic at 3-month f/u.

OP134V SALVAGE ESD

Authors Charara F.¹, Eisendrath P.², Verset L.³, Demetter P.³, Lemmers A.²

Institutes 1 ULB, Gastro-enterology – Surgery, Brussels, Belgium; 2 ULB, Gastro-enterology, Brussels, Belgium; 3 ULB, Histology, Brussels, Belgium
DOI 10.1055/s-0042-1744697

A 69 year old male patient, in a poor general condition who presented esophageal suspicious lesion.

Patient was unfit for surgery due to severe lung dysfunction, denutrition and psychiatric disorders.

Although not reaching curative criteria (sm1, poorly differentiated) but R0 resection, considering the patient clinical condition, a watchful waiting strategy was adopted.

Patient experiences a small recurrence in the middle of the ESD scar at 5 month without any metastatic dissemination.

After multidisciplinary discussion, the patient again recused from surgery.

A salvage endoscopic resection was attempted using ESD technique.

Detection and optical diagnosis of colorectal lesions

11:30–12:30

Friday, 29 April 2022

Club E

OP135 REAL-TIME ARTIFICIAL INTELLIGENCE (AI) AUTOMATIC DIAGNOSTIC SYSTEM FOR COLORECTAL POLYPS USING RESIDUAL NETWORK (RESNET)

Authors Komeda Y.¹, Handa H.^{2,3,4}, Hatori S.², Takenaka M.¹, Kashida H.¹, Kudo M.¹

Institutes 1 Kindai University Faculty of Medicine, Department of Gastroenterology and Hepatology, Osaka, Japan; 2 Kindai University, Faculty of Science and Engineering, Osaka, Japan; 3 Kindai University, Research Institute for Science and Technology, Osaka, Japan; 4 Kindai University, Cyber Informatics Research Institute, Osaka, Japan
DOI 10.1055/s-0042-1744698

Aims Convolutional neural networks (CNNs) are widely used for artificial intelligence (AI)-based image classification. Residual network (ResNet) is a new technology that facilitates the accuracy of image classification by CNN-based AI.

Methods In this study, we developed a novel AI model combined with ResNet to diagnose colorectal polyps. In total, 127,610 images consisting of 62,510 images with adenomatous polyps, 30,443 with non-adenomatous hyperplastic polyps, and 34,657 with healthy colorectal normal mucosa were subjected to deep learning after annotation. Each validation process was performed using 12,761 stored images of colorectal polyps by a 10-fold cross validation.

Results The efficacy of the ResNet system was evaluated by sensitivity, specificity, positive predictive value (PPV), negative predictive value (NPV), and diagnostic accuracy. The sensitivity, specificity, PPV, NPV, and diagnostic accuracy for adenomatous polyps at WLIs were 98.8%, 94.3%, 90.5%, 87.4%, and 92.8%, respectively. Similar results were obtained for adenomatous polyps at narrow-band imagings (NBIs) and chromoendoscopy images (CEIs) (NBIs vs. CEIs: sensitivity, 94.9% vs. 98.2%; specificity, 93.9% vs. 85.8%; PPV, 92.5% vs. 81.7%; NPV, 93.5% vs. 99.9%; and overall accuracy, 91.5% vs. 90.1%).

Conclusions The ResNet model is a powerful tool that can be used for AI-based accurate diagnosis of colorectal polyps.

OP136 MULTI-METHOD VALIDATION OF AN ARTIFICIAL INTELLIGENCE-BASED BOWEL PREPARATION QUANTITATIVE SYSTEM

Authors Yao L.¹, Wu H.¹, Gong R.¹, Zhang L.¹, Yu H.¹

Institute 1 Renmin Hospital of Wuhan University, Wuhan, China
DOI 10.1055/s-0042-1744699

Aims The effectiveness of colonoscopy is dependent on the cleanliness of the bowel. Mandating the standardization of bowel preparation assessment and objectively identifying inadequate bowel preparation is important to improve colonoscopy patients outcome. With the development of artificial intelligence (AI) technology, automatic bowel preparation assessment systems have been developed. Despite the diversity of algorithms and scoring logics, systematic exploration and verification of the optimal algorithm and scoring logic are still

lacking. In this study, we compared the performance among current main-stream models and video output strategies using 816 prospectively enrolled colonoscopy procedures. The aim of this study is to develop an optimum bowel preparation assessment system and improve the standardization of AI-based bowel preparation assessment.

Methods 5 machine learning algorithms and 4 deep learning algorithms were trained for selecting an optimal algorithm in bowel preparation assessment image classification. Among the 9 algorithms, the algorithm with best performance was selected for the video output logic comparison. 4 video output logics, including proportion of categories, average confidence, accumulation of time interval scoring and LSTM that have been applied in gastrointestinal endoscopy before were compared.

Results The DCNN algorithm achieved highest accuracy on bowel preparation image classification (Accuracy = 95.3 %). For the video output logics, CNN & proportion has achieved the highest correlation on reflecting adenoma detection ($p = -0.933$).

Conclusions We proposed a optimum deep learning-based bowel preparation assessment system with multi-method comparison. Further verification of the system might help optimise the current bowel cleansing assessment and assist in standardising practice in the future.

OP137 A NEW ENDOSCOPIC CLASSIFICATION SCORE SYSTEM FOR SERRATED ADENOMAS IN THE COLORECTUM – THE EUROPEAN SERRATED POLYP CLASSIFICATION SCORE (ESCO)

Authors Klare P.^{1,2}, Kainz F.², Haller B.³, Rath T.⁴, Yamamoto S.⁵, Schmid R.M.²

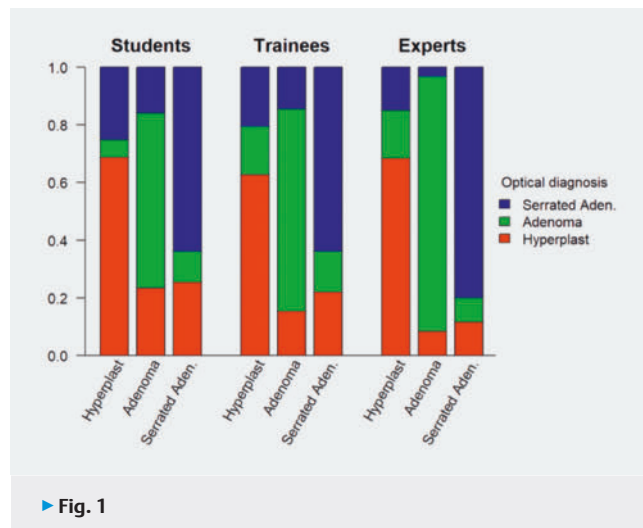
Institutes 1 Krankenhaus Agatharied, Abteilung Gastroenterologie, Diabetologie und Hämato-/Onkologie, Hausham, Germany; 2 Klinikum rechts der Isar der Technischen Universität München, Klinik und Poliklinik für Innere Medizin II, Munich, Germany; 3 Klinikum rechts der Isar der Technischen Universität München, Institut für Medizinische Informatik, Statistik und Epidemiologie, Munich, Germany; 4 Universitätsklinikum Erlangen, Medizinische Klinik 1, Erlangen, Germany; 5 Sahlgrenska University Hospital Östra, Department of Gastroenterology, Gothenburg, Sweden

DOI 10.1055/s-0042-1744700

Aims Several attempts have been established for optical classification of colorectal polyps, yet prediction to distinguish between sessile serrated lesions (SSL), adenomas and hyperplastic polyps remains uncertain. The aim of this study was to develop and validate a new endoscopic classification (ESCO) to differentiate between said polyp classes.

Methods In the first phase a regression analysis was conducted using a previously created polyp database in order to extract features being positively correlated with SSL histopathology. The most important SSL features were NICE-type1 class, polyp localization or size, flat morphology, presence of a mucus-cap, and dark spots on polyp surface. Experts used these features for creating a new classification. The ESCO-classification was validate by a group of 5 medical students, 5 gastroenterology fellows and two expert endoscopists, using a library of 90 polyps.

Results ESCO-based predictions for SSL polyps showed a sensitivity ranging from 60 % to 88 %, specificity from 77 % to 92 %, positive predictive values from 59 % to 81 % and negative predictive value (NPV) from 82 % to 94 %. Accuracy of high-confidence optical predictions ranged from 73.6 % to 82.2 %. Experts reached the best results and performed significantly better compared to trainees regarding accuracy values ($p = 0.016$) (Figure1).



► Fig. 1

Conclusions We formed a new classification system using optical and epidemiological criteria to predict the histopathological diagnosis of colorectal polyps including SSL. Using the ESCO-classification students, fellows and experts achieved good accuracy for optical diagnosis of SSL. The NPV for SSL in the expert group was > 90 %. Further trials in real-time setting are needed to continue validation of the classification.

OP138 THE USE OF HYOSCINE BUTYLBROMIDE IMPROVES SESSILE SERRATED LESION DETECTION

Authors O'Morain N.^{1,2}, Doherty J.^{1,2}, Stack R.^{1,2}, Nolan B.¹, Joy E.², Casey O.¹, Mulcahy H.^{1,2}, Buckley M.¹, Sheridan J.¹, McDermott E.¹, Doherty G.^{1,2}, Cullen G.^{1,2}, Horgan G.¹

Institutes 1 St. Vincent's University Hospital, Centre for Colorectal Disease, Dublin, Ireland; 2 University College Dublin, School of Medicine, Dublin, Ireland

DOI 10.1055/s-0042-1744701

Aims Sessile serrated lesions (SSL) are significant precursors of the alternative serrated neoplasia pathway. Achieving key performance indicators (KPI) in colonoscopy increases the detection of premalignant lesions. The SSL detection rate (SSLDR) is not currently recognised as a KPI, with no agreed minimal SSLDR. Data on the impact of Hyoscine Butylbromide (HB) on adenoma detection is conflicting. This study aimed to report the SSL detection rate over time and identify factors associated with increasing SSL detection.

Methods A retrospective review of screening colonoscopies from 2015-2021 was performed. Adenoma, hyperplastic polyp (HP) and SSL detection rates (ADR, HPDR, SSLDR) were recorded. High grade dysplasia (HGD) and cancer detection was documented. Quality measures including bowel preparation, patient comfort, sedation rates and use of HB were noted.

Results 4145 screening colonoscopies were reviewed. 2967 (71.6 %) had polyps. Male (60.5 %), median age 66 years (range 60-78). The detection rates for adenoma, SSL and HP were 56.9 %, 10.4 % and 23 % respectively. The SSLDR increased over the 6-year study period (7.4 % to 11.6 %, $p = 0.01$) (Figure 1), with no significant difference in individual endoscopists' SSLDR ($n = 6$) (range 9.5 %-12.5 %, $p = 0.6$). Use of HB ranged from 7.1 %-45.6 %. ADR (70.6 % vs 53.9 %, $p < 0.01$) and SSLDR (15.1 % vs. 9.4 %, $p < 0.01$) were greater with the use of HB. Bowel preparation did not impact the SSLDR ($p = 0.15$). SSL detection was associated with a higher HGD detection (5.1 % vs. 3.1 %, $p = 0.028$), but not cancer (3.3 % vs. 3.2 %, $p = 0.98$).



Conclusions SSL detection rates are increasing with associated greater HGD detection. SSL detection was enhanced with the use of HB.

OP139 RESULTS OF THE EVALUATION OF THE SFED TRAINING IN ENDOSCOPIC SUBMUCOSAL DISSECTION

Authors Lambin T.¹, Chaussade S.², Ponchon T.¹, Chevaux J.-B.³, Rahmi G.⁴, Coron E.⁵, Leblanc S.⁶, Lepilliez V.⁶, Leroux J.⁷, Zeevaert J.-B.⁸, Rivory J.¹, Wallenhorst T.⁹, Legros R.¹⁰, Jacques J.¹⁰, Pioche M.¹

Institutes 1 Hôpital Edouard Herriot, Pavillon L, Lyon, France; 2 Hôpital Cochin, Paris, France; 3 CHU Nancy, Nancy, France; 4 Georges Pompidou European Hospital, Paris, France; 5 CHU Nantes, Nantes, France; 6 Hôpital Privé Jean Mermoz, Lyon, France; 7 CHU Rouen, Rouen, France; 8 CHU de Liège, Liège, Belgium; 9 CHU de Rennes, Rennes, France; 10 CHU de Limoges, Limoges, France

DOI 10.1055/s-0042-1744702

Aims ESGE has published a curriculum indicating the prerequisites of ESD (Endoscopic Submucosal Dissection). SFED (French Society of Digestive Endoscopy) has set up a national training course to enable the implementation of this curriculum in France. The objective of our work was to evaluate the contribution of this training on the technical skills of the participants.

Methods The course consisted in a theoretical training with webinars and a practical training during which the participants had to practice ESD on virtual lesions with an experienced trainer on ex-vivo model (cow colon) or on in-vivo model (pig stomach). Theoretical and practical evaluations took place before and after the course with 10 multiple choice questions and 6 workshops evaluating the essential steps of ESD: injection, incision, traction, trimming, marking, dissection in a tunnel. A 7th workshop evaluated the ability to perform a complete dissection, in parallel a skill score was determined. A last workshop evaluated the technical skills on a training box.

Results Twenty participants were selected. The average score at the theoretical evaluation was 38.3 (+/- 5.1)/50 before the training and 40.9 (+/- 4.3)/50 after the training ($p = 0.07$). The average score of the pre-training practical assessment was 51.9 (+/- 12.6)/100 compared to 70.4 (+/- 9.1)/100 post-training ($p < 0.001$). There was a significant improvement in the following items: injection, skill score, complete dissection, marking, and traction.

Conclusions The training set up by the SFED allowed a significant improvement of the participants' technical skills in ESD. Evaluation of participants' performance on human cases is ongoing.

OP140 ARTIFICIAL INTELLIGENCE FOR LEAVING-IN-SITU COLORECTAL POLYPS: RESULTS OF A REAL-TIME CLINICAL TRIAL

Authors Hassan C.^{1,2}, Balsamo G.³, Lorenzetti R.¹, Zullo A.¹, Antonelli G.^{1,4,5}

Institutes 1 Nuovo Regina Margherita Hospital, Department of Gastroenterology and Digestive Endoscopy, Rome, Italy; 2 Humanitas University, Department of Biomedical Sciences, Rozzano (MI), Italy; 3 ASL Roma 1, Department of Histopathology, Rome, Italy; 4 Sapienza University of Rome, Department of Anatomical, Histological, Forensic Medicine and Orthopedics Sciences, Rome, Italy; 5 Ospedale dei Castelli Hospital, Department of Gastroenterology and Digestive Endoscopy, Rome, Italy
DOI 10.1055/s-0042-1744703

Aims Artificial Intelligence (AI) enables cost-saving strategies for screening colonoscopy using optical diagnosis, even in white-light endoscopy (WLE) with no need of advanced imaging. However, AI must match predefined criteria in order to be implemented in clinical setting.

Methods A regulatory-approved deep-learning (CADE-)CADx module for differentiating between adenoma and non-adenoma in unmagnified-WLE was clinically validated in a consecutive series of colonoscopies. For each polyp, the CADx-output, as well as the subsequent endoscopist diagnosis with advanced imaging, was matched against the gold-standard (histology). Negative Predictive Value (NPV) for adenomatous histology for ≤ 5 mm rectosigmoid lesions by CADx and AI-assisted endoscopist was calculated, as well as the agreement between CADx- and histology-based post-polypectomy surveillance intervals.

Results Overall, 544 polyps were removed in 162 patients, of which 295 (54.2%) were ≤ 5 mm rectosigmoid lesions. CADx diagnosis was feasible in 291/295 (98.6%), and NPV for ≤ 5 mm rectosigmoid lesions was 97.6% (95%CI:94.1%-99.1%). In detail, 242/295 (82%) lesions were amenable for Leave-in-situ-strategy. Based on CADx output, 212/544 (39%) would be amenable of Resect-and-Discard-strategy, resulting in a 95.6% (95%CI:90.8%-98.0%) agreement between CADx- and histology-based surveillance intervals according to European guidelines. Similar NPV (97.6%;95%CI94.8%-99.1%) was achieved by the AI-assisted endoscopists with virtual chromoendoscopy, with a CADx-concordant diagnosis in 97.2% of cases.

Table 1

	CADx – White Light	Endoscopist – Blue Light (High Confidence)
Negative Predictive Value	97.6% (94.1%–99.1%)	97.6% (94.8%–99.1%)
Sensitivity	82% (66.5%–92.5%)	81.2% (63.5%–82.8%)
Specificity	93.2% (89.4%–96%)	98% (95.3–99.3%)
Accuracy	91.8% (88%–94.6%)	96.1% (93.1%–98%)

Conclusions CADx exceeded the criteria required to implement cost-saving strategies in screening colonoscopy, potentially reducing related costs in 83% of cases. CADx incorporates optical diagnosis in the same white-light setting of detection, simplifying the diagnostic process of colonoscopy.

OP141 MEAN WEIGHT LOSS POST-ENDOSCOPIC SLEEVE GASTROPLASTY IS INDEPENDENT OF THE SUTURE PATTERN: RESULTS FROM A RANDOMIZED CONTROLLED TRIAL

Authors Gkolfakis P.¹, Van Oytseel P.¹, Mourabit Y.¹, Fernandez M.¹, Yared R.¹, Blero D.¹, Deviere J.¹, Huberty V.¹

Institute 1 Erasme University Hospital, Department of Gastroenterology, Hepatopancreatology and Digestive Oncology, Brussels, Belgium

DOI 10.1055/s-0042-1744704

Aims We compared the efficacy of three different suturing patterns in terms of weight loss after endoscopic sleeve gastroplasty.

Methods: Prospective, single blind, single centre randomized controlled trial. Patients were randomly assigned to one of the three study groups plus lifestyle interventions. In group A, the suture pattern aimed to modify gastric accommodation by increasing the distention ability of the fundus, in group B to reduce the gastric volume and in group C to assume an interruption of the normal gastric emptying. Inclusion criteria: 18-64 years and BMI 30-40 kg/m². The difference in the mean percentage of weight loss [total body weight loss (TBWL) and excessive weight loss (EWL)] among the three groups at 12 months of follow-up consisted the primary outcome.

Results Overall, 48 patients (83.3 % female, age 41.9 years, BMI:33.8 ± 2.7 kg/m²) were assigned to the three groups (16 in each group). In the entire cohort the mean (95 %CI) TBWL and EWL at the end of the follow-up were 10.11 % (7.1-13.12) and 42.56 % (28.23-56.9). Regarding the primary endpoint there was no difference among the three study groups in terms of mean TBWL [9.13 % (2.16-16.11) vs. 11.29 % (5.79-16.80) vs. 9.96 % (4.58-15.35); p = 0.589] and mean EWL [34.54 % (6.09-62.99) vs. 44.75 % (23.63-65.88) vs. 46.94 % (16.72-77.15); p = 0.888] at 12 months post-procedure. Moreover, the three groups did not differ neither in terms of mean gastric emptying time nor in terms of satiety tests at the end of the follow-up.

Conclusions Different suture patterns during endoscopic sleeve gastroplasty demonstrated comparable efficacy in terms of weight loss with all of them achieving ≥ 25 % EWL at 12 months.

OP142V MEDIO-GASTRIC PERORAL ENDOSCOPIC MYOTOMY (MG-POEM) IN THE MANAGEMENT OF POST-SLEEVE GASTRECTOMY (LSG) TWISTS: 4 CASES WITH VIDEO

Authors Gonzalez J.-M.¹, Barthet M.¹

Institute 1 Aix-Marseille Université, Hôpital Nord, Gastroenterology, Marseille, France

DOI 10.1055/s-0042-1744705

Medio-gastric twists represent up to 4 % of LSG, with challenging management. We propose MG-POEM to treat these patients.

Between June 2020 and 2021, four patients presented with alimentary intolerance due to medio-gastric twist following LSG, and underwent MG-POEM after validation in obesity multidisciplinary council.

Procedures were performed under CO₂ with therapeutic gastroscope and a TriangleTip knife. All were successfully completed with intraoperative complication. One patient had antibiotic for postoperative fever and pain. At 6 months, median GOOSS and quality of life were significantly improved. Esophagogram and upper gastrointestinal endoscopy showed the disappearance of the twist.

OP143 MEDIUM-TERM EFFICACY OF THE ENDOSCOPIC TRANSORAL OUTLET REDUCTION (TORE) FOR WEIGHT REGAIN AND DUMPING SYNDROME (DS) AFTER GASTRIC BY-PASS (GB)

Authors Pontecorvi V.¹, Carlino G.², Matteo M.V.¹, De Siena M.¹, Papparella L.G.¹, Bove V.¹, Antonini N.¹, Massari C.¹, Giannetti G.³, Boskoski I.¹, Costamagna G.¹

Institutes 1 Policlinico Universitario Fondazione Agostino Gemelli IRCSS, Digestive Endoscopy Unit, Rome, Italy; 2 Università degli studi dell' Aquila, L'Aquila, Italy; 3 Policlinico Universitario Fondazione Agostino Gemelli IRCSS, Rome, Italy

DOI 10.1055/s-0042-1744706

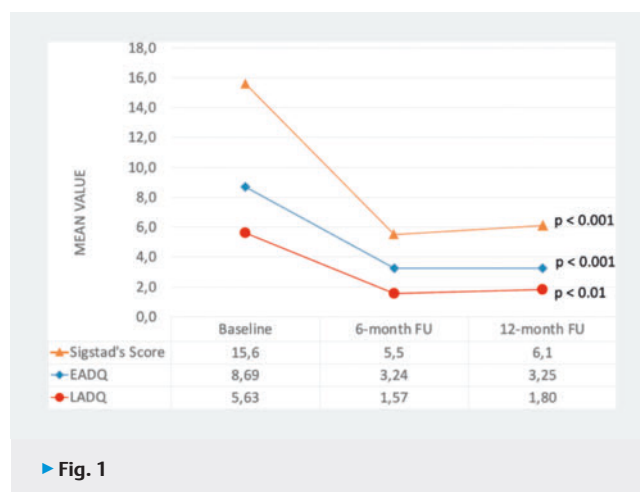
Aims The aim is to evaluate the results of TORe on weight loss, patient safety, and as treatment for symptoms by DS in patients that had dilation of the stoma after GB.

Methods A retrospective analysis was conducted on consecutive patients who underwent TORe between May 2014 and October 2020 at our Hospital. Sigstad's Scoring System (SS), Early and Late Arts Dumping Questionnaire (EADQ and LADQ), body mass index (BMI), percentage of total body weight loss, and percentage of excess weight loss (%TBWL, %EWL), were analyzed before and after the procedure at 6 and 12 months.

Results 81 patients (mean age 45.8 years, 78 % female) underwent TORe. Baseline BMI was 35.8 ± 5.8. Based on SS > 7, 51 patients (63 %) were classified as *dumppers* (mean SS 15.59 ± 5.37). Mean Early ADQ was 8.69 ± 5.7, mean Late ADQ 5.63 ± 4.22. All patients reached 12 months follow-up. No adverse events were observed.

Mean ΔBMI, %EWL and %TBWL at 6 and 12 months were respectively 3.76 ± 3.91 and 3.45 ± 3.6, 54.7 ± 136.3 and 40.6 ± 59.1, 10.2 ± 7.2 and 9.3 ± 9.1.

35 (69 %) and 32 (63 %) dumper patients had resolution of Dumping Syndrome symptoms (SS < 7) at 6 and 12 months. Performing Paired T-test, statistically significant decrease of all scores was observed: -10.1 ± 7.1 and -9.5 ± 7.5 for SS (p-value < 0.001), -5.5 ± 6.0 and -5.4 ± 6.1 for EADQ (p < 0.001), -4.0 ± 4 and -3.8 ± 4.4 for LADQ (p < 0.01) (fig.1).



Conclusions TORe could be a safe and effective procedure for the resolution of symptoms of both Early and Late Dumping Syndrome.

OP144 ENDOSCOPIC VACUUM THERAPY FOR THE TREATMENT OF LEAKS OR FISTULAS POST BARIATRIC SURGERY: A SYSTEMATIC REVIEW AND META – ANALYSIS

Authors Vera Intriago J.M.¹, Hinostrza Duenas F.X.², Flaksbaum Moll C.², Shinin Merchan M.F.², Do Monte Junior E.S.², Mendonça Proença I.², Marques Bernardo W.², Hourneaux De Moura D.T.², Hourneaux De Moura E.G.²

Institutes 1 University of São Paulo, Department of Gastroenterology, São Paulo, Brazil; 2 Hospital das Clínicas da Faculdade de Medicina da Universidade de São Paulo – HC/FMUSP, Gastrointestinal Endoscopy Unit, São Paulo, Brazil

DOI 10.1055/s-0042-1744707

Aims The aim of this study is to perform a systematic review and meta-analysis to investigate the efficacy and safety of EVT in the treatment of leaks and fistulas after bariatric surgery.

Methods Searches were performed on MEDLINE, EMBASE, Central Cochrane, Latin American and Caribbean Health (LILACS), and gray literature, as well as a manual search to identify studies regarding EVT in the treatment of leaks and fistulas after bariatric surgery. Evaluated outcomes include duration of EVT (days), interval between vacuum sponge replacements, number of sessions required during EVT, length of stay during EVT, overall closure rate and adverse events.

Results Five studies with a total of 55 patients were included. The overall closure (success) rate was 84.2% (71.9% LL – 91.8% UL; $P=0.000$). Adverse events occurred in 16.8% (9% LL– 29.4% UL), with no mortality associated to EVT. The average BMI of the included patients was 49.2 (45.1 – 53.3); on average, EVT was selected as first line therapy in 33% of cases (21% – 47%); mean duration of EVT was 17.57 days (15.1 LL – 20.0 UL; $P=0.000$); mean interval between vacuum sponge replacements was 4.04 days (3.81 LL – 4.26 UL; $P=0.000$); requiring 5.8 endoscopy sessions on average during EVT (4.46 LL – 7.19 UL; $P=0.000$); mean length of hospital stay during EVT was 40.2 days (25.1 LL – 55.4 UL; $P=0.000$).

Conclusions Endoscopic vacuum therapy appears to be successful on closing post-bariatric transmural defects, presenting a low rate of adverse events, short duration of treatment and no mortality directly associated to the procedure.

OP145 FIST EXCLUSIVE ENDOSCOPIC BYPASS (EEBP) IN PORCINE MODEL, INCLUDING LIMB LENGTH SELECTION AND DUODENAL EXCLUSION: VALIDATION OF FEASIBILITY, REPRODUCIBILITY AND CLINICAL EFFECT (WITH VIDEO)

Authors Gonzalez J.-M.¹, Ouazzani S.¹, Barthet M.¹

Institute 1 Aix-Marseille Université, Hôpital Nord, Gastroenterology, Marseille, France

DOI 10.1055/s-0042-1744708

Aims We developed the first exclusively endoscopic bypass (EEBP). The aim was to validate the feasibility and safety of the procedure, and to evaluate the effect on growth curve.

Methods The experiment was conducted between 2019 and 2021. Four devices were developed to perform EEBP, including a gastrojejunostomy (GJA) with bypassed loop length control (150cm from pylorus) and duodenal exclusion: a modified lumen apposing stent (GJ-LAMS), an atraumatic forceps, a duodenal exclusion device (DED) and a graduated luminous catheter for loop tracking. The procedures were performed in growing Landrace/White pigs with a dual channel endoscope under CO₂. The first step was the GJA, followed by DED placement 2 weeks later. The follow-up was 9 months.

Results Six pigs (mean initial weight 26.1 ± 2.7 kg) were included. The EEBP technical success rate was 100% without adverse events. In follow-up, the GJ-LAMS migrated in 3 pigs, without closure of the anastomosis, and were replaced. The DED migrated in 3 pigs. All stents could be removed. At autopsy,

anastomoses diameters were 12 to 20mm, the excluded limb length ranged from 100 cm to 240 cm. The anastomoses healed, without evidence of fistula. One animal died 4 days before the end of follow-up, of undetermined cause. The mean weight was 45.6 ± 12.3 kg at 38 weeks (average gain: 19.1 ± 11.3 kg), which was significantly lower than expected growth curves for this breed (100kg).

Conclusions This is the first study demonstrating the technical feasibility and reproducibility of an EEBP showing a break in the weight curve in growing animals.

OP146V SUCCESSFUL ENDOSCOPIC MANAGEMENT OF A SLEEVE GASTRECTOMY LEAK UTILIZING LUMINAL STENTING, PNEUMATIC DILATIONS, ABSCESS DRAINAGE AND SEPTOTOMY

Author Lajin M.¹

Institute 1 SHARP Health Care, Gastroenterology, San Diego, United States

DOI 10.1055/s-0042-1744709

A 33-year-old female presented 6 days after sleeve gastrectomy with a leak. She had a failed surgical repair and underwent endoscopic treatment as follows:

1. Day 9: Luminal stenting (2 overlapping esophageal stents sutured to the esophageal wall).
2. Day 23: Stents removal, pneumatic dilation to an angulation at the incisura, abscess lavage/drainage with 2 transgastric double pigtail stents, and placement of a nasoduodenal feeding tube.
3. Day 40: Pneumatic dilation and exchange of transgastric stents.
4. Day 55: Removal of stents and feeding tube, pneumatic dilation, and septotomy. She was discharged.
5. Day 130: EGD: Epithelialization of the cavity and resolution of the angulation.

Gastroduodenal lesions: improving resection and bleeding prediction

14:00–15:00

Friday, 29 April 2022

Club A

OP147 SAFETY AND EFFICACY OF INTENSIVE ENDOSCOPIC INTERVENTION INCLUDING COLD POLYPECTOMY FOR DUODENAL ADENOMAS IN PATIENTS WITH FAMILIAL ADENOMATOUS POLYPOSIS: A PROSPECTIVE PHASE II COHORT STUDY

Authors Takeuchi Y.¹, Hamada K.^{1,2}, Nakahira H.^{1,3}, Ezoe Y.⁴, Shichijo S.¹, Kanesaka T.¹, Maekawa A.¹, Yamamoto S.¹, Higashino K.¹, Uedo N.¹, Michida T.¹, Ishihara R.¹, Ishikawa H.⁴

Institutes 1 Osaka International Cancer Institute, Gastrointestinal Oncology, Osaka, Japan; 2 Okayama University, Gastroenterology & Hepatology, Okayama, Japan; 3 Ohno Memorial Hospital, Gastrointestinal Endoscopy Center, Osaka, Japan; 4 Ishikawa Gastroenterological Medical Clinic, Osaka, Japan

DOI 10.1055/s-0042-1744710

Aims To investigate the efficacy and safety of intensive endoscopic intervention for non-ampullary multiple duodenal adenoma (NMDA) in patients with FAP in a large prospective cohort.

Methods This is a single-center prospective cohort study conducted at a Japanese cancer referral center. Patients with FAP with Spigelman Stage (SS) ≥ I NMDA, aged ≥ 20 years were eligible for inclusion in the study. The primary endpoint was a down-staging of SS at 1-year follow-up endoscopy compared with the SS at the first intervention.

Results 58 patients [median (range) age: 37 (20-70), 29 male (50%)] with 2424 [median (range) number of polyps: 38 (5-166)] duodenal polyps were enrolled. SS at enrollment was 6 (10%) in Stage II, 24 (41%) in Stage III, and 24

(48 %) in Stage IV. The median (range) procedure time was 33 (15–96) minutes. The Median (range) size of maximum removed polyp in one session was 10 (2–50). Cold snare polypectomy was performed in 98 % (57/58), cold forceps polypectomy in 2 %. Underwater EMR was performed for 4 lesions. None of the 57 patients had perforation and delayed bleeding. SS at 1yr follow-up endoscopy was 1 (2 %) in Stage 0, 2 (3 %) in Stage I, 28 (49 %) in Stage II, 20 (18 %) in Stage III, and 4 (7 %) in Stage IV. Therefore, downstaging in SS was obtained in 72 % (39/54, 95 % CI; 59–82) and stable disease in 22 % (12/54).

Conclusions Intensive endoscopic intervention including cold polypectomy seems safe and effective. Further long-term outcomes should be assessed in this cohort study.

OP148 UNDERWATER ENDOSCOPIC MUCOSAL RESECTION FOR GASTRIC NEOPLASM

Authors Kim D.H.¹, Kim H.-S.¹, Park S.-Y.¹, You H.S.¹, Cho S.Y.¹, Lee Y.H.¹

Institute 1 Chonnam National University Hospital, Gwangju, Korea, Republic of
DOI 10.1055/s-0042-1744711

Aims Underwater endoscopic mucosal resection (UEMR) was recently accepted to treatment of duodenal and colonic neoplasm. However, the effect of UEMR of gastric neoplasm is not well established.

Methods Patients with gastric adenomas <20mm were enrolled. After the gastric lumen had been filled with distilled water, UEMR was performed without submucosal injection. The UEMR of the conventional method is used as a basis, but if the water is not well filled, it is converted to the modified method, and if both cases are not available, it is classified as a technical failure.

Results Twenty-three patients were enrolled. Median age was 64 and male was 69.6 %. Median tumor size was 11mm (range: 6 – 17). Most common location was antrum (65.2 %). Technical success was achieved at 91.3 %. Conventional UEMR was performed at 43.5 % and modified UEMR was performed at 47.8 %, respectively.

Median water infusion amount was 90ml (50 – 220). Median procedure time of endoscopic resection was 216 second. The *en bloc* resection rate of UEMR was 100 %. R0 resection rate of UEMR was 90.5 %. In technical failure cases, all procedures were converted to endoscopic submucosal dissection, and complete resection was performed without complications. Immediate bleeding was observed at 26.1 % and all bleeding was controlled by endoscopic management on-site. Atelectasis was observed at 17.4 % without symptoms. A total of 20 patients underwent follow-up esophagogastroduodenoscopy and recurred in 1 case and additional endoscopic resection was performed.

Conclusions UEMR is efficacious for the treatment of small to intermediate sized gastric neoplasms, but further trials are needed.

OP149 ENDOSCOPIC SUBMUCOSAL DISSECTION IN THE DUODENUM – RESULTS OF THE GERMAN ESD REGISTRY

Authors Fleischmann C.¹, Probst A.¹, Ebigo A.¹, Schirra J.², Albert J.³, Faiss S.⁴, Wallstabe I.⁵, Reinehr R.⁶, Messmann H.¹

Institutes 1 University Hospital Augsburg, Gastroenterology, Augsburg, Germany; 2 University Hospital of Munich LMU, Gastroenterology, München, Germany; 3 Robert-Bosch-Hospital, Gastroenterology, Stuttgart, Germany; 4 Sana Hospital Lichtenberg, Gastroenterology, Berlin, Germany; 5 St. Georg Hospital, Gastroenterology, Leipzig, Germany; 6 Elbe-Elster Hospital, Gastroenterology, Herzberg, Germany
DOI 10.1055/s-0042-1744712

Aims In Europe, endoscopic submucosal dissection (ESD) is not yet the standard treatment for premalignant or early malignant lesions in the gastrointestinal (GI)-tract. High quality data is mostly limited to single center studies, especially when it comes to duodenal ESD. In this study, we present results of the German ESD registry.

Methods The German ESD registry study is a prospective, multicenter trial. Management and evaluation of collected data is done in a central data base at the University Hospital Augsburg. Data were collected anonymously via electronic case report form (eCRF).

Results From the 1st of January 2017 to 31st December 2020, 22 centers included 1884 ESDs, of which 6 centers performed 20 duodenal ESDs. In 11 cases (55.0 %) a classic ESD was performed, in 9 cases a hybrid ESD (45.0 %). Histopathological assessment showed eight adenoma with HGIEN and four with LGIEN, two NET, two heterotopic pancreatic lesions, one hamartoma, one lipoma, one case of hyperplastic tissue and one lesion was not histopathologically classified.

An overall *en-bloc* resection rate of 65.0 % (13/20) was achieved. The R0 resection rate was 55.0 % (11/20) and the curative resection rate of 50.0 % (10/20) respectively. Complications occurred in 4 out of 20 cases (20.0 %). Three delayed bleedings, one requiring blood transfusion, were managed endoscopically. One intraprocedural perforation was documented managed endoscopically as well.

Conclusions Duodenal ESD remains a challenge even for endoscopists with high ESD expertise. Still, there is much room for improvement, not only when it comes R0-resection rate and curative resection, also that concerns the selection of lesions.

OP150V ENDOSCOPIC SUBMUCOSAL DISSECTION FOR THE TREATMENT OF A (GIANT) BALL VALVE SYNDROME

Authors Dias E.¹, Morais R.¹, Marques M.¹, Santos-Antunes J.¹, Garrido I.¹, Macedo G.¹

Institute 1 Centro Hospitalar de São João, Porto, Portugal
DOI 10.1055/s-0042-1744713

An 82 year-old female performed upper digestive endoscopy for diagnostic work-up of iron-deficiency anemia, which revealed a giant pedunculated gastric polyp obstructing the pylorus with extension to the second part of the duodenum. Biopsies were consistent with tubular adenoma with high-grade dysplasia. After multidisciplinary discussion, endoscopic submucosal dissection was performed and the lesion was successfully resected *en-bloc* without adverse events. Histopathological analysis of the specimen confirmed complete curative resection. This case highlights the expanding role of endoscopic submucosal dissection, which allowed a careful, controlled *en-bloc* resection of a giant gastric adenomatous polyp producing ball-valve syndrome.

OP152 USEFULNESS OF THE MODIFIED ROCKALL INDEX TO PREDICT ADVERSE EVENTS IN UPPER GASTROINTESTINAL BLEEDING DUE TO PEPTIC ULCER

Authors Pedregal P.¹, Llovet L.¹, Brunet E.¹, Garcia-Iglesias P.¹, Lira A.¹, Machlab S.¹, Grau G.¹, Junquera F.¹, Melcarne L.¹, Puig-Diví V.¹, Calvet X.¹, Brullet E.¹, Martínez-Bauer E.¹

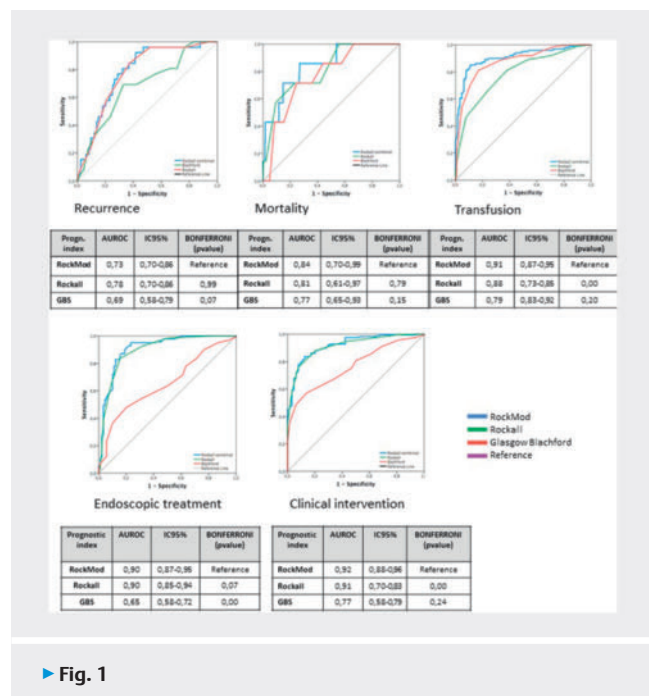
Institute 1 Consorci Sanitari Parc Taulí, Gastroenterology, Sabadell, Spain
DOI 10.1055/s-0042-1744715

Aims The main prognostic indices for the study of upper gastrointestinal bleeding (UGB) have as a common variable the value of haemoglobin. As the Rockall Index does not include haemoglobin, we want to determine if the Rockall index plus the value of haemoglobin (Modified Rockall Index -RockMod-) can predict adverse events to UGB due to peptic ulcer and compare the RockMod with 2 other forecast index: Glasgow-Blatchford and Rockall.

Methods Prospective unicenter study conducted for 5 years. Patients were defined by: 1) Presence of hematemesis, melenas, hematochezia; 2) Confirmed by EGD <24 h after the onset of bleeding. The adverse outcomes considered were: Hemorrhagic recurrence, Red blood cell transfusion, Endoscopic treatment, Clinical intervention (transfusion, endoscopic treatment, embolization and/or surgery), Mortality. The AUROC and its IC95 % were calculated.

culated for the RockMod index and compared for each adverse outcome with the other forecast index.

Results A total of 230 patients were identified consecutively. Observational data is shown in Table 1. When comparing the ROC curves, we find no differences between the 3 indices for recurrence and mortality. RockMod was better than Rockall's index for predicting transfusion and so was GBS. Regarding clinical intervention and endoscopic treatment, RockMod was the same as the Rockall index and better than GBS. All prognostic indices were more accurate in determining the need for transfusion than in the rest of the results (Figure 1).



► Table 1

Mean age (years). Mean ± SD	63.8 (± 18,2)	Sex: men	152/230 (51 %)
Haemoglobin (g/dL). Mean ± SD	9,5 (± 2,4)	Transfusion	101/230 (43.9 %)
Gastric ulcer	93/230 (40.4 %)	Mortality at 30 days	7/230 (3 %)
Forrest		Recurrency	26/230 (11.3 %)
I	51/230 (22,2 %)		
Ila	59/230 (22,1 %)		
Ilb	3/230 (13 %)		
Ilc	36/230 (15,7 %)		
III	54/230 (23,5 %)		
Treatment			
Endoscopic	140/230 (60,9 %)		
Vascular radiology/ embolization	9/230 (3,9 %)		
Surgery	0/230 (0 %)		

Conclusions The RockMod index is better at predicting transfusion than the Rockall, and equivalent to GBS. They are similar for the rest of the results.

Small bowel endoscopy: special challenges – special solutions

14:00–15:00

Friday, 29 April 2022

Club E

OP153V ATYPICAL INTESTINAL ANASTOMOSES (AIA) USING LUMEN APPOSING STENTS IN UNUSUAL CLINICAL SITUATIONS: A MINIMALLY INVASIVE EXTENSION OF EUS-GUIDED GASTRO-JEJUNAL ANASTOMOSES (GJA)

Authors Gonzalez J.-M.¹, Gasmi M.¹, Barthet M.¹

Institute 1 Aix-Marseille Université, Hôpital Nord, Gastroenterology, Marseille, France

DOI 10.1055/s-0042-1744716

We report 4 cases of atypical EUS-guided intestinal anastomoses (AIA) using LAMS. The indications were: gastro-jejunal anastomosis with biliary limb after pancreatoduodenectomy for ERCP access for hilar obstruction; Jeuno-jejunal anastomosis for Candy-cane syndrome after gastrectomy; Ileo-colic anastomoses (2) for small bowel occlusion due to peritoneal carcinomatosis. All procedures were performed with linear therapeutic echoendoscopes. Procedures were either direct approaches with LAMS, or starting needle and wire. Procedures were technically successful without adverse event. In case 1, ECRP could be performed successfully. In others, symptoms were addressed within few postoperative days. After a follow-up from 2 to 15 months, patients remain asymptomatic.

OP154 MAGNET AND WIRE REMODELING FOR THE TREATMENT OF CANDY CANE SYNDROME: FIRST CASE-SERIES OF A NEW APPROACH

Authors Rio-Tinto R.¹, Huberland F.², Van Ouytse P.³, Delattre C.⁴, Dugardeyn S.³, Cauche N.⁴, Delchambre A.², Devière J.³, Blero D.³

Institutes 1 Fundação Champalimaud, Digestive Diseases Unit, Lisboa, Portugal; 2 Université Libre de Bruxelles, Bio, Electro and Mechanical Systems Department, Brussels, Belgium; 3 Université Libre de Bruxelles, Department of Gastroenterology, Hepatopancreatology, and Digestive Oncology, Erasme Hospital, Brussels, Belgium; 4 Brussels Medical Device Center, Brussels, Belgium

DOI 10.1055/s-0042-1744717

Aims Candy cane syndrome (CCS) is a complication after gastrectomy or gastric by-pass and end-to-side anastomosis to a jejunal loop. Preferential passage of food to the blind loop induces early satiety, pain, and regurgitation. An endoscopic device that combines two magnets and a self-retractable wire was designed to perform progressive septotomy with marsupialization. We evaluated the clinical safety and efficacy of this treatment in CCS.

Methods Consecutive patients presenting with symptoms associated with CCS, after gastrectomy or Roux en Y gastric bypass (RYGBP) were treated with the MAGUS (MAGnetic Gastrointestinal Universal Septotome) system. Weight, dysphagia, and pain scores, SF12 QOL physical and mental scores, GERD-HRQL, and Eckardt score were measured at baseline, 1, and 3 months. Satisfaction with therapy and adverse events were monitored during follow-up.

Results Fourteen consecutive patients with CCS were enrolled in the study. Thirteen of the MAGUS systems migrated within 28 days after achieving uneventful complete septotomy. In one case, the magnet had to be collected from the right colon after one month. Treatment was completed in a single endoscopy session. Dysphagia score (2(1-3) vs 1(1-1), $p=0.02$, pain score (7(6-8) vs 1(0-1), $p=0.002$), Eckardt score (5(3-8) vs 1(0-2) $p=0.002$), GERD HRQL score (37(29-45) vs 8(6-23), $p=0.002$), and QOL physical and mental scores were all significantly improved at 3 months. No device or procedure-related SAEs were observed. One patient died during follow-up from evolution of oncological disease.

Conclusions Endoluminal septotomy using a retractable wire and magnet system in CCS is feasible and safe, with rapid improvement of symptoms.

OP155 MOTORIZED SPIRAL ENTEROSCOPY IN PATIENTS WITH PRIOR ABDOMINAL SURGERY: A MULTICENTER OBSERVATIONAL STUDY

Authors Giordano A.¹, Compañy L.², Ruiz-Gómez F.A.², Urpi-Ferruella M.³, Fernández-Gil P.⁴, Alonso-Lázaro N.⁵, Sola Vera J.⁶, Aicart M.⁷, Parejo Carbonell S.⁷, Carretero C.⁸, Prieto C.⁸, Escapa M.¹, Pons V.⁵, González-Suárez B.¹

Institutes 1 Hospital Clínic de Barcelona, Endoscopy Unit, Gastroenterology Department, Barcelona, Spain; 2 Hospital General Universitario de Alicante, Endoscopy Unit, Gastroenterology Department, Alicante, Spain; 3 Hospital del Mar, Endoscopy Unit, Gastroenterology Department, Barcelona, Spain; 4 Hospital Universitario Marqués de Valdecilla, Gastroenterology Department, Santander, Spain; 5 Hospital Universitari i Politécnic La Fe, Gastroenterology Department, Valencia, Spain; 6 Elche General University Hospital, Gastroenterology Department, Elche, Spain; 7 Hospital Universitario Ramón y Cajal, Madrid, Spain; 8 Clínica Universidad de Navarra, Gastroenterology Department, Pamplona, Spain

DOI 10.1055/s-0042-1744718

Aims Motorized Spiral Enteroscopy (MSE) reduces procedure time and increases insertion depth into the small bowel, however there is scarce evidence on factors affecting MSE efficacy. This multicenter study aimed at evaluating diagnostic yield and adverse events of MSE in patients with prior abdominal surgery.

Methods Data of patients undergoing MSE were extracted from our national multicenter database of MSE. Data analyzed were demographic characteristics, indication for procedure, exploration time, depth of maximum insertion, technical success, diagnostic and interventional yield and adverse events.

Results Two-hundred thirteen enteroscopies, 139 antegrade (65.3 %) and 74 retrograde (34.7 %), were included, corresponding to 194 patients (111 males, mean age 64 years). Eighty-four patients (43.3 %) had prior abdominal surgery. Technical success was 94.2 % (131/139) for antegrade and 91.9 % (68/74) for retrograde route. Diagnostic yield for antegrade and retrograde route was 78.4 % and 63.5 %, respectively. The median depth of maximum insertion was 362 cm (IQR 236-517 cm) for antegrade and 102 cm (IQR 33-225 cm) for retrograde enteroscopy. Total exploration rate was 12.4 % (18 complete and 6 combined approach enteroscopies). Interventional yield was 71.8 %. In patients with prior abdominal surgery no differences were detected as per diagnostic yield (72 vs 74.5 %, $p = 0.672$) and small bowel insertion time (37 vs 35 min, $p = 0.702$). The overall adverse event rate was 8.9 % (SAE 1.9 %), with no differences related to prior abdominal surgery ($p = 0.762$).

Conclusions MSE is effective in patients with prior abdominal surgery. In this cohort, adverse event rate was similar to previously published series.

OP156V DISCONNECTION OF SPIRAL OVERTUBE: AN INFREQUENT COMPLICATION OF MOTORIZED SPIRAL ENTEROSCOPY

Authors Muñoz Pérez R.¹, Compañy Catalá L.¹, Ruiz Gómez F.¹, Rodríguez Angulo A.¹, Guilabert Sanz L.¹, Álvarez Arroyo E.¹, Medina Prado L.¹, Martínez Sempere J.¹, Martínez Moreno B.¹, Mangas Sanjuán C.¹, Aparicio Tormo J.R.¹

Institute 1 Alicante General University Hospital, Gastroenterology Department, Alicante, Spain

DOI 10.1055/s-0042-1744719

A 91-year-old man with suspected small bowel lymphoma underwent antegrade motorized spiral enteroscopy, identifying a stenosing lesion with features of lymphoma in jejunum. Biopsies and tattooing proximal to the lesion were performed. During withdrawal we realized that the overtube was embedded in oesophagus. With an inflated 20mm dilatation balloon partial removal was achieved, being completely removed with Magill forceps. An extensive laceration in oesophagus was treated with hemoclips with good results.

This is one of the first cases of disconnection of spiral overtube described in literature. It can be solved with simple endoscopic techniques, without resorting to more aggressive measures.

OP157V RESCUE ENTERO-ENTEROSTOMY WITH A SELF-EXPANDABLE METAL STENT (SEMS) AFTER A FAILED DEPLOYMENT OF A LUMEN-APPPOSING METAL STENT (LAMS): IDENTIFY THE DIRECTION OF BOWEL TRANSIT IS KEY!

Authors Busto V.¹, Bravo S.¹, Ganuza M.¹, Salmón P.¹, Arrubla A.¹, Rodríguez I.¹, Aresté I.¹, Uribarri L.¹, Estremera F.¹, Vila J.J.¹

Institute 1 University Hospital of Navarre, Gastroenterology, Pamplona, Spain

DOI 10.1055/s-0042-1744720

A 40 year-old woman with acute pancreatitis requiring several abdominal surgeries presented with an ileo-cutaneous fistula.

A pediatric gastroscope was inserted through the fistula to the afferent loop (AL). An echoendoscope was inserted through the ileostomy identifying the AL. EUS-guided entero-enterostomy with a lumen-apposing-metallic-stent (LAMS) failed due to loop stiffness with migration of the LAMS to the peritoneal cavity. The LAMS was removed with an endoscope and a rescue entero-enterostomy with a SEMS from the ileal to the AL was performed to bypass and close the fistula.

Entero-enterostomies with SEMS must preserve the bowel transit to avoid secondary bowel occlusion.

OP158V OVERLAP SYNDROME OF JUVENILE POLYPOSIS SYNDROME AND HEREDITARY HEMORRHAGIC TELANGIECTASIA. TWO DISEASES ONE MUTATION

Authors Zamora-Nava L.E.¹, Sanchez-Chavez X.¹, Grajales-Figueroa G.¹, Saul-Perez A.¹, Ramirez-Luna M.A.¹

Institute 1 Instituto Nacional de Ciencias Médicas y Nutrición Salvador Zubirán, Endoscopy Department, Mexico City, Mexico

DOI 10.1055/s-0042-1744721

A 49 yo woman, with history of Osler Weber Rendu syndrome underwent total colectomy due to lower GI bleeding secondary to polypoid lesions, histopathology reported Juvenile Polyposis Syndrome. Videocapsule endoscopy showed vascular lesions and polyps in the proximal jejunum. Antegrade double-balloon enteroscopy was performed, angiectasias were treated with APC and three hamartomatous lesions were resected successfully.

Cholangioscopy – a revival
Friday, 29 April 2022

14:00–15:00
Club H

OP159 DEEP LEARNING AND DIGITAL SINGLE-OPERATOR CHOLANGIOSCOPY (DSOC): AUTOMATIC DIAGNOSIS OF MALIGNANCY STATUS AND MORPHOLOGICAL CHARACTERIZATION OF BILIARY STRICTURES

Authors Afonso J.P.¹, Mascarenhas M.¹, Ribeiro T.¹, Ferreira J.², Vilas-Boas F.¹, Pereira P.¹, Macedo C.¹

Institutes 1 Centro Hospitalar Universitário de S. João, Gastroenterology, Porto, Portugal; 2 Faculdade de Engenharia da Universidade do Porto, Engenharia, Porto, Portugal

DOI 10.1055/s-0042-1744722

Aims Patients with indeterminate biliary strictures (BS) constitute a significant diagnostic challenge. DSOC has enabled morphologic characterization and guided biopsies. However, the diagnostic yield of DSOC remains suboptimal, and the characterization of these lesions has significant interobserver variability. With this work, we intend to develop a Convolutional Neural Network (CNN), for detection of malignant BS in DSOC images and identification of three mor-

phologic features: nodules (NN), papillary projections (PP), and tumor vessels (TV).

Methods We developed and validated a CNN based on DSOC images. Each image was labelled as a normal/benign finding or a malignant lesion if definite histologic evidence of malignancy was available.

The CNN was also trained to detect morphologic features associated with biliary malignancy: NN, PP, and TV. The performance of the CNN was then tested.

Results We used 23595 images from 125 patients (20719 of malignant BS and 2876 of normal or benign findings).

The model presented a sensitivity of 98.9%, specificity of 97.7%, and overall accuracy of 98.7%.

Additionally, the model comprised 2876 images of NN, 1675 images showing PP, and 4153 images of TV. The accuracy for the detection of these features was, respectively, 96.9%, 96.1% and 91.5%.

Conclusions Our group developed a pioneer combined CNN for the simultaneous detection of malignant BS and identification of morphologic features associated with malignancy. Applying AI models to DSOC may increase its diagnostic yield for patients with indeterminate BS. Furthermore, accurate real-time identification of those features may help to guide biopsies, thus increasing their reliability and the diagnostic yield of DSOC.

OP160 DIGITAL SINGLE-OPERATOR CHOLANGIOSCOPY IN DIAGNOSTIC AND THERAPEUTIC BILIO-PANCREATIC DISEASES: A PROSPECTIVE, MULTICENTER STUDY

Authors Fugazza A.¹, Gabbiadini R.¹, Tringali A.², De Angelis C.³, Mosca P.⁴, Maurano A.⁵, Di Mitri R.⁶, Manno M.⁷, Mariani A.⁸, Cereatti F.⁹, Bertani H.¹⁰, Sferazza S.¹¹, Donato G.¹², Tarantino I.¹³, Cugia L.¹⁴, Aragona G.¹⁵, Cantu' P.¹⁶, Mazzocchi A.¹⁷, Canfora M.L.¹⁸, Venezia L.³, Bendia E.⁴, Maroni L.¹⁹, Zulli C.⁵, Conte E.⁶, Soriani P.⁷, Ligresti D.¹³, Vilardo E.¹⁷, Penagini R.¹⁶, Benedetti A.¹⁹, Arcidiacono P.G.⁸, Khalaf K.²⁰, Troncone E.²¹, Costamagna G.², Repici A.¹, Anderloni A.¹

Institutes 1 IRCCS – Humanitas Research Hospital, Division of Gastroenterology and Digestive Endoscopy, Department of Gastroenterology, Rozzano, Italy; 2 Fondazione Policlinico Universitario Agostino Gemelli IRCCS, Università Cattolica del Sacro Cuore, Digestive Endoscopy Unit, Roma, Italy; 3 AOU Città della Salute e della Scienza, University of Turin, Torino, Italy; 4 Ospedali Riuniti, Ancona, Ancona, Italy; 5 Polo G.Fucito Hospital, Mercato San Severino, Italy; 6 ARNAS Civico – Di Cristina – Benfratelli Hospital, Palermo, Italy; 7 Azienda USL Modena, Carpi, Carpi, Italy; 8 Vita-Salute San Raffaele University, Mialno, Italy; 9 Cremona Hospital, Cremona, Italy; 10 Azienda Ospedaliero Universitaria di Modena, Modena, Italy; 11 Santa Chiara Hospital, Trento, Italy; 12 Azienda Ospedaliero-Universitaria Maggiore della Carità, Novara, Italy; 13 ISMETT, Palermo, Italy; 14 Azienda Ospedaliero Universitaria Sassari, Sassari, Italy; 15 Ospedale Civile, AUSL Piacenza, Piacenza, Italy; 16 Fondazione IRCCS Ca' Granda Ospedale Maggiore Policlinico, Milano, Italy; 17 San Giovanni Battista Hospital, Azienda Usl Umbria2, Foligno, Italy; 18 AOU Cagliari, Cagliari, Italy; 19 Università Politecnica delle Marche, Ancona, Italy; 20 Humanitas University, Pieve Emanuele – Milano, Italy; 21 University of Rome "Tor Vergata", Roma, Italy

DOI 10.1055/s-0042-1744723

Aims Digital single-operator cholangioscopy (D-SOC) is an endoscopic procedure that is increasingly used for the management of bilio-pancreatic diseases. We aimed to investigate the efficacy and safety of D-SOC for both diagnostic and therapeutic indications.

Methods This is a multicenter, prospective study (January 2016-June 2019). The primary outcome was to evaluate the procedural success of D-SOC. Secondary outcomes were: D-SOC visual assessment and diagnostic yield of SpyBite biopsy in cases of biliary strictures, stone clearance rate in cases of difficult biliary stones, rate of adverse events for all indications.

Results Eighteen Italian tertiary referral centers participated in the study. D-SOC was performed in 369 patients (201(54,5%) diagnostic and 168(45,5%) therapeutic). Overall, procedural success rate was achieved in 360(97,6%) patients.

The sensitivity, specificity, PPV, NPV and accuracy in biliary strictures were: 88,5%, 77,3%, 83,3%, 84,1% and 83,6% for D-SOC visual impression; 80,2%, 92,6%, 95,1%, 72,5% and 84,7% for the SpyBite biopsy, respectively.

For biliary stones management, complete duct clearance was obtained in 92,1% patients of whom 82,1% in a single session.

Overall, adverse events(AEs) occurred in 37(10%) cases, for which cholangitis was the most common(14, 3,8%). The grade of AEs was mild or moderate for all the cases, except one which was fatal.

Conclusions D-SOC is effective for both diagnostic and therapeutic indications. Most of the AEs were minor and managed conservatively, even though a fatal event has happened in our series that is not negligible and should be considered before using D-SOC for the management of patients with complex bilio-pancreatic diseases.

OP161V EUS GUIDED HEPATICOGASTROSTOMY AND CHOLANGIOSCOPY FOR DIFFICULT INTRAHEPATIC BILE DUCT STONES

Authors [Phillipotts S.¹](#), [El Menabawey T.¹](#), [Martin H.¹](#), [Johnson G.¹](#), [Webster G.¹](#)

Institute 1 University College London Hospitals, Department of Gastroenterology, London, United Kingdom

DOI 10.1055/s-0042-1744724

Biliary stones can be difficult to treat for many reasons, including surgically altered anatomy precluding conventional endoscopic access.

This 39y patient underwent hepaticojejunostomy as an infant and subsequently developed large calculi above the hepaticojejunostomy anastomosis causing cholangitis. The dilated intrahepatic ducts containing calculi were in the left liver and were not accessible percutaneously.

EUS hepaticogastrostomy (HGS) insertion enabled subsequent stone therapy with cholangioscopy and EHL. Two sessions of intraductal therapy cleared the intrahepatic ducts and importantly biliary access via HGS has been maintained for any future therapy.

The video attached demonstrates the technique for HGS placement and subsequent stone therapy.

OP162 SPYGLASS-CHOLANGIOSCOPY: ARE THE DAYS OF THE "BARIUM ENEMA OF THE BILIARY TREE" (ERCP) NUMBERED?

Authors [Vyas A.¹](#), [Matull W.-R.¹](#)

Institute 1 Musgrove Park Hospital, Somerset NHS Foundation Trust, Gastroenterology, Taunton, United Kingdom

DOI 10.1055/s-0042-1744725

Aims Direct Cholangioscopy is a relatively new intervention that has been limited to use in Specialist centres. It has proved helpful for endoscopic management of gallstones and bile duct strictures. We present our experience of introducing SpyGlass-Cholangioscopy to our District General Hospital (DGH). We aim to assess applicability, feasibility and safety of SpyGlass-Cholangioscopy in a DGH setting in England, including a cost analysis compared with surgical bile duct exploration (an alternative for gallstones).

Methods Prospective data was collected for all ERCP patients with SpyGlass-Cholangioscopy between September 2018 and November 2021 using ERCP reports, discharge letters and medical records (number of ERCPs, complications, 30-day mortality, stone clearance at first SpyGlass, SpyBite sensitivity).

Results

► Table 1

Indication	Patient number	Successful therapy at first procedure	Complications	SpyBite sensitivity
Bile Duct Stone	18	16	0	
Hilar Biliary Stricture	7	7	1 (Cholangitis)	80% (4/5)
Biliopathy	2		0	100%
Common Bile Duct Stricture	1		0	100%

28 patients (10 Male, 18 Female) had 32 total procedures and collectively a total 47 previous ERCPs (mean 1.68). 11 patients required repeat ERCP, 4 with SpyGlass, 10 stent removals (8/10 pigtail-stents safe-guarding only, no stones left), 1 further stone removal (SpyGlass), 1 review of findings (resolved severe biliopathy). 1 patient had cholangitis (5.5%), with no other ERCP-related complications. 30-day mortality rate was 0%, reflecting a predominantly outpatient cohort. No patient required SpyGlass-ERCP referral to specialist centre. The nominal NHS cost of laparoscopic bile duct exploration for CBD-stone removal is £6,208 (plus bed-costs £1,775 per day) compared with £959 for day-case ERCP (plus average SpyScope and electrohydraulic lithotripsy costs £2,300).



► Fig. 1 Gallbladder stone invading into CHD, resolution after SpyGlass-Cholangioscopy 9 months later

Conclusions Introduction of SpyGlass-Cholangioscopy to DGH setting was successful, safe, cost-efficient and avoided need for referral to specialist centres.

OP163V PRSS1 HEREDITARY CHRONIC PANCREATITIS: ERCP WITH PANCREATOSCOPY AND PANCREATIC LITHOTRIPSY

Authors Cravero F.¹, Gesualdo M.¹, Sacco M.¹, Rizzi F.¹, Dall'Amico E.¹, Staiano M.T.¹, De Angelis C.G.¹

Institute 1 AOU Città della Salute e della Scienza, University of Turin, Division of Gastroenterology, Endoscopy Unit, Turin, Italy

DOI 10.1055/s-0042-1744726

36 year old man with PRSS1 hereditary pancreatitis complaining severe abdominal pain and presenting dilated main pancreatic duct with a big stone (14 mm) at genu. Pain control was achieved by pancreatic drainage with plastic stent. The next year pancreatic stent was meant to be replaced, but stent went broken and retained during extraction. Our goal was pancreatic stone fragmentation and drainage, retained pancreatic stent removal and insertion of new pancreatic stent. Peroral pancreatoscopy was performed using cholangioscope on guidewire during ERCP. The big stone was fragmented with electrohydraulic lithotripsy device and finally impacted stent could be removed.

OP164V IMPACT OF PERORAL-CHOLANGIOSCOPY TO PLAN SURGERY FOR PROTRUDING BILIARY LESIONS: REPORT OF THREE CASES

Authors Milluzzo S.M.¹, Tringali A.¹, Perri V.¹, Ettorre G.M.², Laurenzi A.², Ardito F.³, Giulianti F.³, Costamagna G.¹

Institutes 1 Policlinico Agostino Gemelli Foundation IRCCS, Digestive Endoscopy Unit, Rome, Italy; 2 Spallanzani Hospital, Surgical Unit POIT, Rome, Italy; 3 Policlinico Agostino Gemelli Foundation IRCCS, Hepatobiliary Surgical Unit, Rome, Italy

DOI 10.1055/s-0042-1744727

Protruding biliary lesions are uncommon findings during radiological or endoscopic evaluation of biliary tree.

Clinical presentation can mimic neoplastic obstruction or stones, arising with abdominal pain, jaundice, fever, itching, and cholestasis.

They were previously discovered as incidental findings during surgery. Nowadays, they can be detected and characterized by cholangioscopy, which allows a direct vision of anatomical extension within the bile duct for surgical planning. In this case series, the role of cholangioscopy for the management of 3 protruding biliary lesions will be reported.

Gastroparesis and outlet obstruction
Friday, 29 April 2022

15:30–16:30
Club A

OP165 GPOEM, A HIGHLY SAFE TECHNIQUE: EVALUATION OF THE SAFETY PROFILE OF GASTRIC PERORAL ENDOSCOPIC MYOTOMY (GPOEM) BY A FRENCH MULTICENTER STUDY

Authors Gonzalez J.-M.¹, Baret F.¹, Jacques J.², Albouys J.², Vanbiervliet G.³, Debourdeau A.⁴, Vitton V.¹, Barthet M.¹

Institutes 1 Aix-Marseille Université, Hôpital Nord, Gastroenterology, Marseille, France; 2 CHU de Limoges, Hôpital Dupuytren, Gastroentérologie, Limoges, France; 3 CHU Nice, Hôpital L'Archet 2, Gastroentérologie, Nice, France; 4 CHU Montpellier, Hôpital Lapeyronie, Gastroentérologie, Montpellier, France

DOI 10.1055/s-0042-1744728

Aims G-POEM is promising for treating refractory gastroparesis. To date, no study specifically evaluated its tolerance. Thus, the aim was to establish a safety profile, focusing on serious adverse events (AEs), and possibly to identify predictive factors of occurrence.

Methods This was a multicenter retrospective observational study conducted in 5 French expert centers. All patients who had a G-POEM between 2015 and 2021 were identified and included for analysis.

The G-POEM procedure followed fully standardized steps. AEs were classified into 3 phases: per endoscopic, early postoperative, and late postoperative (up to 1 month). Their severity was assessed using the Dindo-Clavien classification and ASGE lexicon, and management was described.

Results In total, 217 patients were included (81 men and 136 women, mean age 52 ± 17 years). The average procedural time was 44 ± 14 minutes (12–78). The mean postoperative hospital stay was 3.7 ± 2.3 days.

The severe AEs, classified as Clavien-Dindo 3, was 0.4%: one delayed bleeding requiring transfusion and endoscopic revision. There were no AEs classified as Clavien-Dindo 4 and 5, i.e., no deaths or patients admitted to intensive care. This rate was identical with ASGE lexicon.

The mucosotomy and capnoperitoneum rates were 3.7% and 1.8%, respectively, without clinical consequences. A majority of patients (81.5%) did not present any AEs, even minor.

No predictive factor could be identified.

Conclusions Our study confirms the safety of G-POEM with less than 0.5% of serious AEs, medically managed. This result, associated to an efficacy rate around 65% at 2 years, constitutes a good benefit-risk ratio.

OP166 G-POEM IN REFRACTORY GASTROPARESIS, FOR WHOM? LONG TERM OUTCOMES AND PREDICTIVE SCORE TO IMPROVE PATIENT SELECTION

Authors Labonde A.¹, Lades G.¹, Debourdeau A.², Ragi O.³, Lehmann L.⁴, Vitton V.⁵, Barthet M.⁵, Legros R.¹, Albouys J.¹, Geyl S.¹, Loustaud-Ratti V.¹, Monteil J.¹, Gonzalez S.⁵, Gonzalez J.M.⁵, Jacques J.¹

Institutes 1 CHU de Limoges, Limoges, France; 2 CHU de Montpellier, Montpellier, France; 3 CHU Lyon, Lyon, France; 4 Polyclinique de Limoges, Limoges, France; 5 APHM Hôpital Nord, Marseille, France

DOI 10.1055/s-0042-1744729

Aims Limited data exist concerning the long-term efficiency of G-POEM as a treatment of refractory gastroparesis. This study evaluates the 3-year results of G-POEM in patients with refractory gastroparesis, then investigated predictive factors for procedure success or failure.

Methods This was a prospective multicenter study of all G-POEM operations performed in two expert French centers for refractory gastroparesis with at least 3 years of follow-up ($n = 46$). GCSI was recorded every 6 months during follow-up.

Results Clinical success was 65.2% at 36 months. Median GCSI decreased from 3.33 to 1.80 ($p < 0.0001$) with improvement in all subscales. We create a predictive score concerning G-POEM success or failure to which points were assigned as follows:

► Table 1

Criterion	Score assigned
Nausea subscale < 2	+ 1
Satiety subscale > 4	+ 1
Bloating subscale > 3.5	+ 1
Retention at 4 hours on scintigraphy $> 50\%$	+ 1

A threshold of 2 was identified by receiver operating characteristic curve analysis with an area under the curve of 0.825 that predicted clinical success with 93.3% sensitivity, 56.3% specificity, 80% PPV, 81.8% NPV and 80.4% accuracy. Patients with a score ≥ 2 were significantly more likely to be responders at 3 years than were patients with a score < 2 (80% and 18% respectively; $p = 0.0004$).

Conclusions The clinical success of G-POEM for refractory gastroparesis was 65.2% at 36 months. Our predictive score offers an easy tool that should be confirmed in other studies.

OP167 GASTRIC PERORAL ENDOSCOPIC MYOTOMY (G-POEM) FOR REFRACTORY GASTROPARESIS: 12-MONTH FOLLOW-UP RESULTS FROM AN ITALIAN TERTIARY ACADEMIC HOSPITAL

Authors Barchi A.¹, Mandarino F.V.¹, Azzolini F.¹, Esposito D.¹, Biamonte P.¹, Fanti L.¹, Viale E.¹, Danese S.¹

Institute 1 San Raffaele Scientific Institute, Milan, Italy

DOI 10.1055/s-0042-1744730

Aims The aim of this prospective observational study is to evaluate the efficacy of the G-POEM in 12 months-follow up in patients with gastroparesis refractory to medical therapy.

Methods Eighteen patients with refractory gastroparesis, who consecutively underwent G-POEM from March 2019 to October 2020 at San Raffaele Hospital (Milan, Italy), were enrolled. Primary outcome was clinical success, defined as an improvement $\geq 50\%$ in the average Gastroparesis Cardinal Symptom Index (GCSI) score at 12 months, compared to baseline. Secondary outcomes were technical success, changes at gastric emptying study (GES) at 3 months, and to identify any predictive factors of clinical success.

Results Clinical success was 38.89% at 3 months, 62.5% at 6 months and 71.4% after 1 year. Average GCSI score reduced significantly: 2.64 ± 0.92 at baseline, 1.42 ± 0.78 at 3 months ($p < 0.0001$), 1.14 ± 0.82 at 6 months ($p < 0.0001$) and 1.19 ± 0.78 at one year ($p < 0.0001$) after G-POEM. Technical success was achieved in all procedures (100%). One intraprocedural pneumomediastinum, 2 mucosal burns and 1 perforation were observed.

At 3 months-GES, gastric emptying half time and percent 2-hours gastric retention reduced modestly ($p = 0.22$ and $p = 0.12$). Univariate regression analysis showed post-surgical gastroparesis ($p = 0.05$), baseline nausea/vomiting GCSI score ($p = 0.03$) and baseline fullness/early satiety GCSI score ($p = 0.02$) had significant association with clinical success at 12 months.

Conclusions G-POEM may be an effective procedure for patients with refractory gastroparesis, although the correlation between symptoms and gastric motility remains to be understood.

OP168V CLIP-ANCHORING TECHNIQUE: A FAST, CHEAP, AND EFFICIENT WAY TO CLOSE A G-POEM TUNNEL

Authors Héroin L.¹, Pioche M.², Lafeuille P.², Jacques J.³, Bordet M.⁴, Mayer P.¹, Lambin T.²

Institutes 1 Nouvel Hôpital Civil, Gastroenterology and Endoscopy, Strasbourg, France; 2 Edouard Herriot Hospital, Department of Endoscopy and HepatoGastroenterology, Lyon, France; 3 Dupuytren University Hospital, Gastroenterology and Endoscopy Unit, Limoges, France; 4 University Hospital of Rennes, Department of Gastroenterology, Rennes, France

DOI 10.1055/s-0042-1744731

We report the case of a patient suffering from severe diabetic gastroparesis. We performed a G-POEM. Immediately after making the tunnel entrance, the same current was used to make three small incisions on each side of the tunnel entrance to allow clip anchoring at the end of the procedure. The rest of the procedure was a standard G-POEM. At the end of the procedure, the previously made incisions were used to place three clips to ease the tunnel closure (clip anchoring technique). The overall procedure lasted 25 minutes and the tunnel closing lasted 3 minutes.

OP169 OUTCOMES OF COMBINED MANAGEMENT BILIARY AND GASTRIC OUTLET OBSTRUCTION (CABRIOLET STUDY): A MULTICENTRE RETROSPECTIVE ANALYSIS

Authors Vanella G.¹, Bronswijk M.^{2,3}, van Wanrooij R.L.⁴, Dell'Anna G.¹, Laleman W.², van Malenstein H.², Voermans R.P.⁵, Fockens P.^{4,5}, van der Merwe S.², Arcidiacono P.G.¹

Institutes 1 IRCCS San Raffaele Scientific Institute, Pancreatobiliary Endoscopy and Endosonography Division, Pancreas Translational and Clinical Research Center, Milan, Italy; 2 University Hospitals Gasthuisberg, University of Leuven, Department of Gastroenterology and Hepatology, Leuven, Belgium; 3 Imelda General Hospital, Department of Gastroenterology and Hepatology, Bonheiden, Belgium; 4 Vrije Universiteit, Gastroenterology Endocrinology & Metabolism, Department of Gastroenterology and Hepatology, Amsterdam, Netherlands; 5 University of Amsterdam, Gastroenterology Endocrinology & Metabolism, Department of Gastroenterology and Hepatology, Amsterdam, Netherlands
DOI 10.1055/s-0042-1744732

Aims Combined Biliary (BO) and Gastric Outlet Obstruction (GOO) is a challenging scenario, even in the era of therapeutic EUS, as GOO might reduce the clinical success of EUS-guided biliary drainage. Little is known on post-procedural dysfunction-free survival (DFS) of different combinations used to treat double obstruction (DO).

Methods All consecutive patients with DO treated between 2016-2021 in 3 tertiary academic centres were eligible if between-procedures interval < 180 days and post-procedural follow-up (FU) > 30 days. Multiple combinations were allowed involving duodenal stenting [DS], EUS-guided gastroenterostomy [EUS-GE], hepaticogastrostomy [EUS-HGS], choledochoduodenostomy [EUS-CDS], transpapillary stenting [TPS]. Primary outcome was any recurrent BO/DO needing reintervention. DFS probability was estimated by Kaplan-Meier analysis.

Results Ninety-three patients with DO were eligible (male 46%; median age 67 [60-76]; pancreatic cancer 73%), resulting in 103 procedure combinations. Combinations with DS experienced more primary failure than those using EUS-GE (OR = 3.2 [0.94-11.1]). Different combinations showed significantly different risk of recurrence during FU (p = 0.009). EUS-GE + HG combination showed the longest estimated DFS, while DS + EUS-CD and DS overlying TPS the shortest, with a recurrence HR of 5.1 [1.9-14.1] and 2.6 [1.2-5.9] respectively.

Conclusions Despite the limitations of an underpowered inclusion per each combination, this study suggests that combinations including DS versus EUS-GE are more prone to dysfunction, while introducing new to-be-proven trends. EUS-CD might have reduced efficacy and patency in the context of GOO, either above a DS or with GE in place. GE + HG in this setting seems promising. Combined obstruction deserves specific prospective evaluation beyond the expected results of single procedures.

OP170V AN UNUSUAL CAUSE OF ABDOMINAL OBSTRUCTION IN A 10-YEAR-OLD BOY SUCCESSFULLY TREATED BY ENDOSCOPY

Authors Héroin L.¹, Lafeuille P.², Rossignol G.³, Heissat S.⁴, Dubois R.³, Rivory J.², Pioche M.²

Institutes 1 Nouvel Hôpital Civil, Gastroenterology and Endoscopy, Strasbourg, France; 2 Edouard Herriot Hospital, Department of Endoscopy and HepatoGastroenterology, Lyon, France; 3 Hôpital Femme Mère Enfant, Hospices Civils de Lyon, Service de Chirurgie Pédiatrique, Lyon, France; 4 Hospices Civils de Lyon, Hôpital Femme-Mère-Enfant, Hépatologie gastroentérologie et nutrition pédiatrique, Bron, France
DOI 10.1055/s-0042-1744733

We report the case of an upper GI obstruction due to an acute bleeding within a duodenal duplication cyst. We performed an endoscopic marsupialization of the cyst. Endoscopic ultrasound was performed: the cyst measured 7.4x4.4

cm with both solid and liquid components. It was punctured to put a guide wire inside. A colonoscope was then with a hood to perform an incision on top of the cyst, following the guidewire. After penetrating inside, a snare was used to remove the remaining clots. A double pigtail stent was placed. The patient was able to eat the following day.

Colonoscopy screening and detection rates 15:30–16:30
Friday, 29 April 2022 Club E

OP171 TEXTURE AND COLOR ENHANCING IMAGING (TXI) INCREASES ADENOMA DETECTION RATE IN COLONOSCOPY: INTERIM ANALYSIS OF A RANDOMIZED CONTROLLED TRIAL

Authors Antonelli G.^{1,2}, Bevivino G.¹, Ebigbo A.³, Pecere S.⁴, Cereatti F.¹, Akizue N.⁵, Di Fonzo M.¹, Coppola M.¹, Barbaro F.⁴, Caruso A.¹, Okimoto K.⁵, Antenucci C.¹, Matsumura T.⁵, Zerboni G.¹, Grossi C.¹, Meinikheim M.³, Papparella G.⁴, Spada C.⁴, Costamagna G.⁴, Messmann H.³, Hassan C.⁶, Iacopini F.¹

Institutes 1 Ospedale dei Castelli Hospital, Department of Gastroenterology and Digestive Endoscopy, Rome, Italy; 2 Sapienza University of Rome, Department of Anatomical, Histological, Forensic Medicine and Orthopedic Sciences, Rome, Italy; 3 Universitätsklinikum Augsburg, III Medizinische Klinik, Augsburg, Germany; 4 Fondazione IRCCS Policlinico Gemelli, Digestive Endoscopy Unit, Rome, Italy; 5 Chiba University Hospital, Department of Gastroenterology, Chiba, Japan; 6 Humanitas University, Department of Biomedical Sciences, Rozzano (MI), Italy
DOI 10.1055/s-0042-1744734

Aims Virtual chromoendoscopy techniques to enhance imaging during colonoscopy have shown controversial results in increasing Adenoma Detection Rate (ADR). A new imaging modality, Texture and Color Enhancing Imaging (TXI, Exera X1, Olympus, Japan) was recently proposed as a substitute to standard white light (WLI) colonoscopy. We performed an interim analysis of an ongoing multicenter, randomized trial to assess the efficacy of TXI in detection of colorectal neoplasia.

Methods We enrolled consecutive patients > 40 years old undergoing screening, surveillance or diagnostic colonoscopies at 4 centers (Italy, Germany, Japan) from September through December 2021. Patients were randomly assigned (1:1) to groups undergoing colonoscopies with TXI or WLI (controls). The primary outcome was adenoma detection rate (ADR, the percentage of patients with at least 1 histologically proven adenoma or carcinoma). Secondary outcomes were adenomas detected per colonoscopy (APC), and withdrawal time. Odds Ratios (OR), adjusted for age, sex and colonoscopy indication were calculated.

Results We currently enrolled 536 patients (9 expert endoscopists) out of a total expected of 800 (age: 62.9 ± 9.08 years old; gender M/F: 330/268). ADR was statistically significantly higher in the TXI group (153/268, 57.1%) than in the WLI group (113/268, 42.2%; adjusted OR: 2.0; 95%CI: 1.39 to 1.89), as well as APC (1.53; 95%CI: 1.29-1.71 vs 1.04; 95%CI: 0.88-1.22). No statistically significant difference in withdrawal time (TXI: 7.76 ± 2.09 minutes vs WLI: 8.07 ± 1.78; p = ns) was observed.

Conclusions In an interim analysis of a multicenter, randomized trial, we found that the new TXI imaging modality increases ADR and adenomas detected per colonoscopy.

OP172 POLYP SIZE BUT NOT HISTOLOGIC TYPE IS ASSOCIATED WITH RISK FOR COLORECTAL CANCER MORTALITY IN A LARGE SCREENING COHORT

Authors Zessner-Spitzenberg J.^{1,2}, Waldmann E.^{1,2}, Jiricka L.^{1,2}, Rockenbauer L.-M.^{1,2}, Hinterberger A.^{1,2}, Majcher B.^{1,2}, Trauner M.¹, Ferlitsch M.^{1,2},

Institutes 1 Medical University of Vienna, Vienna, Austria; 2 Quality Assurance Working Group, Austrian Society for Gastroenterology and Hepatology, Vienna, Austria

DOI 10.1055/s-0042-1744735

Aims Histologic workup and determination of size of colorectal polyps is needed for the assignment to surveillance colonoscopy, however recent guidelines excluded villous components in adenomas as a high-risk feature. We aimed to assess long-term colorectal cancer mortality in a screening cohort of the Austrian colorectal cancer screening program, in patients with removed polyps ≤ 10 mm and > 10 mm as well as histologic types (tubulovillous, any villous component and serrated).

Methods Mortality outcomes in patients with either negative colonoscopy, polyps ≤ 10 mm, > 10 mm and histologic type were calculated using cumulative incidence competing risks method with death from CRC and death from other causes as competing risks. Association of polyp size or histologic features with the risk of CRC death was assessed using Cox proportional hazards model.

Results 259,815 patients were included in the analysis. 3.9% had polyps > 10 mm removed at colonoscopy, 17.2% had tubular adenomas, 3.9% had adenomas with any villous component (villous or tubulovillous) and 16.1% had serrated polyps. Patients with polyps > 10 mm removed at screening had a 10-year cumulative rate of CRC death of 0.58% (CI 0.580-0.581%), for those with polyps ≤ 10 mm mortality was 0.14% (CI 0.140-0.141%), and for those with a negative colonoscopy 0.097% (CI 0.096-0.097%). Only polyp size > 10 mm, but no histologic type was associated with CRC mortality (HR 3.41, CI 1.73-6.74).

Conclusions We support current guidelines not using villous histology as a high-risk feature and propose to keep the current polyp size cutoff of 10mm for surveillance colonoscopy.

OP173 CT-COLONOGRAPHY IN FECAL IMMUNOCHEMICAL TEST POSITIVE PATIENTS IN A COLORECTAL CANCER SCREENING PROGRAM – YIELD AND INCIDENCE OF INTERVAL CARCINOMAS

Authors Moen S.¹, Marijnissen F.E.¹, Terhaar Sive Droste J.S.², de Vos tot Nederveen Cappel W.H.³, Spanier M.B.W.⁴, Huisman J.F.³, Dekker E.⁵, Stoker J.⁶, Kuipers E.J.¹, Thomeer M.G.J.⁷, Spaander M.C.W.¹

Institutes 1 Erasmus MC University Medical Center, Department of Gastroenterology and Hepatology, Rotterdam, Netherlands; 2 Jeroen Bosch Hospital, Department of Gastroenterology and Hepatology, 's Hertogenbosch, Netherlands; 3 Isala Hospital, Department of Gastroenterology and Hepatology, Zwolle, Netherlands; 4 Rijnstate Hospital, Department of Gastroenterology and Hepatology, Arnhem, Netherlands; 5 Amsterdam University Medical Center location AMC, Department of Gastroenterology and Hepatology, Amsterdam, Netherlands; 6 Amsterdam University Medical Centers, Department of Radiology and Nuclear Medicine, Amsterdam, Netherlands; 7 Erasmus MC University Medical Center, Department of Radiology, Rotterdam, Netherlands

DOI 10.1055/s-0042-1744736

Aims In the Dutch colorectal cancer (CRC) screening program, fecal immunochemical test (FIT) positive screenees are offered CT-colonography (CTC) when colonoscopy is not possible due to contraindications or patient preferences. Literature on CTC screening in FIT-positives is scarce and incidence of interval carcinomas for this population is yet unknown.

Methods In this retrospective study, we assessed yield and incidence of interval carcinomas in FIT-positive screenees who directly underwent CTC between 2014-2019 in the Dutch CRC screening program. Centers with > 50 CTC's were approached for data collection. Data were linked with the National Cancer Registry to identify interval carcinomas.

Results Out of 2983 FIT-positive screenees (mean age 68.2 years) scheduled for CTC, 2794 (93.7%) underwent CTC. Most advanced lesion detected by CTC was CRC in 160 (5.7%), polyps > 10 mm in 533 (19.1%) and polyps < 10 mm in 478 (17.1%) screenees. A total of 987 (35.3%) additional endoscopies were

performed. Histologically confirmed advanced neoplasia was present in 587 (21%) screenees. Most advanced histologically confirmed lesion was CRC in 109 (3.9%) and advanced adenoma in 478 (17.1%) screenees. Two CTC detected CRC's were confirmed by radiological imaging and four CTC detected CRC's did not receive further examination. A total of 16 (0.6%) interval carcinomas occurred after a median follow-up of 49 months (range 11-92).

Conclusions CTC detected advanced neoplasia in only 21% of FIT-positive screenees and a substantial proportion of post-CTC interval carcinomas was found. This underlines the need for a structured quality assurance program for CTC's performed in FIT-positive screenees.

OP174 COLORECTAL CANCER SCREENING IN PATIENTS BETWEEN 45-49 YEARS OLD: IS IT WORTHWHILE?

Authors Revés J.¹, Nascimento C.¹, Morão B.¹, Frias Gomes C.¹, Abreu N.², Glória L.¹, Ferreira A.¹

Institutes 1 Hospital Beatriz Ângelo, Gastroenterology, Loures, Portugal; 2 Hospital Dr. Nélito Mendonça, Gastroenterology, Funchal, Portugal
DOI 10.1055/s-0042-1744737

Aims Colorectal cancer (CRC) incidence is rising in young adults and recent US guidelines recommend CRC screening in individuals between 45-49yo. We aim to assess the utility of CRC screening colonoscopy in a younger Portuguese population.

Methods Retrospective cross-sectional study including average-risk individuals for CRC screening between 45-49yo, who performed a high-quality screening or diagnostic colonoscopy. A control group of average-risk individuals between 50-75yo was included. High-risk polyps (HRP) were defined as polyps ≥ 10 mm, with tubulovillous histology or high-grade dysplasia.

Results 268 individuals were included, 135 between 45-49 yo (47yo, IQR 46-49) and 133 in the control group (62yo, IQR 55-67). There was a significantly higher number of males in the control group (51.9% vs 34.1%, $p=0.003$). The polyp detection rate (PDR) (60.9% vs 28.1%, $p<0.001$) and the adenoma detection rate (ADR) (44.4% vs 17.0%, $p<0.001$) were significantly higher in the group between 50-75yo. There were no significant differences in the number of HRP (27.2% vs 13.2%, $p=0.09$) and mean number of polyps detected per colonoscopy [2.6 (95%CI 2.0-3.2) vs 2.0 (95%CI 1.5-2.5), $p=0.12$]. The PDR and ADR were still significantly lower in the younger group, even after adjusting for gender (OR 0.28, 95%CI 0.16-0.47, $p<0.001$ and OR 0.29, 95%CI 0.16-0.51, $p<0.001$, respectively). The number needed to screen (NNS) to detect polyps in the younger group was 3 and to detect adenomas was 4.

Conclusions Although there is a lower PDR and ADR in young individuals, the low NNS suggest that CRC screening could be considered in younger individuals. Further cost-effectiveness analyses are needed.

OP175 DETECTION RATE OF SESSILE SERRATED LESIONS AND ACCURACY OF OPTICAL BIOPSY AS QUALITY INDICATORS

Authors Gubbiotti A.¹, Spadaccini M.¹, Maselli R.¹, Anderloni A.¹, Carrara S.¹, Galtieri A.¹, Ferrara E.C.¹, Pellegatta G.¹, Fugazza A.¹, Alfaroni L.¹, Da Rio L.¹, Migliorisi G.¹, Masoni B.¹, Brandaleone L.¹, Bertoli P.¹, Poletti V.¹, Ferretti S.¹, Polverini D.¹, Marozzi G.¹, Terrin M.¹, Mastroiocco E.¹, Franchellucci G.¹, Hassan C.¹, Repici A.¹

Institute 1 Humanitas Research Hospital, Rozzano, Milan, Italy
DOI 10.1055/s-0042-1744738

Aims Serrated pathway is thought to account for up to one-third of overall colorectal cancers (CRC), and a plausible cause of interval CRC. There is discordance in detection outcomes both from endoscopist and pathologist perspectives. Our study aims to report the SL detection performances in a large cohort of patients and investigate factors affecting endoscopist performances.

Methods We conducted a retrospective review of all average-risk patients screening or surveillance colonoscopies from 2019 to 2021 in our centralized

pathology centre (Humanitas Research Hospital, Italy). SSL detection rate (SDR), and the mean number of SL per colonoscopy (SL-PC) were assessed as primary end-point. Diagnostic accuracy of optical biopsy for SLs (defined as the rate of CR lesions detected and correctly addresses as serrated) was assessed as a secondary end-point. Endoscopists were categorized as senior specialists (≥ 2000 colonoscopies), junior specialists and trainees; secondly, according to their main field of interest into luminal and not luminal endoscopists.

Results In 10368 patients (M/F = 0.99, mean age: 61.17 ± 11.13), 831 serrated lesions (97.9%, $n = 814$, Sessile Serrated Lesions, SSLs; 2.1%, $n = 17$, Traditional serrated adenomas, TSAs) were detected. SL-DR widely varied among the 32 endoscopists, ranging from 1.69% to 9.56% (mean rate 5.04%, 523/10368). Luminal-dedicated endoscopists presented with higher detection performances (7.08% vs 3.33, RR: 2.13; $p < 0.0001$).

On the other hand, overall endoscopic experience did not affect the performances in serrated detections, with no differences among senior, junior specialist, and trainee. Overall, accuracy of optical biopsy for SL was 64%. A trend favouring luminal endoscopist emerged, similarly to SL-DR; however, no statistical significance was reported ($p = 0.27$).

Conclusions Relevant variability in terms of serrated detection performances was confirmed among endoscopists in the same patient population and centralized pathology. SL-DR should be upgraded as a key quality indicator of detection, and this also applies to optical biopsy for their characterization.

OP176 PREVALENCE AND RISK FACTORS FOR SESSILE SERRATED LESIONS: A PROSPECTIVE STUDY IN A COLORECTAL CANCER SCREENING POPULATION

Authors Bustamante-Balén M.¹, Satorres C.², Lorenzo-Zúñiga V.¹, Giner F.³, Alonso-Lázaro N.¹, García-Campos M.¹, Sánchez-Montes C.¹, López-Muñoz P.¹, Argüello L.¹, Pons-Beltrán V.¹

Institutes 1 Hospital Universitari i Politècnic La Fe, Gastrointestinal Endoscopy Unit, Valencia, Spain; 2 Hospital Universitari de La Plana, Gastroenterology, Villareal, Spain; 3 Hospital Universitari i Politècnic La Fe, Pathology, Valencia, Spain

DOI 10.1055/s-0042-1744739

Aims To determine the prevalence of SSL in a FIT-based CRC screening program and to assess possible risk factors related to SSL development in comparison to adenomas.

Methods All individuals attending a population-based CRC screening program between April 2017 and October 2018 were prospectively included. Every individual answered a questionnaire including age, sex, chronic diseases, toxic habits, familiar history of polyps and CRC, and ASA or AINE consumption. Height, weight, and abdominal perimeter were also recorded. All participant endoscopists followed a structured training program on the detection of SSL. Strict pathological criteria were followed to diagnose SSLs. To minimize inter-observer variability among pathologists, three rounds of serrated lesion diagnosis were performed until getting a kappa > 0.6 . Prevalence was calculated as the number of patients with at least one SSL/total number of individuals. A multivariable logistic regression analysis was performed to assess risk factors for SSL. An a priori sample size of 740 individuals for the primary objective was calculated.

Results 750 individuals were included [358 (47.4%) women; median (range) age 61.6 years (50.7–72.1)]. We found 2331 lesions [1571 (67.4%) adenomas, 121 (5.2%) SSL; median (SD) size 4 mm (1–50)]. Prevalence of SSL and right-sided SSL was 10.3% and 6.3% respectively. Risk factors are summarized in Table 1.

► Table 1

SSL	Adjusted OR (95%CI)	Adenoma	Adjusted OR (95%CI)
Abdominal perimeter > 95 cm	1.97 (1.02–3.77)	Age	1.06 (1.03–1.10)
		Tobacco	2.20 (1.34–3.59)
		Alcohol	1.00 (1.00–1.01)
		Familiar history of CRC	4.42 (1.21–16.03)

Conclusions 1) Prevalence of SSLs in a FIT-based CRC screening program following strict diagnostic criteria is 10.3%; 2) SSLs and adenomas have different risk factors for development. SSLs may be more related to obesity and less related to toxic habits and familiar risk for CCR.

What's new in imaging ?
Friday, 29 April 2022

15:30–16:30
Club H

OP177 IN-VIVO DETECTION AND DIAGNOSIS OF GASTRIC PRENEOPLASTIC LESIONS BY FOURTH-GENERATION ENDOCYTOSCOPY: A PILOT STUDY

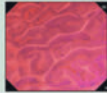






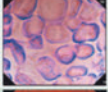


Authors Vasapolli R.¹, Macke L.¹, Koch N.¹, Neuhaus L.¹, Schirra J.¹, Neumann J.², Mayerle J.¹, Malfertheiner P.¹, Schulz C.¹

Institutes 1 Hospital of the Ludwig Maximilians University of Munich, Department of Internal Medicine II, Munich, Germany; 2 Faculty of Medicine, Ludwig-Maximilians-University of Munich, Institute of Pathology, Munich, Germany

DOI 10.1055/s-0042-1744740

Aims Endocytoscopy (EC) provides ultra-high magnification images and enables in-vivo histologic assessment of the mucosa. Aim of our study was to characterize features related to gastric precancerous lesions (GPL) and to assess diagnostic performances of EC both in antrum and corpus compared to standard histopathology.

Methods 80 gastric areas (36, antrum; 44, corpus) of 25 prospectively recruited patients were analyzed. All endocytoscopies were performed by one expert endoscopist (A) by using an Olympus GIF-H290EC-endocytoscope and double staining technique. Histopathology of target biopsies was used as gold standard. EC diagnosis was made as demonstrated in Figure 1.

EC Diagnosis	Histopathology	Features		
EC 1	Normal (n= 6; 7.5%) or chronic gastritis (n= 45; 56.25%)	Regular glandular structure, homogeneously round or slightly oval gastric pits, well-preserved lumen, uniform pattern of small, round, poorly-stained nuclei with homogenous size		
EC 2a	Atrophic gastritis	Strongly irregular glandular structure, partially missing crypts or enlarged pits opening with thinner border, visible translucent vessels, reduced dye-uptake		
EC 2b	Intestinal Metaplasia (n= 11; 13.75%)	Lobulated, thicker or tubulo-villous glandular structure, more compact arrangement with lumen narrowing (slit-like lumen), presence of goblet cells, increased dye-uptake		
EC 2ab	Atrophic gastritis with intestinal metaplasia (n= 14; 17.50%)	Combination of EC2a and EC2b features		
EC 3	Dysplasia and/or gastric cancer (n= 3; 3.75%)	Distortion and loss of glandular structure, no recognizable lumen or pits, abnormal nuclei (hyperchromatic, disarranged, with heterogeneity in size and shape, increased in number or enlarged)		

► Fig. 1

After independent EC-diagnosis 419 high-quality EC-images were selected by endoscopist A and reviewed by 3 endoscopists (B, with minor experience in EC, C and D, with no experience in EC but trained for images assessment), who were blinded to endoscopic findings and histopathology.

Results Gastric areas were histologically classified as shown in Figure 1.

The diagnostic performances of EC for GPL detection are summarized in the Table 1. The mean sensitivity, specificity and accuracy for EC diagnosis of GPL (EC2a/2b/2ab + EC3 vs. EC1) were 88 %, 93 % and 91 % among endoscopists A

and B and 86 %, 68 % and 74 % among endoscopists C and D, respectively. The interobserver agreement was substantial (κ -value 0.75, $p < 0.001$) between the two EC experts and fair (κ -value 0.29, $p = 0.006$) between the two non-expert endoscopists.

Conclusions New-generation EC has a potential to identify GPL with high diagnostic accuracy, high reliability and good reproducibility. Training and experience in performing EC affect substantially the diagnostic performances.

► Table 1

EC 1	EC 2a	EC 2b	EC 2a/2b/2ab	EC 2 + EC3
Endoscopist A: Sensitivity 98.08 % (89.74–99.95); Specificity 96.43 % (81.65–99.91); Accuracy 97.50 % (91.26–99.70); Positive predictive value 98.08 % (88.15–99.71); Negative predictive value 96.43 % (79.47–99.47)	Endoscopist A: Sensitivity 64.29 % (35.14–87.24); Specificity 100 % (94.56– 100.00); Accuracy 93.75 % (86.01– 97.94); Positive predictive value 100.00 %; Negative predictive value 92.96 % (86.73–96.38)	Endoscopist A: Sensitivity 84.00 % (63.92–95.46); Specificity 98.18 % (90.28–99.95); Accuracy 93.75 % (86.01–97.94); Positive predictive value 95.45 % (74.93–99.33); Negative predictive value 93.10 % (84.60–97.07)	Endoscopist A: Sensitivity 96.00 % (79.65–99.90); Specificity 98.18 % (90.28–99.95); Accuracy 97.50 % (91.26–99.70); Positive predictive value 96.00 % (77.46–99.41); Negative predictive value 98.18 % (88.78–99.73)	Endoscopist A: Sensitivity 96.55 % (82.24– 99.91); Specificity 98.11 % (89.93– 99.95); Accuracy 97.56 % (91.47– 99.70); Positive predictive value 96.55 % (80.05–99.49); Negative predictive value 98.11 % (88.34–99.72)
Endoscopist B: Sensitivity 90.38 % (78.97–96.80); Specificity 78.57 % (59.05–91.70); Accuracy 86.25 % (76.73–92.93); Positive predictive value 88.68 % (79.31–94.12); Negative predictive value 81.48 % (65.16–91.19)	Endoscopist B: Sensitivity 35.71 % (12.76–64.86); Specificity 98.48 % (91.84–99.96); Accuracy 87.50 % (78.21– 93.84); Positive predictive value 83.33 % (38.73–97.53); Negative predictive value 87.84 % (83.00–91.44)	Endoscopist B: Sensitivity 64.00 % (42.52–81.03); Specificity 92.73 % (82.41–97.98); Accuracy 83.75 % (73.82–91.05); Positive predictive value 80.00 % (59.82–91.49); Negative predictive value 85.00 % (76.97–90.57)	Endoscopist B: Sensitivity 80.00 % (59.30–93.17); Specificity 90.38 % (78.97–96.80); Accuracy 87.01 % (77.41–93.59); Positive predictive value 80.00 % (62.95–90.40); Negative predictive value 90.38 % (81.03–95.39)	Endoscopist B: Sensitivity 78.57 % (59.05– 91.70); Specificity 88.68 % (76.97– 95.73); Accuracy 85.19 % (75.55– 92.10); Positive predictive value 78.57 % (62.75–88.87); Negative predictive value 88.68 % (79.29–94.13)
Endoscopist C: Sensitivity 61.54 % (47.02–74.70); Specificity 96.43 % (81.65–99.91); Accuracy 73.75 % (62.71–82.96); Positive predictive value 96.97 % (82.19–99.55); Negative predictive value 57.45 % (48.72–65.73)	Endoscopist C: Sensitivity 57.14 % (28.86–82.34); Specificity 92.42 % (83.20–97.49); Accuracy 86.25 % (76.73– 92.93); Positive predictive value 61.54 % (38.06–80.64); Negative predictive value 91.04 % (84.69–94.92)	Endoscopist C: Sensitivity 64.00 % (42.52–82.03); Specificity 80.00 % (67.03–89.57); Accuracy 75.00 % (64.06–84.01); Positive predictive value 59.26 % (44.27–72.70); Negative predictive value 83.02 % (74.04–89.34)	Endoscopist C: Sensitivity 84.00 % (63.92–95.46); Specificity 72.22 % (58.36–83.54); Accuracy 75.95 % (65.02–84.86); Positive predictive value 58.33 % (46.84–68.98); Negative predictive value 90.70 % (79.64–96.05)	Endoscopist C: Sensitivity 96.43 % (81.65– 99.91); Specificity 61.54 % (47.02– 74.70); Accuracy 73.75 % (62.71– 82.96); Positive predictive value 57.45 % (48.72–65.73); Negative predictive value 96.97 % (82.19–99.55)
Endoscopist D: Sensitivity 75.00 % (61.05–85.97); Specificity 75.00 % (55.13–89.31); Accuracy 75.00 % (64.06–84.01); Positive predictive value 84.78 % (74.22–91.51); Negative predictive value 61.76 % (49.06–73.04)	Endoscopist D: Sensitivity 57.14 % (28.86–82.34); Specificity 80.30 % (68.68–89.07); Accuracy 76.25 % (65.42– 85.05); Positive predictive value 38.10 % (24.03–54.49); Negative predictive value 89.83 % (82.66–94.24)	Endoscopist D: Sensitivity 40.00 % (21.13–61.33); Specificity 100.00 % (93.51–100.00); Accuracy 81.25 % (70.97–89.11); Positive predictive value 100.00 %; Negative predictive value 78.57 % (72.70–83.47)	Endoscopist D: Sensitivity 68.00 % (46.50–85.05); Specificity 78.18 % (64.99–88.19); Accuracy 75.00 % (64.06–84.01); Positive predictive value 58.62 % (44.53–71.43); Negative predictive value 84.31 % (74.90–90.64)	Endoscopist D: Sensitivity 75.00 % (55.13– 89.31); Specificity 75.00 % (61.05– 85.97); Accuracy 75.00 % (64.06– 84.01); Positive predictive value 61.76 % (49.06–73.04); Negative predictive value 84.78 % (74.22–91.51)

OP178 AN ARTIFICIAL INTELLIGENCE SYSTEM CAN EFFECTIVELY PREDICT DIFFICULTIES IN EXTRACTING CBD STONES DURING ENDOSCOPIC RETROGRADE CHOLANGIOPANCREATOGRAPHY A PROSPECTIVE TRIAL

Authors Huang L.¹, Yu H.¹

Institute 1 Renmin Hospital of Wuhan university, Department of Gastroenterology, Wuhan, China

DOI 10.1055/s-0042-1744741

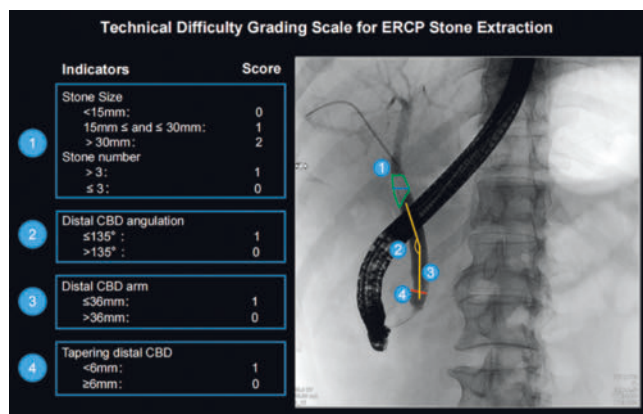
Aims We developed an effective and automatic computer-assisted (CAD) system for evaluating the difficulty of common bile duct (CBD) stones removal in Endoscopic Retrograde Cholangiopancreatography (ERCP) based on deep learning. A multi-center, prospective, observational study was designed to assess the safety and efficacy of the CAD.

Methods The CAD system could automatically measure five preset indications in an intelligent stone extraction difficulty scoring scale: stone diameter, number, distal bile duct arm, distal bile duct angulation and diameter. All patients met the include and exclude criteria have participated in the study. The CAD system would evaluate and classify the difficulty of stone removal in to the difficult and easy group according to the cholangiogram. We compared the difference of endpoints between difficult and easy group, such as extraction attempts, extraction time, operation time, complete clearance rate and so on.

Results From three hospitals, a total of 173 patients with CBD stones participated in the study. The difficult group was attached with more extraction attempts (7.20min vs.4.20min; $P < 0.001$), longer extraction time (16.59min VS 7.65min; $P < 0.001$) and total operation time (29.26 min vs.22.71 min; $P = 0.003$), and lower single-session successful rate (73.91 % vs. 94.49 %; $P < 0.001$).

► **Table 1**

CAD score results	Difficult group	Easy group	P value
Complete clearance rate, % (n)	34(73.91)	120(94.49)	<0.001
Total complete clearance rate, % (n)	89.13(41/46)	97.64(124/127)	0.019
The number of stone extraction, n (SD)	7.20(4.34)	4.20(4.06)	<0.001
Machine lithotripsy, n (%)	14(60.87)	9(39.13)	<0.001



► **Fig. 1**

Conclusions The CAD scoring system could effectively score the endoscopic stone extraction technical difficulty during ERCP and be validated in the prospective study. It can match with the universal clinical indicators in clinical environment, and might be helpful to minimize the risk of ERCP during stone removal.

OP179 THE ACCURACY OF HUMAN DETECTION OF SUBMUCOSAL INVASIVE CANCER – ANALYSIS OF 739 INDIVIDUAL ASSESSMENTS OF LARGE NON-PEDUNCULATED COLORECTAL POLYPS USING A NOVEL CLINICAL DECISION TOOL

Authors Debels L.¹, Schoonjans C.², Anderson J.³, Valori R.⁴, Desomer L.⁵, Tate D.¹

Institutes 1 Universitair Ziekenhuis Gent, Gent, Belgium; 2 AZ St Jan, Brugge, Belgium; 3 Cheltenham General Hospital, Cheltenham, United Kingdom; 4 Gloucestershire Royal Hospital, Gloucestershire, United Kingdom; 5 AZ Delta, Roeselare, Belgium

DOI 10.1055/s-0042-1744742

Aims Current tools to detect submucosal invasive cancer (SMI) within large (> = 20mm) non-pedunculated colorectal polyps (LNPCs) are complex. This potentially leads to incorrect decision-making (e.g. piecemeal resection of SMI necessitating surgery or surgery for benign disease).

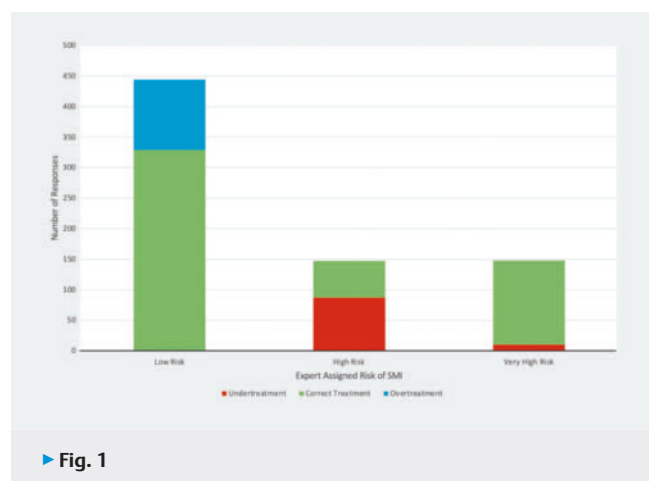
An online decision-support tool was developed using the concept of a demarcated area – where a regular pit/vascular pattern becomes disordered – to search for OVERT (visible on the surface) SMI and 4 morphological characteristics of LNCPs (Paris classification, size, colonic location, and granularity) to quantify COVERT (hidden) SMI risk.

Methods A survey was sent to endoscopists containing an educational video with 20 subsequent randomly-presented standardized videos of LNCPs. Participants' first impression was asked before using the tool to classify polyps as low/high (COVERT), or very high (OVERT) risk of SMI. Responses were compared to expert responses and histopathology.

Results 739 individual responses were analysed. First impression strongly predicted absence of SMI – negative predictive value (NPV) 97.5 % (95 % confidence interval (95 %CI):95.0-99.0 %) and accuracy 72.3 % (95 %CI:68.9-75.6 %). Absence of a demarcated area was predicted with similar NPV – 97.6 % (95 %CI:96.0-99.0 %). Lower accuracy, 78.6 % (95 %CI:76.5-81.5 %), resulted from participant overcalling of a demarcated area. The accuracy of participant size, Paris classification, granularity, and location (provided) determination were 66.3 % (95 %CI:61.8-70.5 %), 66.3 % (95 %CI:61.8-70.5 %), 64.8 % (95 %CI:60.3-69.1 %) and 94.8 % (95 %CI:92.4-96.6 %) respectively. Overall accuracy was 66.2 % (95 %CI:62.6-69.6 %), clinically resulting in correct treatment in 71.3 %, undertreatment in 13.1 % and overtreatment in 15.6 %.

► **Table 1** Resultant treatment if determined by participant score from the clinical decision support tool as versus expert score. % in header of row, % in table body of column.

Expert score versus participants result in terms of treatment outcome (right) // Result of participant scoring (below)	Undertreatment n = 97 (13.1 %)	Correct treatment n = 527 (71.3 %)	Overtreatment n = 115 (15.6 %)
Low risk, n (%)	0 (0)	329 (62.4)	115 (100)
High risk, n (%)	87 (89.7)	60 (11.4)	0 (0)
Very high risk, n (%)	10 (10.3)	138 (26.2)	0 (0)



Conclusions Endoscopists of varying experience can exclude SMI within LNP-CPs from a standardized video using a decision-support tool after training. Further validation and application of this tool may prevent negative patient outcomes.

OP180 FULFILMENT ANALYSIS OF QUALITY STANDARDS, ESTABLISHED BY THE EUROPEAN SOCIETY OF GASTROINTESTINAL ENDOSCOPY, IN SMALL-BOWEL CAPSULE ENDOSCOPY IN SPANISH CENTERS

Authors Gómez Villagrà M¹, Prieto C.², Acitores D.³, Alonso M⁴, Alonso N⁵, Caballero N⁶, Sánchez Ceballos F⁷, Compañy L⁸, Egea J⁹, Esteban P¹⁰, Farras S¹¹, Fernandez-Urien I³, Galvez C¹², García A¹³, García Lledo J¹⁴, Gonzalez B¹⁵, Jimenez A¹⁶, Lujan M¹⁷, Mateos B¹⁸, Romero C¹⁹, San Juan M²⁰, Valdivieso E²¹, Carretero C¹

Institutes 1 Clínica Universidad de Navarra, Pamplona, Spain; 2 Clínica Universidad de Navarra, Madrid, Spain; 3 Hospital Universitario de Navarra, Pamplona, Spain; 4 Hospital Quirón Madrid, Madrid, Spain; 5 Hospital Universitario y Politécnico La Fe, Valencia, Spain; 6 Hospital German Trias I Pujol, Girona, Spain; 7 Hospital Clínico San Carlos, Madrid, Spain; 8 Hospital Universitario de Alicante, Alicante, Spain; 9 Hospital Virgen de la Arrixaca, El Palmar, Spain; 10 Hospital General Universitario Morales Meseguer, Murcia, Spain; 11 Hospital Universitario Fundación Jiménez Díaz, Madrid, Spain; 12 Hospital Clínico Universitario de Valencia, Valencia, Spain; 13 Hospital Virgen de la Salud, Toledo, Spain; 14 Hospital Universitario Gregorio Marañón, Madrid, Spain; 15 Hospital Clinic de Barcelona, Barcelona, Spain; 16 Hospital Universitario Virgen de la Macarena, Sevilla, Spain; 17 Consorci Hospital General Universitari de Valencia, Valencia, Spain; 18 Hospital Universitario Ramón y Cajal, Madrid, Spain; 19 Hospital de Santa Creu y Sant Pau, Barcelona, Spain; 20 Hospital Universitario Nuestra Señora de la Candelaria, Tenerife, Spain; 21 Complejo Hospitalario Universitario A Coruña, A Coruña, Spain
DOI 10.1055/s-0042-1744743

Aims In 2019 the working group of the European Society of Gastrointestinal Endoscopy(ESGE) was reunited with the objective of developing technical and quality standards for small- bowel endoscopy, in order to improve the daily practice in the endoscopy services.

The aim is to evaluate the accomplishment of the quality standards in small-bowel endoscopy (SBCE) established by the ESGE, in several Spanish centers.

Methods An online questionnaire was sent to different centers in our country with experienced gastroenterologists in SBCE. It consisted of ten items, in relation with the ESGE quality performance measures. In order to take part of the study, at least 100 questionnaires should be uploaded

Results:

► Table 1

KEY PERFOR- MANCE MESAURES (Minimum/Target standard)	REAL VALUE	KEY PERFORMANCE MESAURES (Minimum/ Target standard)	REAL VALUE
Indication for SBCE (≥ 95 %)	91.2 %	Appropriate referral to DAE (≥ 75 / ≥ 90 %)	47.2 %
Cecal visualization (≥ 80 / 95 %)	88 %	Capsule retention (< 2 %)	2.6 %
Lesion detection rate (≥ 50 %)	47.9 %	MINOR PERFORMANCE MESAURE (Minimum/ Target standard)	REAL VALUE
Timing in GI bleeding (≥ 90 %)	75.3 %	Patient selection (≥ 95 %)	48.6 %

Twenty centers collaborated, answering a total of 2049 questionnaires.

Overall, the minimum standard was only reached in the domain named "Completeness of the procedure", 88 % of the SBCEs analyzed reached the cecum (Table 1). A second analysis showed an heterogeneous rate of centers achieving the standards of SBCE performance measures. In fact, the minimum standard was only reached by at least 50 % of the participant centers in two key performance measures and two minor performance measures.

Conclusions This is the first Spanish multicentric study that analyses the achievement of performance measures in SBCE. Our results do not reach the standards in the majority of the performance measures although an elevated number of procedures were included.

We recommend to each center to have an internal evaluation in order to identify the quality areas that can be improved, before a change in the standards is suggested

OP181 USEFULNESS AND SAFETY OF A NEW DIGITAL SINGLE-OPERATOR CHOLANGIOSCOPY: A SINGLE-CENTER EXPERIENCE

Authors Robles-Medranda C.¹, Alcivar-Vasquez J.¹, Rajjman I.^{2,3}, Kahaleh M.⁴, Puga-Tejada M.¹, Baquerizo-Burgos J.¹, Del Valle R.¹, Alvarado H.¹, Cifuentes-Gordillo C.¹, Merfea R.C.¹, Barreto Perez J.¹, Rodriguez J.¹, Calle-Loffredo D.¹, Lukashok H.P.¹

Institutes 1 Instituto Ecuatoriano de Enfermedades Digestivas, Guayaquil, Ecuador; 2 Houston Methodist Hospital, Houston, United States; 3 Baylor Saint Luke's Medical Center, Houston, United States; 4 Robert Wood Johnson Medical School Rutgers University, New Brunswick, United States
DOI 10.1055/s-0042-1744744

Aims A new DSOC system called Eye-Max™ (Micro-Tech, Nanjing, China) has been developed with a 9Fr and 11Fr scopes and full HD + image (150000 pixels). We aimed to report diagnostic accuracy, biliary stone clearance, and procedure-related adverse events with this new device.

Methods Prospective data was collected in consecutive patients aged ≥ 18 years referred for DSOC between July-November 2021. Suspected malignancy/ indeterminate stricture diagnosis were allocated into the diagnostic group; failed lithotripsy or >20mm biliary stones were allocated into the therapeutic group. Patients with <6-month follow-up, uncontrolled coagulopathy, pregnant/lactating, with contrast allergy or with no scope passage, were excluded. The institutional review board approved the study protocol, and the study was conducted according to the Declaration of Helsinki. All patients provided written informed consent. Data was analyzed in Rv.4.0.

Results 31 cases were attended. In the diagnostic cohort (n = 21/31; 68 %), neoplastic signs at visual impression were identified in 10/21 (47.6 %) cases using in 8/10 a 9Fr scope. Biopsy was performed in 14/21 (66.7 %) cases and confirmed neoplasia in 10/21 (47.6 %). DSOC achieved an accuracy for neoplas-

tic diagnosis with a 90 % sensitivity, 75 % specificity (Table 1). In the therapeutic cohort (12/31; 39 %): 11/12 cases required lithotripsy, being 1/12 a pancreatoscopy, and 1/12 underwent DSOC due to proximal biliary stent migration. Complete stone clearance was achieved in 10/11 (91 %) patients (Fig. 1). No periprocedural or late adverse events were documented.

► **Table 1** Diagnostic cohort (21/31; 68 %).

	Total (N = 21)
Age (years), median (IQR)	59.0 (46.0 – 66.0)
Indication, n (%)	
Biliary tract lesion	20 (95.2)
Pancreatic duct stricture	1 (4.8)
Adequate biopsy, n (%)	14 (100.0)
Histopathological diagnosis (n = 14), n (%)	
Inflammatory	3 (21.4)
Cholangiocarcinoma	9 (64.3)
Secondary to malignant infiltration	1 (7.1)
IgG4	1 (7.1)

	Total (N=12)
Age (years), median (IQR)	68.0 (52.8 - 72.0)
Young adults (18-39)	2 (16.7)
Adults (40-64)	3 (25.0)
Elderly (≥65)	7 (58.3)
Gender (female), n (%)	7 (58.3)
Previous ERCP, n (%)	5 (41.7)
Indication, n (%)	
Lithotripsy	11 (91.7)
Proximal migration of biliary stent	1 (8.3)
Stone location (n=11), n (%)	
Common bile duct	5 (45.5)
Hepatic hilum	1 (9.0)
Common hepatic duct	3 (27.3)
Right intrahepatic duct	1 (9.0)
Both intrahepatic	1 (9.0)
No. of stones, median (IQR)	1 (1 – 4)
Stone size (mm), median (IQR)	20.0 (18.0 - 21.0)
Stone removal (n=11), n (%)	
Partial	1 (9.0)
Total	10 (91.0)
Additional procedures, n (%)	4 (33.3)
Ballon dilation	4/4
Clinical success, n (%)	12 (100.0)
Early adverse events, n (%)	-
Late adverse events, n (%)	-

► **Fig. 1**

Conclusions Eye-Max™ DSOC has excellent diagnostic efficacy for distinguishing neoplastic biliary lesions, as well as therapeutic profitability.

OP182 ARTIFICIAL INTELLIGENCE IN (GASTROENTEROLOGY) HEALTHCARE – PATIENTS' AND PHYSICIANS' PERSPECTIVES

Authors van der Zander Q.E.^{1,2}, van der Ende-van Loon M.C.³, Janssen J.M.², Winkens B.^{4,5}, van der Sommen F.⁶, Masclee A.A.¹, Schoon E.J.^{1,3}

Institutes 1 Maastricht University Medical Center, Department of Gastroenterology and Hepatology, Maastricht, Netherlands; 2 Maastricht University, GROW, School for Oncology and Developmental Biology, Maastricht, Netherlands; 3 Catharina Hospital Eindhoven, Department of Gastroenterology and Hepatology, Eindhoven, Netherlands; 4 Maastricht University, Department of Methodology and Statistics, Maastricht, Netherlands; 5 Maastricht University, CAPHRI, Care and Public Health Research Institute, Maastricht, Netherlands; 6 Eindhoven University of Technology, Department of Electrical Engineering, Eindhoven, Netherlands
DOI 10.1055/s-0042-1744745

Aims Artificial intelligence (AI) is entering into daily life and has great potential in healthcare. Aim was to investigate the knowledge, experience, and opinion on AI among patients with gastrointestinal (GI) disorders and GI-physicians.

Methods This non-interventional, prospective questionnaire study, collected data from GI-patients and GI-physicians (certified gastroenterologists and GI-fellows). Primary outcomes were the knowledge, experience, and opinion on AI. Secondary outcomes were the willingness to apply AI and (dis)advantages of AI use in healthcare.

Results In total, 377 GI-patients, 35 gastroenterologists, and 45 GI-fellows participated. Of GI-patients, 62.5 % reported to be familiar with AI and 25 % of GI-physicians had work-related AI experience. On a 5-point Likert-scale, GI-patients preferred their physicians to use AI (mean 3.9 [SD1.0]). GI-physicians were willing to use AI for their patients (gastroenterologists 4.8 [SD0.4] vs GI-fellows 4.3 [SD0.7], $P < 0.001$). GI-physicians were more convinced in an increase in quality of care (81.3 %) than GI-patients (64.9 %, $P = 0.017$). On average, GI-fellows expected AI implementation within 6.0 years (SD3.0), whereas gastroenterologists expected this within 4.2 years (SD2.7, $P < 0.001$) and GI-patients within 6.1 years (SD4.6, $P = 0.047$ compared to 5.2 years for GI-physicians). GI-patients and GI-physicians agreed on the main advantage of AI in healthcare: improving quality of care (66.1 % GI-patients, 90.0 % GI-physicians). The main disadvantage for GI-patients was the potential loss of personal contact with physicians (66.4 %), where this was insufficiently developed IT infrastructures for GI-physicians (56.3 %).

Conclusions GI-patients and GI-physicians were positive towards AI and implementation in healthcare. A proper understanding of (dis)advantages will help AI developments and will increase trust in AI.

Gastric premalignant conditions:

improving detection

17:00–18:00

Friday, 29 April 2022

Club A

OP183 INCIDENCE OF GASTRIC NEOPLASTIC LESIONS AT LONG-TERM FOLLOW-UP IN PATIENTS WITH AUTOIMMUNE ATROPHIC GASTRITIS

Authors Dilaghi E.¹, Pivetta G.¹, Pilozi E.², Annibale B.¹, Lahner E.¹, Esposito G.¹

Institutes 1 Sapienza University of Rome, Department of Medical-Surgical Sciences and Translational Medicine, Sant'Andrea Hospital, Rome, Italy; 2 Sapienza University of Rome, Department of Clinical and Molecular Medicine, Sant'Andrea Hospital, Rome, Italy
DOI 10.1055/s-0042-1744746

Aims Autoimmune atrophic gastritis (AAG) is a chronic inflammatory condition of the corpus sparing the antrum supposed to be at risk for gastric type I neuroendocrine tumors (T1gNET), but at relatively low risk for adenocarcinoma (ADK) compared to higher OLGA/OLGIM-stages. Prospective studies quantifying the neoplastic risk in AAG are lacking. The current study aimed to prospectively assess the gastric ADK, dysplasia and T1gNET incidence in AAG patients at long-term follow-up.

Methods 254 AAG prospective patients (1996-2020)[75.6% female, median age 57.5 (range 23-84)years] with a median follow up of 4.5(range 3-17)years were included. Inclusion criteria were histological AAG diagnosis and at least one follow-up-gastroscopy with biopsies at ≥ 3 years after diagnosis. Endoscopic-histological surveillance at 4-years and since 2012 (MAPS- guidelines) at 3-years-intervals was performed.

Results Twenty gastric neoplastic lesions were found(crude incidence 8%). ADK was detected in five patients with a 4.5 years median follow-up(crude incidence 2%). Twelve T1gNETs and three low-grade dysplasia were diagnosed at a 4.5 years-median-follow-up(crude incidence 4.7% and 1.2%, respectively). The annual incidence-rates person-year were 0.4%,0.3%,1% for ADK, dysplasia, and T1gNETs,respectively. All patients with gastric neoplastic lesions had OLGA2, except one case with T1gNET who had OLGA1. OLGIM2 was present in all ADKs and dysplasias; of the 12 patients with T1gNETs, seven showed OLGIM1 and three OLGIM2.

Conclusions In AAG at long-term-follow-up, a 1.7%-annual-incidence-rate person-year for gastric neoplastic lesions was found confirming the neoplastic risk. Endoscopic-histological-surveillance should be offered also to low OLGA/OLGIM-stages, whose optimal interval needs to be determined.

OP184 AUTOMATIC IDENTIFICATION OF GASTROSCOPY SURVEILLANCE INTERVAL AND FOLLOW-UP REMINDER FOR HIGH-RISK PATIENTS UNDERGOING SCREENING UPPER ENDOSCOPY

Authors Wu L.¹, Li J.¹, Shi C.¹, Dong Z.¹, Hu X.², Yu H.¹

Institutes 1 Wuhan University, Department of Gastroenterology, Wuhan, China; 2 Wuhan ENDOANGEL Medical Technology Company, Wuhan, China
DOI 10.1055/s-0042-1744747

Aims Gastric adenocarcinoma develops through a cascade of precancerous lesions. Determining surveillance intervals and timely reminding patients with precancerous lesions is critical but time-consuming. We aimed to create a system that automatically categorizes patients into different surveillance intervals and sends patients timely follow-up messages.

Methods We first used a rule-based natural language processing method to extract abnormal findings from gastroscopy and pathology reports, and then trained a deep-learning model to identify whether a demarcation line (DL) exists in low-grade intraepithelial neoplasia (LGIN) lesions. Through these methods, the system could automatically classify patients into 1~7 risk categories and give corresponding surveillance intervals according to the Asian Guidelines. Automatic follow-up messages would be sent to patients after the gastroenterologist's recheck and confirmation. The system's performance was assessed in 1013 patients and using gold standards determined by a gastroenterologist.

Results The system achieved an overall accuracy of 99.21% (1005/1013) in assigning the surveillance interval. Four LGIN patients with DL were underestimated as LGIN without DL, and three LGIN patients without DL were overestimated as LGIN with DL because of misjudgement from the deep-learning model. One patient with moderate atrophy was overvalued as severe atrophy because the system mixed biopsy results from large and small curvature of gastric body.

Conclusions The system achieved high accuracy in identifying gastroscopy surveillance intervals for patients undergoing screening upper endoscopy. Incorporating this system can facilitate proactive and timely follow-up after screening gastroscopy in clinical work.

OP186 AN AUTOMATIC DIAGNOSIS SYSTEM FOR CHRONIC ATROPHIC GASTRITIS UNDER WHITE LIGHT ENDOSCOPY BASED ON DEEP LEARNING

Authors Xiao T.¹, Renduo S.¹, Lianlian W.¹, Honggang Y.¹

Institute 1 Renmin Hospital of Wuhan University, Wuhan, China
DOI 10.1055/s-0042-1744749

Aims Regular endoscopic monitoring is generally recommended for patients with atrophic gastritis (AG) because of their increased risk of gastric cancer. However, the diagnostic accuracy of AG under white light endoscopy often varies with the experience of endoscopists. We aim to develop a model based on deep learning DL that can automatically diagnose atrophic gastritis in different anatomical sites of the stomach.

Methods White light endoscopy images were collected and classified into AG and non-atrophic gastritis (non-AG). The images were randomly divided into a training dataset and test dataset by 8:1. Region of AG was manually drawn on the obtained endoscopic images by 2 expert physicians with over 5 years of endoscopy experience. DL-model is constructed by UNet++ and Resnet-50, which forms an automatic diagnosis system for AG: first, identify anatomic sites, second, segment lesion regions, and third, identify AG/non-AG.

Results 6122 images of white light endoscopy from 456 patients were collected, including 4022 images of AG and 2100 images of non-AG. In the independent test set, the average intersection-over-union (IOU) of the region segmentation of AG by model and the region drawn by expert physicians was 0.648, and incisura segmentation was the best, with an IOU of 0.777. The sensitivity, accuracy, and specificity of the AG/ Non-Ag binary classification model were 83.77%, 83.70%, and 83.75%, respectively.

Conclusions We trained a model based on deep learning, which has high diagnostic accuracy for AG under white light endoscopy

OP187 DEVELOPMENT AND VALIDATION OF DEEP LEARNING-BASED AUTOMATIC SEMI-STRUCTURED UPPER GASTROINTESTINAL ENDOSCOPIC REPORTING SYSTEM

Authors Zhang L.¹, Lu Z.¹, Yao L.¹, Yu H.¹

Institute 1 Renmin Hospital of Wuhan University, Department of Gastroenterology, Wuhan, China
DOI 10.1055/s-0042-1744750

Aims Gastrointestinal endoscopy is one of the most common technique for gastrointestinal disorders. The endoscopy report is essential for facilitating diagnosis, therapy strategic decision, clinical recommendations, further consultation and following-up. To ensure adequate quality of endoscopy report, minimal standard terminology and semi-structured formation were recommended by guidelines. However, manual endoscopic reporting is time-consuming, with significant heterogeneity among endoscopists and clinical environment. We aimed to develop and validate a deep learning-based automatic semi-structured upper gastrointestinal endoscopic reporting system.

Methods We retrospectively collected 99174 esophagogastroduodenoscopy (EGD) images to conduct this system, 75742 images for anatomical landmarks identifying model, 21460 for gastric lesions classifying model, including including dysplasia, submucosal tumor, gastric ulcer, erosion, benign polyp, xanthelasma, and 15256 images for esophageal lesions classifying model, including dysplasia, heterotopic gastric mucosa, submucosal tumor, oesophagitis, gastroesophageal reflux, barrett's esophagus. The system was able to capture eligible images during endoscopy, selected by clarity, mucosal exposure, and confidence coefficient of lesion detection. Further, 500 videoclips contains lesions above were collected to validate the performance of the system.

Results In image validation, the system achieved an accuracy of 90.45% and 89.1%, respectively, to classify gastric and esophagus lesion type in image validation. In video validation, the system automatically detect lesion with accu-

racy of 95 %, reported with standard semi-structured form for exact lesion type with accuracy of 75.6 %, and missed 2 % of lesions in automatic report.

Conclusions This system can automatically generate semi-structure description and image reports and plays potential role to facilitate and standardize endoscopic reporting procedure in clinical practice.

OP188 DETECTION OF GASTRIC PREMALIGNANT CONDITIONS AMONG NON-EXPERT ENDOSCOPISTS ON OPTICAL DIAGNOSIS USING A NEW VIRTUAL CHROMOENDOSCOPY DEVELOPED BY SONOSCAPE

Authors Delgado-Guillena P.G.^{1,2}, Vinagre-Rodríguez G.¹, Sanchez-Jara V.¹, Henao-Carrasco A.¹, Gutierrez-Cierco J.L.³, Pabón-Carrasco S.⁴, Borralló-Cruz J.A.¹, García-Martos E.¹, Córdova H.^{5,6,7}, Fernández- Esparrach G.^{5,6,7}

Institutes 1 Hospital de Mérida, Gastroenterology, Mérida, Spain; 2 University of Barcelona, Medicine, Barcelona, Spain; 3 Hospital Clínic de Barcelona, Pathology, Mérida, Spain; 4 Hospital de Mérida, Pathology, Mérida, Spain; 5 Hospital Clínic de Barcelona, Gastroenterology, Barcelona, Spain; 6 Centro de Investigación Biomédica en Red de Enfermedades Hepáticas y Digestivas (CIBERehd), Institut d'Investigacions Biomèdiques August Pi i Sunyer (IDIBAPS), Gastroenterology, Barcelona, Spain; 7 University of Barcelona, Medicine, Barcelonasp, Spain

DOI 10.1055/s-0042-1744751

Aims Endoscopic recognition of gastric premalignant conditions (GPC) is the first step before taking biopsies. High-definition (HD) endoscopes and virtual chromoendoscopy (VC) improve the detection of GPC. We aimed to evaluate the diagnostic accuracy for GPC among non-expert endoscopists.

Methods Routine gastroscopies were performed prospectively in a community setting for three months by using HD endoscopes and the VC developed by Sonoscape: SFI and VIST. Four non-expert endoscopists were enrolled. Endoscopic diagnosis of GPC were findings described in the Kimura-Takemoto and Simplified-NBI classification. Biopsies were obtained according to Sydney protocol. Patients were categorized endoscopically and histologically into two categories: presence or absence of GPC. Histologically, OLGA III/IV, OLGIM III/IV, and dysplasia were considered advanced GPC.

Results We included 147 patients (mean age 57 ± 18, 61 % women). Histologically, 55(37 %) patients had GPC, 15 (10 %) were AG, 32 (22 %) IM, and 8(5 %) dysplasia. Twenty-two(15 %) patients had advanced GPC, 2(1.4 %) were OLGA III/IV, 12(8.2 %) OLGIM III/IV, and 8 (5.4 %) dysplasia. Seven(13 %) patients out of 54 without GPC at endoscopy had the presence of this condition in histology, but only one(2 %) case was advanced GPC in histology (it was OLGIM IV). The global diagnostic yield for presence or absence of GPC was: sensibility 87 %, specificity 51 %, positive predictive value (PPV) 52 %, negative predictive value (NPV) 87 %, and diagnostic accuracy 65 %.

Conclusions Non-experts endoscopists had low accuracy on GPC diagnosis. However, the high sensibility and NPV using this new technology represent an opportunity to reduce gastric biopsies with a low risk to miss patients at higher risk for GC.

How to manage adverse events in colonoscopy 17:00–18:00
Friday, 29 April 2022 **Club E**

OP189V IATROGENIC COLONIC PERFORATION CLOSURE WITH AN OVER-THE-SCOPE CLIP APPLIED WITH GASTROSCOPE FOUR HOURS UPON INDEX COLONOSCOPY: A CASE REPORT

Authors Nicolaou P.¹, Velegraki M.¹, Arna D.¹, Psistakis A.¹, Bachlitzanakis E.², Flamourakis M.², Paspatis G.¹

Institutes 1 Venizeleio General Hospital, Department of Gastroenterology, Heraklion, Greece; 2 Venizeleio General Hospital, Department of Surgery, Heraklion, Greece

DOI 10.1055/s-0042-1744752

A 71-year-old female was referred to our unit due to a perforation at the sigmoid colon, endoscopically diagnosed 4 hours earlier during a screening colonoscopy, which was initially treated with conventional clipping. The closure was not considered secure by the endoscopist and the patient was referred to our unit. We decided to proceed with a new colonoscopy. An approximately 1.5 cm defect was identified and its closure was attempted using an OTSC mounted on a colonoscope, which was impossible due to pelvic adhesions. The attempt was continued and an OTSC was mounted on a gastroscope. The clip was successfully applied.

OP190V ENDOSCOPIC MANAGEMENT OF IATROGENIC PERFORATIONS DURING THERAPEUTIC ENDOSCOPY – KEEP CALM AND HAVE A PLAN B

Authors Ferreira-Silva J.¹, Rodrigues-Pinto E.¹, Macedo G.¹

Institute 1 Centro Hospitalar Universitário de São João, Gastroenterology, Porto, Portugal

DOI 10.1055/s-0042-1744753

We describe 2 patients with endoscopic perforations after stricture dilation and stent placement, caused by the advancement of the tip of the devices. The first case refers to a patient with a 6mm ileal pouch perforation caused by balloon tip advancement during dilation of an ileoanal anastomosis stricture, managed with endoscopic clips. The second case refers to a woman with an 8mm jejunal limb perforation caused by the advancement of the stent delivery system, used to treat a post-gastrectomy leak, that was managed with an OTSC and a second stent covering the leak and the perforation. Both patients remain well.

OP191V PERFORATION DURING DIAGNOSTIC COLONOSCOPY: OTSC AND DECOMPRESSIVE AIR PARACENTESIS FOR SUCCESSFUL RESOLUTION

Authors Martins Pinto da Costa A.¹, de Frutos Rosa D.¹, Gonzalez-Haba Ruiz M.¹, Santiago Garcia J.¹, Agudo Castillo B.¹, Santos Pérez E.¹, Blanco Rey S.¹, El Hajra Martínez I.¹, Garrido Botella A.¹, Herreros de Tejada Echanojauregui A.¹

Institute 1 Hospital Universitario Puerta de Hierro, Majadahonda, Aparato Digestivo, Madrid, Spain

DOI 10.1055/s-0042-1744754

Iatrogenic perforation during diagnostic colonoscopy is a rare complication (0.03-0.8 %). A 77-year-old man with myelodysplastic syndrome is scoped for melena. During colonoscope insertion, sigmoid transmural perforation occurs. Given the poor manoeuvrability and the risk of complete collapse of the intestinal lumen, a 0.035" guidewire is progressed proximally. Secondly, using an OTSC clip and the twin grasper (Ovesco), transmural defect is closed. Then, decompressive air paracentesis is performed reducing pneumoperitoneum. Although marginal, the risk of perforation during diagnostic colonoscopy exists. OTSC clips are useful in these scenarios. Decompressive air paracentesis helps controlling secondary pneumoperitoneum.

OP192 TECHNICAL OUTCOMES AND RISK OF STRICTURE AFTER ENDOSCOPIC SUBMUCOSAL DISSECTION FOR LARGE COLORECTAL LESIONS

Authors Maselli R.¹, Spadaccini M.¹, Galtieri P.A.¹, Albouys J.², Legros R.², Lambin T.³, Capogreco A.¹, Pellegatta G.¹, Ferrara E.C.¹, Fugazza A.¹, Carrara S.¹, Anderloni A.¹, Pioche M.⁴, Jaques J.², Repici A.¹

Institutes 1 Humanitas Clinical and Research Center, Digestive Endoscopy Unit, Division of Gastroenterology, Rozzano, Italy; 2 Gastroentérologie et Endoscopie Digestive, CHU Dupuytren, Limoges, France; 3 Claude Huriez

hospital, University of Lille, Lille, France; 4 Hôpital Edouard Herriot, Hospices Civils de Lyon, Lyon, France
DOI 10.1055/s-0042-1744755

Aims Endoscopic submucosal dissection(ESD)is a well-established approach for the minimally invasive treatment of colorectal(CR)neoplasia with favorable outcomes in term of efficacy and safety.The aim is to assess efficacy and safety of a cohort of patients treated with ESD for large rectal lesions,with a particular focus on the risk of stricture.

Methods Between February/2011 and March/2020, a retrospective analysis of a prospectively maintained database was conducted on patients treated by ESD for large rectal lesions that required $\geq 75\%$ circumferential resection at three European centers (Milan; Limoges; Lyon). The primary outcome considered for this study was the risk of stricture. Secondary outcomes were en-bloc, and R0 resection rates, procedural time, and other adverse events. The curative resection rate was assessed for submucosal invasive lesions.

Results Over the study period, 165 consecutive patients (mean age: 69.2 ± 12.5 yo; 51.5% males) underwent a rectal ESD for lesions requiring ≥ 75% circumferential resection (45 circumferential resection), and were included in the study analysis. The 97.0% of lesions were resected in an en-bloc fashion in a mean procedural time of 138.8 ± 90.1 min. Forty-three out of 165 lesions (26.1%) resulted in CR neoplasia with submucosal invasion. Twenty-four of them (55.8%) showed high-risk features of nodal involvement (non-curative resection) and were referred for surgery. A total of 19 (14.6%) peri-procedural AEs (8 deep mural injuries, 8 intra-procedural bleedings) was observed. Post-ESD rectal strictures occurred in 18 patients (10.9%), being associated to circumferential resections (12/45, 26.6%). The 18 patients underwent a mean number of 3.3 ± 1.8 endoscopic balloon dilations with symptoms resolution in all cases.

Conclusions Rectal-ESD is a safe and effective option for managing large rectal neoplasia in a Western setting. The risk of post-procedural stricture is associated to circumferential resections, and patients should be aware of the possible need of endoscopic dilations.

OP193 CHARLSON COMORBIDITY INDEX PREDICTS COLONIC DIVERTICULAR REBLEEDING

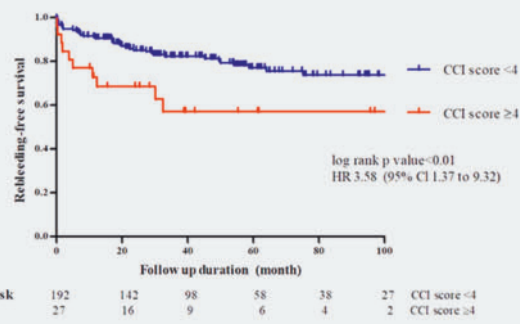
Authors You H.-S.¹, Kim D.H.¹, Park S.-Y.¹

Institute 1 Chonnam National University Hospital and Medical School,
Department of Gastroenterology and hepatology, Gwangju, Korea, Republic of
DOI 10.1055/s-0042-1744756

Aims Colonic diverticular bleeding (CDB) is a common cause of acute lower gastrointestinal bleeding. Patients with CDB are at increased risk for recurrence. Here, we aimed to evaluate the clinical course of patients with CDB and identify risk factors including Charlson comorbid index (CCI) for recurrent CDB (rCDB).

Methods We retrospectively included patients who were hospitalized at the Chonnam National University Hospital for management of CDB between January 2005 to March 2020, and data on the underlying disease, drug history, treatment method, post-discharge rCDB, and death were checked.

Results Among 221 investigated patients (mean age, 68.1 years; 56 females), 56 and 165 had definite and presumptive CDB, respectively, 122 (55.2%) had a right-sided CDB, and 51 (23.3%) experienced rCDB throughout a median period of 339 days (range, 3–4817 days). The most common comorbidities were hypertension (62.4%) and diabetes (33.5%). The median length of hospitalization was 5 days (range, 2–119 days). The CDB-related mortality rate was 0.9% at first admission. The cumulative incidence rates of rCDB after 1, 6, 12, 24 months were 4.6%, 9.1%, 12.3%, and 16.9%, respectively. In Cox regression analysis, rCDB more frequently occurred in patients with CCI ≥ 4 compared to in patients with CCI < 4 (adjusted hazard ratio, 2.76; 95% confidence interval, 1.30–5.88; $p < 0.01$).



► Fig. 1

Conclusions rCDB occurred frequently at any time in patients with previous CDB. CCI was effective for predicting rCDB.[YH1] Clinicians need to consider a possible rCDB for patients with high CCIs

OP194 ENDOSCOPIC MANAGEMENT OF COLORECTAL ANASTOMOTIC LEAKAGE COMPLICATED WITH PELVIC ABSCESS : ENDOSCOPIC VACUUM THERAPY A NEW STRATEGY ?

Authors Monino L.¹, Moreels T.¹, Leonard D.², Kartheuser A.²

Institutes 1 Université catholique de Louvain/Cliniques universitaires Saint-Luc, Department of Gastroenterology & Hepatology, Brussels, Belgium; 2 Université catholique de Louvain/Cliniques universitaires Saint-Luc, Department of Digestive Surgery, Brussels, Belgium

A 56-years old woman underwent laparoscopic anterior resection of the rectum with lymph node dissection and colorectal anastomosis for an adenocarcinoma. One month later, she presented an anastomotic leakage complicated with a presacral abscess and a rectovaginal fistula. The collection was drained endoscopically with double pigtail stents associated with placement of an EndoSponge. The endosponge was connected to an external vacuum collector. The EndoSponge was changed every 3 to 4 days. At day 26, the leakage with the collection were also completely closed. Control at 2 months showed a normal colorectal anastomosis without recurrence of pelvic collection or recto-vaginal fistula.

Biliary strictures and stenting: what's new

Friday, 29 April 2022

17:00–18:00
Club H

OP195 IS PREVIOUS SPHINCTEROTOMY REQUIRED BEFORE PLACEMENT OF A BILIARY COVERED SEMS?

Authors [Vila J.J.](#)¹, Hervas N.¹, Rodriguez Mendiluce I.¹, Arrubla A.¹, Uribarri L.¹, Jusue V.¹, Carrascosa J.¹, Estremera F.¹, Areste I.¹, Busto V.¹, Uрман J.¹

Institute 1 Hospital Universitario de Navarra, Endoscopy Unit. Gastroenterology Dpt., Pamplona, Spain

DOI 10.1055/s-0042-1744758

Aims Our aim was to assess the safety of transpapillary covered stent (CSEMS) placement without previous sphincterotomy.

Methods Prospective database with retrospective analysis including ERCs between 2010–2020. Inclusion criteria: biliary ERC, naive papilla and placement of CSEMS. Epidemiological data, sphincterotomy, sphincteroplasty, adverse effects (AE) according to ASGE criteria were recorded.

Results 6,720 ERCPs were performed and 321 patients included. In 83.5%, 15%, and 87% of patients, sphincterotomy, sphincteroplasty or either of the

two were performed before placing the CSEMS. There were AE in 20.9%: pancreatitis (9%), perforation (2.5%), hemorrhage (6.9%) and others (2.4%), with 4 secondary deaths (1.2%) due to pancreatitis. The incidence of AE did not vary depending on whether or not a sphincterotomy was performed (20.5% vs 20.8%, $p = 1$), with a higher risk of bleeding with sphincterotomy (8.2% vs 0%, $p = 0.006$) and higher risk of death in patients with post-ERCP pancreatitis without sphincterotomy (0.4% vs 5.7%, $p = 0.01$). Sphincteroplasty prior to CSEMS placement entailed a higher risk of AE (35% vs 18%, $p = 0.01$), bleeding (14.6% vs 5.5%, $p = 0.03$) and pancreatitis (16.7% vs 7.7%, $p = 0.05$). With logistic regression, we verified that placement of CSEMS without prior sphincterotomy carries a lower risk of AE (OR = 2.9. 95% CI = 1.6-5.1) adjusted for sex, endoscopist, sphincterotomy and sphincteroplasty.

Conclusions Not to perform sphincterotomy before placing CSEMS does not increase the risk of AE, although patients with post-ERCP pancreatitis could have a worse prognosis. Sphincteroplasty prior to CSEMS placement implies a higher risk of AE.

OP196 A PROPENSITY MATCHED RETROSPECTIVE STUDY ON PREOPERATIVE BILIARY DRAINAGE IN PATIENTS WITH RESECTABLE PERIHILAR CHOLANGIOCARCINOMA: METAL BEATS PLASTIC STENTS?

Authors [de Jong D.M.¹](#), [Nooijen L.E.²](#), [Gilbert T.M.³](#), [Braunwarth E.⁴](#), [Ninkovic M.⁴](#), [Primavesi F.⁴](#), [Malik H.Z.³](#), [Stern N.⁵](#), [Sturgess R.⁵](#), [Erdmann J.L.²](#), [Voermans R.P.⁶](#), [Bruno M.J.¹](#), [Groot Koerkamp B.⁷](#), [van Driel L.M.¹](#)
Institutes 1 Erasmus University Medical Center, Gastroenterology and Hepatology, Rotterdam, Netherlands; 2 Amsterdam UMC, Department of Surgery, Amsterdam, Netherlands; 3 University Hospital Aintree, Department of Surgery, Liverpool, United Kingdom; 4 Medical University of Innsbruck, Department of Surgery, Innsbruck, Austria; 5 Aintree University Hospitals NHS Foundation Trust, Digestive Diseases Unit, Liverpool, United Kingdom; 6 Amsterdam UMC, Department of Gastroenterology and Hepatology, Amsterdam, Netherlands; 7 Erasmus University Medical Center, Department of Surgery, Rotterdam, Netherlands
DOI 10.1055/s-0042-1744759

Aims Adequate preoperative biliary drainage (PBD) is important in patients with resectable perihilar cholangiocarcinoma (pCCA). Currently, Uncovered self-expanding metal stents (SEMS) are not recommended due to potential difficult surgical removal. However, SEMS have proven their advantage in the palliative setting showing a much longer patency and even survival. The aim of this study is to compare the efficacy of PBD with SEMS versus plastic stents (PS) in relation to surgical outcome in resectable pCCA patients.

Methods In this retrospective, multicenter, international cohort study, patients with high suspicion of resectable pCCA who underwent ERCP as initial method to obtain PBD were included from 2010-2020. Efficacy was defined as stent failure, e.g. a composite endpoint of cholangitis and/or re-intervention due to complications or inadequate PBD. Other complications, surgical outcomes and survival were recorded. Propensity score matching (PSM) was performed to adjust for potential confounders.

Results 474 patients had successful stent placement, of which 83 received SEMS and 391 PS, after PSM ($n = 81$). Stent failure occurred significantly less in the SEMS group (28% vs 67%, $p < 0.001$). However, the number of patients undergoing curative intent surgery was similar. Other stent-related complications were alike. Complete SEMS removal during surgery was successful and without complications. Post-operative outcomes and survival were comparable, except for significantly more hepaticojunostomy leaks in the PS group.

► Table 1

	SEMS (n=81)	Plastic (n=81)	P-value
Stent failure	23 (28%)	54 (67%)	<0.001
Curative intent surgery	39 (57%)	42 (59%)	0.965
90-day mortality	8 (21%)	8 (19%)	1.000
Hepaticojunostomy leak	2 (5%)	9 (21%)	0.049

Conclusions SEMS shows superior drainage characteristics compared to PS in patients with resectable pCCA and removal during surgery was well feasible. Surgical outcomes were comparable. Prospective studies are needed to confirm this promising data on PBD by SEMS.

OP197 TEMPORARY EUS-GUIDED ANASTOMOSES (TEAS) TO FACILITATE STAGED ENDOTHERAPY OF COMPLEX BENIGN BILIARY OBSTRUCTION (BBO)

Authors [De Benito Sanz M.¹](#), [Sciarretta M.¹](#), [Maroto Martín C.¹](#), [Durá Gil M.¹](#), [Fuentes Valenzuela E.¹](#), [Carbajo López A.Y.¹](#), [Arrubla A.¹](#), [Sánchez-Ocaña R.¹](#), [De la Serna Higuera C.¹](#), [Pérez-Miranda M.¹](#)
Institute 1 Hospital Río Hortega, Gastroenterology, Valladolid, Spain
DOI 10.1055/s-0042-1744760

Aims To assess treatment outcomes of TEAs using transmural covered self-expandable metal-stents (cSEMS) to provide interval biliary drainage and to maintain access for staged biliary endotherapy under cholangioscopy or fluoroscopy in BBO not amenable to ERCP.

Methods Among 14,443 consecutive ERCPs databased over 15-years, 112 BBO patients (40.2% female; age = 70.7 [SD 13.56] years) with EUS-guided transmural cSEMS were identified. Indications, technique, interventions, technical/clinical success, and AEs were retrieved.

Results Indications: Post-operative strictures 28.6%, CBD stones 23.2%, Non-surgical benign strictures 18.8%, Transections 15.2%, Hepatolithiasis 9.8%, Other 4.5%. Surgically-altered anatomy in 57.1% (Roux-en-Y gastrectomy 22%, Whipple 13.4%, Roux-en-Y hepatico-jejunostomy 11.6%, Other 8.9%). Primary EUS-BD in 37.5%; salvage EUS-BD following failed/incomplete ERCP in 62.5%. 8-10mm x 60-80mm cSEMS with anchoring flaps and/or anchoring clips/pigtails were used for transhepatic/extrahepatic (79%/21%) TEAs. Over a median (IQR) cSEMS indwell time of 118.5 (49-358) days a median (IQR) of 2 (1-3) treatment sessions guided by antegrade cholangiography/cholangioscopy through the cSEMS or naked fistula were performed for antegrade balloon-dilation, stent insertion/removal, stone removal ± lithotripsy, rendezvous, magnetic compression anastomoses, needle-knife incision. cSEMS removal was successful in all attempted cases (66%); TEAs were converted to definitive transmural biliary drainage in 8.9%, 25.1% await treatment completion or have follow-up data unavailable. Final clinical success was achieved in 89.5% of patients. 37 AEs (5.4% severe) occurred in 213 procedures (17.4%).

Conclusions Select complex BBO patients can be treated using TEAs to provide drainage/access during staged endotherapy, thus precluding PTBD or surgery.

OP198V UNCOMMON CAUSE OF DISTAL CBD STRICTURE

Authors [El-Nady M.¹](#), [Altonbary A.²](#), [Hakim H.²](#)
Institutes 1 Faculty of Medicine – Cairo University, Cairo, Egypt; 2 Faculty of Medicine – Mansoura University, Mansoura, Egypt
DOI 10.1055/s-0042-1744761

Thirty-five years old female, presenting with post prandial abdominal pain (Right hypochondrial) and jaundice for 1 month.

Investigations revealed normal complete blood count.

Her liver function tests showed: increased level of Bilirubin 4 mg/dl (Direct 3mg/dl), increased ALP and GGT. Liver Enzymes were normal.

Imaging examination by CT Abdomen showed Dilatation of IHBR and CBD down to the papilla.

Confirmation of diagnosis was done by Serological test: +ve Anti-Fasciola Hepatica Ab Treatment was started by Triclabendazole – two doses of 10 mg/kg given 12 hours apart.

Symptoms regressed and Liver Function tests normalized after 3 days.

OP199 COMPARISON OF TWO INTRADUCTAL BRUSH CYTOLOGY DEVICES FOR SUSPECTED MALIGNANT BILIARY STRICTURES: INTERIM-ANALYSIS OF A RANDOMIZED CONTROLLED TRIAL

Authors Gorris M.¹, van Huijgevoort N.¹, Fockens P.¹, Lekkerkerker S.¹, Meijer S.², Verheij J.², Voermans R.¹, van Wanrooij R.³, van Hooft J.⁴

Institutes 1 Amsterdam UMC, University of Amsterdam, Department of Gastroenterology and Hepatology, Amsterdam, Netherlands; 2 Amsterdam UMC, University of Amsterdam, Department of Pathology, Amsterdam, Netherlands; 3 Amsterdam UMC, Vrije Universiteit Amsterdam, Department of Gastroenterology and Hepatology, Amsterdam, Netherlands; 4 Leiden University Medical Center, Department of Gastroenterology and Hepatology, Leiden, Netherlands

DOI 10.1055/s-0042-1744762

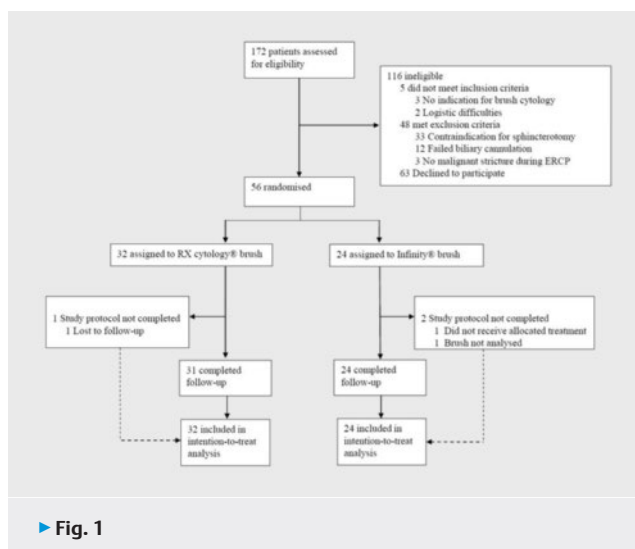
Aims Endoscopic retrograde cholangiopancreatography (ERCP) with brush cytology is commonly used to obtain tissue diagnosis of suspected malignant pancreatobiliary strictures. We aimed to compare the sensitivity of two intraductal brush cytology devices in these patients.

Methods We performed a randomized controlled trial in consecutive patients with suspected malignant, non-hilar biliary strictures who underwent ERCP with concomitant sphincterotomy. Patients were randomly assigned (1:1) to either the Infinity or the RX cytology brush. Histopathological results, cytopathology results or clinical and/or radiological follow-up were used as reference standard. Primary endpoint was sensitivity, defined as brush cytology specimen showing at least suspicion of malignancy (Bethesda ≥ 4) in patients with malignant diagnosis. Secondary endpoints were diagnostic performance and adverse events. Interim analysis was conducted after 50 % of the patients completed follow-up.

Results We screened 172 patients and could randomize 56 patients to the Infinity brush (24 patients, 43 %) or to the RX cytology brush (32 patients, 57 %) between June 2016 and April 2020. Sensitivity of the Infinity brush and RX cytology brush were 50 % and 45 %, respectively. Diagnosis was confirmed by histopathology (n = 24, 43 %), cytopathology (n = 26, 46 %), and clinical or radiological follow up (n = 6, 11 %) and revealed malignancy in 52 patients (93 %) and benign disease in 4 patients (7 %). No differences in diagnostic performance or adverse events were observed. The study was ended prematurely because of futility.

► Table 1

	Infinity brush	RX cytology brush
Sensitivity	48	45
Specificity	100	100
PPV	100	100
NPV	8	16



► Fig. 1

Conclusions The results of this study showed at the interim analysis that the sensitivity of the Infinity brush is not superior to RX cytology brush for diagnosing malignant pancreatobiliary strictures.

OP200 A NEW BIODEGRADABLE STENT IN BILIO-PANCREATIC DISEASES: A PROSPECTIVE MULTI-CENTER FEASIBILITY STUDY

Authors Perez-Cuadrado-Robles E.¹, Lakhtakia S.², Othman H.³, Vardhan Tewethia H.², Yaacob N.⁴, Jarmin R.⁵, Mohamed Z.⁴, Jasmin Roslan E.³, Perrod G.⁶, Benosman H.⁶, Cellier C.⁶, Rahmi G.⁶, Reddy N.²

Institutes 1 Georges-Pompidou European Hospital, Gastroenterology, Paris, France; 2 Asian Institute of Gastroenterology, Hyderabad, India; 3 Universiti Kebangsaan Malaysia, Surgery Department, Kuala Lumpur, Malaysia; 4 Universiti Kebangsaan Malaysia, Interventional Radiology, Kuala Lumpur, Malaysia; 5 Universiti Kebangsaan Malaysia, Kuala Lumpur, Malaysia; 6 Georges-Pompidou European Hospital, Department of Gastroenterology, Paris, France

DOI 10.1055/s-0042-1744763

Aims Biodegradable stents of various designs are reportedly used in pancreato-biliary conditions with promising results. Their major advantage is the avoidance of a repeat endoscopic procedure for stent removal thereby reducing overall cost along with ERCP associated adverse events. To evaluate the feasibility and safety of a new biodegradable stent in patients with pancreato-biliary diseases.

Methods Prospective multicenter pilot study. All consecutive patients ≥ 18 years-old who underwent biliary or pancreatic stenting using the new biodegradable Archimedes stent were included. There were three biodegradation profiles. Technical and clinical success, feasibility and safety were assessed during a pre-established follow-up schedule.

Results Fifty-three patients (mean age: 48.54 ± 19.29 , 66 % male) having biliary (n = 29, 54.7 %) or pancreatic (n = 24, 45.3 %) indications were included. The distribution of stents used according to degradation properties were as follows: fast (n = 11, 20.8 %), medium (n = 16, 30.2 %) and slow (n = 26, 49.1 %). The technical and clinical success were 100 % and 77.8 %. Thirty-five patients were followed for a median of 26 weeks (range: 4-56, 66 %). There were 9 procedure-related adverse events (17 %), all mild, including one uneventful stent-related event (external migration).

► **Table 1** Procedural performances of the new biodegradable Archimedes stent for biliary and pancreatic indications using a predesigned 4-points score (1-excellent, 2-good, 3-fair, 4-poor) grouped in high (1-2) or low (3-4).

	Loadability	Pushability	Flexibility	Fluoroscopic visualization	Deployment accuracy
Overall (score)	Excellent (n = 43, 81.1 %) Good (n = 9, 17 %) Fair (0) Poor (n = 1, 1.9 %)	Excellent (n = 45, 84.9 %) Good (n = 4, 7.5 %) Fair (n = 2, 3.8 %) Poor (n = 2, 3.8 %)	Excellent (n = 32, 60.4 %) Good (n = 16, 30.2 %) Fair (n = 3, 5.7 %) Poor (n = 2, 3.8 %)	Excellent (n = 30, 56.6 %) Good (n = 18, 34 %) Fair (n = 5, 9.4 %) Poor (0)	Excellent (n = 41, 77.4 %) Good (n = 10, 18.9 %) Fair (n = 2, 3.8 %) Poor (0)
Biliary indications	High (n = 28, 96.6 %) Low (n = 1, 3.4 %)	High (n = 25, 86.2 %) Low (n = 4, 13.8 %)	High (n = 24, 82.8 %) Low (n = 5, 17.2 %)	High (n = 27, 93.1 %) Low (n = 2, 6.9 %)	High (n = 27, 93.1 %) Low (n = 2, 6.9 %)
Pancreatic indications *	High (n = 24, 100 %) Low (0)	High (n = 24, 100 %) Low (0)	High (n = 24, 100 %) Low (0)	High (n = 21, 87.5 %) Low (n = 3, 12.5 %)	High (n = 24, 100 %) Low (0)



► **Fig. 1**

Conclusions The biodegradable Archimedes stent placement is feasible and safe in pancreato-biliary diseases.

Optimizing EUS guided interventions
Saturday, 30 April 2022

08:30–09:30
Club A

OP201 SAFETY AND FEASIBILITY OF LUMEN-APOSSING METAL STENTS REMOVALS. RESULTS FROM A PROSPECTIVE NATIONWIDE REGISTRY

Authors Bazaga S.¹, Garcia-Alonso F.J.¹, Aparicio Tormo J.R.², Martinez Moreno B.², Sanchiz V.³, Suria C.³, Garcia-Sumalla A.⁴, Gornals J.B.⁴, Loras C.⁵, Chavarría C.¹, García-Fernandez F.J.⁶, Terán Á.⁷, Vazquez-Sequeiros E.⁸, Pedraza Sanz R.⁹, Pérez-Carazo L.¹⁰, Súbtil J.C.¹¹, Pérez-Millan A.¹², Uceda Porta F.¹³, Busto Bea V.¹⁴, de la Serna-Higuera C.¹, Pinto García I.¹⁵, Colán-Hernández J.¹⁶, Huertas C.¹⁷, Vilella Martorell A.¹⁸, Guardiola-Arévalo A.¹⁹, Castro Urda J.L.²⁰, Nuñez-Otero J.²¹, Sánchez-Hernández E.²², Gonzalez-Huix F.^{23, 24}, de la Morena F.²⁵, Villanueva Pavón R.²⁶, Cou-

to-Worner I.²⁷, Guarner-Argente C.²⁸, Perez-Miranda M.¹

Institutes 1 Hospital Universitario Rio Hortega, Valladolid, Spain; 2 Hospital General Universitario de Alicante, Alicante, Spain; 3 Hospital Clínico Universitario de Valencia, Valencia, Spain; 4 Hospital Universitari de Bellvitge, Hospitalet de Llobregat, Spain; 5 Hospital Universitari Mútua de Terrassa, Terrassa, Spain; 6 Hospital Universitario Virgen del Rocío, Sevilla, Spain; 7 Hospital Universitario Marqués de Valdecilla, Santander, Spain; 8 Hospital Universitario Ramón y Cajal, Madrid, Spain; 9 Hospital General Universitario de Castellón, Castellón, Spain; 10 Hospital General Universitario Gregorio Marañón, Madrid, Spain; 11 Clínica Universidad de Navarra, Pamplona, Spain; 12 Hospital Universitario Rio Carrión, Palencia, Spain; 13 Hospital General Universitario de Elche, Elche, Spain; 14 Complejo Hospitalario de Navarra, Pamplona, Spain; 15 Hospital Regional de Málaga, Málaga, Spain; 16 Hospital Universitari Germans Trias i Pujol, Badalona, Spain; 17 Hospital Universitari de Girona Josep Trueta, Girona, Spain; 18 Hospital Universitario Son Llàtzer, Palma de Mallorca, Spain; 19 Hospital Universitario de Fuenlabrada, Fuenlabrada, Spain; 20 Hospital Universitario Severo Ochoa, Leganés, Spain; 21 Hospital Universitario del Sureste, Arganda del Rey, Spain; 22 Complejo Hospitalario Universitario de Ourense, Ourense, Spain; 23 Clínica de Girona, Girona, Spain; 24 Hospital Universitari Arnau de Vilanova, Lleida, Spain; 25 Hospital Universitario La Princesa, Madrid, Spain; 26 Hospital Universitario de León, León, Spain; 27 Complejo Hospitalario Universitario de A Coruña, A Coruña, Spain; 28 Hospital de la Santa Creu i Sant Pau, Barcelona, Spain

DOI 10.1055/s-0042-1744764

Aims Lumen-apposing metal stents (LAMS) removals are performed in advanced endoscopy suites equipped with fluoroscopy. Studies assessing the removal complexity, technique and adverse events (AEs) are lacking.

Methods Prospective case series including all consecutive LAMS placement attempts between 2019-2020 in 31 centers. Analysis of all endoscopic removals following a technically successful LAMS placement. After removal, a centralized, standardised follow-up interview was undertaken. Complex removals were defined as those described as difficult by the endoscopist or if the time required was > 90th percentile. Multivariable logistic regression techniques assessed risk factors for embedment and complex removal.

Results A total of 158 removal attempts after a median indwell time of 46.5 days (IQR: 31-70) were included (Table 1). Stent embedment was observed in 19 (12%) cases, partial (14 (8.9%)) or total (5 (3.2%)). An indwell time > 5 weeks (3.6% vs 16.7%, p = 0.02) was the only embedment risk factor.

Overall, 156 (98.7%) retrievals were successful, requiring 2 minutes (IQR: 1-4). Stent embedment associated longer removal times (p = 0.001). 149 (94.3%) removals were performed by proximal flap traction (rat-tooth forceps or pol-

ypsectomy snare) and 140 (88.6 %) were classified as easy/very easy. We identified 13 (8.2 %) complex removals. Predictors of complex removal were: stent embedment (OR: 10.4 (2.8-38.3)) and LAMS placed without a free-hands technique (OR: 5.1 (1, 2-21, 5)). We identified 7 (4.3 %) AEs, all mild/moderate intraprocedural gastrointestinal bleeds.

► **Table 1**

Age, med (IQR)	62.2 (50.8-70.5)
Sex male, n (%)	105 (66.5 %)
Indication, n (%)	WON 76 (48.1 %) Pseudocysts 39 (24.7 %) No pancreatic fluid collections 19 (12 %) Enteroanastomoses 17 (10,8 %) Others 7 (4,4 %)
Adhered tissue to the LAMS, n (%)	25 (15,8 %)
Intact LAMS coating, n (%)	145 (91,8 %)

Conclusions Removals of LAMS placed with a free-hand technique scheduled within 5 weeks after deployment can be undertaken in a conventional endoscopy suite.

OP202V TRANSABDOMINAL SEMS PLACEMENT AS A RESCUE THERAPY TO DRAIN POST-ACUTE PANCREATITIS COLLECTION: A CASE REPORT (WITH VIDEO)

Authors Torrisi S.¹, Brunori A.¹, Manta R.¹, Germani U.¹, Castellani D.¹

Institute 1 University of Perugia, Santa Maria Della Misericordia Hospital, Gastroenterology and Digestive Endoscopy, Perugia, Italy

DOI 10.1055/s-0042-1744765

A 60-year-old female was hospitalized for a severe pancreatitis complicated by a large infected abdominal capsuled collection in the iliac area. A radiological guided drainage (14 Fr) was placed and connected to a Redon vacuum bottle without improvement due to solid necrotic tissue obstruction. The external drainage was removed and an oesophageal FC-SEMS (Taewoong Niti-5; 120x20 mm) was placed; endoscopic necrosectomy was performed pushing a gastro-scope (UGT-By Olympus) through the SEMS until resolution of the collection. Our experience demonstrates that isolated abdominal abscesses may be treated by SEMS percutaneous placement, a conservative approach that decreases time of healing and costs.

OP203 IMPACT OF DOUBLE-PIGTAIL PLASTIC STENTS IN THE ADVERSE EVENT RATE OF PANCREATIC FLUID COLLECTIONS, GALLBLADDER DRAINAGES AND CHOLEDOCHAL DRAINAGES USING LUMEN-APPPOSING METAL STENTS

Authors Bazaga S.¹, García-Alonso F.-J.¹, Aparicio Tormo J.R.², Martínez-Moreno B.², Sanchiz V.³, Suria C.³, García-Sumalla A.⁴, Gornals J.⁴, Chavarría C.¹, Loras C.⁵, García-Fernández F.J.⁶, Terán Á.⁷, Vazquez-Sequeiros E.⁸, Pedraza Sanz R.⁹, Pérez-Carazo L.¹⁰, Subtil J.C.¹¹, Pérez-Millán A.¹², Uceda Porta F.¹³, Busta Bea V.¹⁴, de la Serna-Higuera C.¹, Pinto García I.¹⁵, Colán-Hernández J.¹⁶, Huertas C.¹⁷, Vilella Martorell A.¹⁸, Guardiola-Arevalo A.¹⁹, Castro Urda J.L.²⁰, Nuñez-Otero J.²¹, Sánchez-Hernández E.²², González-Huix F.^{23, 24}, de la Morena F.²⁵, Villanueva Pavón R.²⁶, Couto-Worner I.²⁷, Guarner-Argente C.²⁸, Perez-Miranda M.¹

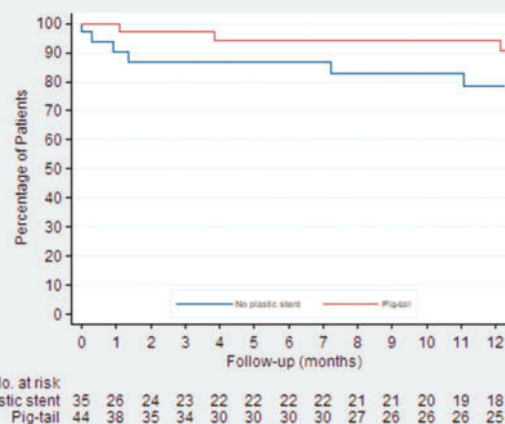
Institutes 1 Hospital Universitario Río Hortega, Valladolid, Spain; 2 Hospital General Universitario de Alicante, Alicante, Spain; 3 Hospital Clínico Universitario de Valencia, Valencia, Spain; 4 Hospital Universitari de Bellvitge,

Hospitalet de Llobregat, Spain; 5 Hospital Universitari Mútua de Terrassa, Terrassa, Spain; 6 Hospital Universitario Virgen del Rocío, Sevilla, Spain; 7 Hospital Universitario Marqués de Valdecilla, Santander, Spain; 8 Hospital Universitario Ramón y Cajal, Madrid, Spain; 9 Hospital General Universitario de Castellón, Castellón, Spain; 10 Hospital General Universitario Gregorio Marañón, Madrid, Spain; 11 Clínica Universidad de Navarra, Pamplona, Spain; 12 Hospital Universitario Río Carrión, Palencia, Spain; 13 Hospital General Universitario de Elche, Elche, Spain; 14 Complejo Hospitalario de Navarra, Pamplona, Spain; 15 Hospital Regional de Málaga, Málaga, Spain; 16 Hospital Universitari Germans Trias i Pujol, Badalona, Spain; 17 Hospital Universitari de Girona Josep Trueta, Girona, Spain; 18 Hospital Universitario Son Llàtzer, Palma de Mallorca, Spain; 19 Hospital Universitario de Fuenlabrada, Fuenlabrada, Spain; 20 Hospital Universitario Severo Ochoa, Leganés, Spain; 21 Hospital Universitario del Sureste, Arganda del Rey, Spain; 22 Complejo Hospitalario Universitario de Ourense, Ourense, Spain; 23 Hospital Universitari Arnau de Vilanova, Lleida, Spain; 24 Clínica de Girona, Girona, Spain; 25 Hospital Universitario La Princesa, Madrid, Spain; 26 Hospital Universitario de León, León, Spain; 27 Complejo hospitalario Universitario de A Coruña, A Coruña, Spain; 28 Hospital de la Santa Creu i Sant Pau, Barcelona, Spain
DOI 10.1055/s-0042-1744766

Aims Regarding lumen apposing metal stents (LAMS), the benefit of coaxial double pigtail stents remains unclear. We aimed at assessing their effect on the adverse events (AEs) rate in pancreatic collections, gallbladder and choledochal drainages.

Methods We performed a subanalysis of the the RNPAL case series, which retrieved all transmural LAMS between January 2019 and January 2020 in 31 centres, including all technically successful LAMS placed in pancreatic collections, EUS-guided gallbladder drainage (EUS-GBD) and common bile duct drains (EUS-CBDD). AEs were identified through centralised periodic follow-up until withdrawal, death, or up to 1 year, using standardized telephone questionnaires. We used the log-rank test to evaluate the effect of double-pigtail stents and Cox regression techniques for other possible risk factors.

Results We included 140 pancreatic collections (67.9 % WONs, 32.1 % pseudocysts), 79 EUS-GBD and 49 EUS-CBDD. Table 1 shows their baseline characteristics. Double-pigtail stents were used in 46.4-55.7 % of cases, according to the procedure. We identified 46 AE (11 severe/fatal) in pancreatic collections, 10 in EUS-GBD (4 severe/fatal) and 13 in EUS-CDS (3 severe/fatal). The log-rank test documented a risk reduction with double-pigtail stents in pancreatic collections ($p = 0.02$) and in EUS-GBD (Figure 1, $p = 0.04$). We did not observe differences in EUS-CDS ($p = 0.57$). The only risk factor identified was the presence of biliopancreatic tumors in gallbladder drainages (HR 5.2 (95 % CI: 1.2-21.8), $p = 0.03$).



► **Fig. 1**

► Table 1

	Pancreatic fluid collections (n = 140)	Gallbladder drainages (n = 79)	Choledochal drainages (n = 49)
Sex male n (%)	107 (76.4%)	42 (53.2%)	24 (49%)
Age (med, IRC)	62.9 (50.8–71.2)	84.5 (76.5–90.1)	81.2 (69.3–85.6)
Neoplasm, n (%)	5 (3.6%)	17 (21.5%)	46 (93.9%)
Pig-tail, n (%)	65 (46.4%)	44 (55.7%)	25 (51%)

Conclusions Double-pigtail stents might reduce the AE risk in pancreatic collections and gallbladder drainages.

OP204V TRANSRECTAL DRAINAGE OF ABDOMINAL ABSCESS

Authors Torres Vicente G.¹, Pijoan Comas E.^{2,3}, Miguel Salas I.¹, Vargas García A.^{2,3}, Torres Monclús N.¹, Alburquerque Miranda M.^{2,3}, Bayas Pástor D.C.¹, Vázquez Gómez D.¹, Zaragoza Velasco N.¹, Gonzalez-Huix Lladó F.^{1,2}

Institutes 1 Hospital Universitari Arnau de Vilanova, Lleida, Spain; 2 Clínica Girona, Girona, Spain; 3 Hospital de Palamós, Palamós, Spain
DOI 10.1055/s-0042-1744767

A 74-year-old woman was admitted for acute diverticulitis with polylobulated air-fluid collection with previous failure of radiological drainage. EUS-guided transrectal drainage was performed, 19G needle puncture to obtain material for culture. Access to the collection with cystotome, and path dilatation with balloon up to 12mm, a first 10Fx5cm Pigtail is placed. By direct endoscopic vision, a 3-way silicone Foley nº20 tube was placed, that remained within the cavity anchored by the balloon. A second 7Fx5cm Pigtail was placed. Continuous lavage with 1000mL/day was maintained for 3 days. After 4 days CT showed nearly resolution of collections.

OP205V ENDOSCOPIC ULTRASOUND-GUIDED DRAINAGE OF PERIRECTAL ABSCESS IN PYODERMA GANGRENOsum

Authors Gesualdo M.¹, Sacco M.¹, Castellano F.¹, Mauriello A.¹, Fimiano F.¹, Cravero F.¹, De Angelis C.G.¹

Institute 1 AOU Città della Salute e della Scienza, University of Turin, Division of Gastroenterology, Endoscopy Unit, Turin, Italy
DOI 10.1055/s-0042-1744768

The video presents a case of 47-year-old woman with a perirectal abscess (64 mm at MRI) in pyoderma gangrenosum, with symptomatic onset of fever and sacral pain. Blood test detected high serum level of WBC (18.000/mm³) and mild level of C-reactive protein (9 mg/dl). Endoscopic ultrasound-guided drainage of collection was planned.

During endoscopy a 15x15 mm LAMS was placed with a drainage of purulent material; two pigtail stents were located to reduce LAMS migration. After one month a protective colostomy was performed to enhance reabsorption and subsequently the LAMS was removed. The control MRI confirmed the complete reabsorption of collection.

OP206 PREDICTORS OF SEVERE ADVERSE EVENTS AFTER ENDOSCOPIC ULTRASOUND THROUGH-THE-NEEDLE BIOPSY OF PANCREATIC CYSTS: A MACHINE LEARNING APPROACH

Authors Facciorusso A.^{1,2}, Kovacevic B.³, Yang D.⁴, Vilas-Boas F.⁵, Martínez-Moreno B.⁶, Stigliano S.⁷, Rizzatti G.⁸, Sacco M.⁹, Arevalo-Mora M.¹⁰, Villarreal-Sanchez L.¹¹, Conti Bellocchi M.C.², Bernardoni L.², Gabbriellini A.², Barresi L.¹², Gkolfakis P.¹³, Robles-Medrand C.¹⁰, De Angelis C.⁹, Larghi A.⁸, Di Matteo F.M.⁷, Aparicio J.⁶, Macedo G.⁵, Draganov P.¹⁴, Vilmann P.³, Repici A.¹⁵, Crinò S.F.²

Institutes 1 University of Foggia, Gastroenterology Unit, Department of Surgical and Medical Sciences, Foggia, Italy; 2 The Pancreas Institute, University Hospital of Verona, Department of Medicine, Gastroenterology and Digestive Endoscopy Unit, Verona, Italy; 3 Copenhagen University Hospital Herlev and Gentofte, Division of Endoscopy, Copenhagen, Denmark; 4 University of Florida, Division of Gastroenterology and Hepatology, Gainesville, United States; 5 Centro Hospitalar e Universitário de São João-Porto, Department of Gastroenterology, Porto, Portugal; 6 ISABIAL, Hospital General Universitario de Alicante, Unidad de Endoscopia, Alicante, Spain; 7 Campus Bio-Medico University Hospital, Operative Endoscopy Department, Rome, Italy; 8 Fondazione Policlinico Universitario A. Gemelli IRCCS, Digestive Endoscopy Unit, Rome, Italy; 9 AOU Città della Salute e della Scienza di Torino, Gastroenterology Division, Turin, Italy; 10 Instituto Ecuatoriano de Enfermedades Digestivas, Guayaquil, Ecuador; 11 Gastrocare, Digestive Diseases Center, Quito, Ecuador; 12 Department of Diagnostic and Therapeutic Services, IRCCS-ISMETT, Endoscopy Service, Palermo, Italy; 13 Erasme University Hospital, Department of Gastroenterology, Hepatopancreatology and Digestive Oncology, Brussels, Belgium; 14 Center of Interventional Endoscopy, AdventHealth, Orlando, United States; 15 IRCCS Humanitas Research Hospital, Department of Gastroenterology, Milan, Italy

DOI 10.1055/s-0042-1744769

Aims A non-negligible rate of severe adverse events (AEs) was observed with endoscopic ultrasound (EUS) through-the-needle biopsy (TTNB) of pancreatic cystic lesions (PCLs); however, predictive factors are still unknown. We aimed at identifying the hierarchic interaction among independent predictors for TTNB-related AEs and to generate a prognostic model using recursive partitioning analysis (RPA).

Methods Multicenter retrospective analysis of 506 patients with PCLs who underwent TTNB. RPA of predictors for AEs was performed and the model was validated by means of bootstrap resampling.

Results Out of 79 (15.6%) AEs observed, 15 (3.0%), 9 (1.8%), and 3 (0.5%) events were classified as moderate, severe, and fatal, respectively. Age (odds ratio [OR] 1.34, 1.07-2.04; p = 0.05), number of microforceps passes (OR from 2.13, 1.34-423 to OR 3.16, 2.03-6.34 with the increase of the number of passes), complete aspiration of the cyst (OR 0.55, 0.32-0.93; p = 0.02), and diagnosis of IPMN (OR 4.16, 2.27-7.69; p < 0.001) were found as independent predictors of AEs, as confirmed both in logistic regression and in random forest analysis. RPA identified three risk classes: high-risk (IPMN patients sampled with multiple microforceps passes, 29.5% AEs rate), low-risk (5.4% AE rate, including patients < 64 years with other-than-IPMN diagnosis sampled in no more than 2 microforceps passes and with complete aspiration of the cyst) and middle-risk class (11.5% AEs rate, including the remaining patients).

Conclusions Patients with IPMN are at higher risk for TTNB-related AEs and should be carefully selected. The use of the present model in clinical practice could implement patient selection thus optimizing the risk/benefit of TTNB.

Advanced endoscopic resection for colorectal lesions

Saturday, 30 April 2022

08:30–09:30

Club E

OP207 ENDOSCOPIC SUBMUCOSAL DISSECTION (ESD) VERSUS PIECE-MEAL ENDOSCOPIC MUCOSAL RESECTION (EMR) FOR LARGE LATERALLY SPREADING LESIONS (LSL): FRENCH RANDOMIZED CONTROLLED TRIAL (RESECT-COLON)

Authors Jacques J.¹, Wallenhorst T.², Chevaux J.-B.³, Lepilliez V.⁴, Chaussade S.⁵, Rivory J.⁶, Legros R.¹, Schaefer M.³, Leblanc S.⁴, Rostain F.⁷, Barret M.⁵, Albouys J.¹, Belle A.⁵, Crepin S.¹, Magne J.¹, Preux P.M.¹, Lepetit H.¹, Dahan M.¹, Ponchon T.⁶, Pioche M.⁶

Institutes 1 CHU Limoges, Limoges, France; 2 CHU Rennes, Rennes, France; 3 CHU Nancy, Nancy, France; 4 Hôpital Privé Jean Mermod, Lyon, France; 5 Hôpital Cochin APHP, Paris, France; 6 Hôpital Edouard Herriot, Lyon, France; 7 Hôpital Edouard Herriot, Lyon, France

DOI 10.1055/s-0042-1744770

Aims The optimal endoscopic resection strategy for large LSL is debated between Japanese (ESD) and western (PM-EMR) attitudes. No randomized trial is available about this daily topic.

Methods Multicenter, single blinded, randomized controlled trial involving 6 centers and 11 physicians comparing ESD and PM-EMR with snare tip thermal ablation of the margin for large (>25 mm) low risk laterally spreading lesions of the colon.

The primary outcome was the recurrence rate at 6 months.

Results 359 patients were randomized between 09/15/2019 and 10/01/2021 (ESD 177, PM-EMR 182)

Location in the right colon in 60.3% of cases with a mean size of 42.9 mm (+/- 16.1). There was a significant difference in recurrence at 6 months in favor of the ESD group: 0.6% vs 5.1% (OR 8.6 IC95% 1.5 – 49.3; p = 0.019).

Secondary endpoints:

- per procedure perforation ESD 5.6% vs PM-EMR 2.2% p = 0.09
- R0 resection rate ESD 93.8% vs PM-EMR 12.1% p < 0.001
- mean duration of the procedure ESD 61.4 min (+/- 46.6) vs PM-EMR 20.4 min (+/- 17.1) (p < 0.001)
- clinically significant delayed bleeding: ESD 7.9% vs PM-EMR 5.5%, p = 0.36
- presence of deep submucosal cancer (> 1000 microns) ESD 4% vs PM-EMR 3.8% p = 0.8
- presence of superficial submucosal cancer (< 1000 microns): ESD 3.5% vs PM-EMR 0.5% p = 0.08

Conclusions ESD is superior to PM-EMR regarding 6 months recurrence rate without increasing the morbidity. R0 resection exceeds 90%, avoiding costly and unwanted follow-up colonoscopies. PM-EMR seems to be associated with a risk of loss of histological information that is detrimental to the patient.

OP208V TREATMENT OF LATERAL SPREADING TUMOR (26CM) WITH ENDOSCOPIC SUBMUCOSAL DISSECTION; SINGLE TUNNEL TECHNIQUE

Authors Aslan F.¹, Taskin O.C.², Gokce K.¹, Gurses B.³, Ak A.B.¹, Manici M.⁴

Institutes 1 Koc University Hospital, Gastroenterology, Istanbul, Turkey; 2 Koc University Hospital, Pathology, Istanbul, Turkey; 3 Koc University Hospital, Radiology, Istanbul, Turkey; 4 Koc University Hospital, Anesthesiology and Reanimation, Istanbul, Turkey

DOI 10.1055/s-0042-1744771

An 81-year-old male patient presented to clinic with diarrhea nausea vomiting hypokalemia prerenal acute kidney injury. On colonoscopy flat-granular-polypoid lesion was detected, starting from anal canal at 1st cm extending proxi-

mally approximately 20cm. There was no sign of invasion on chromoendoscopy, MRI and endoscopic ultrasonography. Patient was treated with ESD. A single tunnel from anal canal towards proximal side of the lesion was made. The lesion was removed en bloc after lateral incisions. The externalized lesion was measured as 262 mm * 166 mm. The procedure duration was 186 minutes. The lesion was reported as villous adenoma with multifocal intramucosal carcinoma, all margins were clear.

OP209 PREDICTION OF RESIDUAL NEOPLASIA AFTER A NON-CURATIVE COLORECTAL ESD; A MULTI-CENTER, MULTINATIONAL STUDY

Authors Santos-Antunes J.¹, Pioche M.², Ramos-Zabala F.³, Cecinato P.⁴, Gallego F.⁵, Barreiro P.⁶, Félix C.⁶, Sferrazza S.⁷, Berr F.⁸, Wagner A.⁸, Lemmers A.⁹, Figueiredo M.⁹, Albéniz E.¹⁰, Uchima H.¹¹, Kuttner-Magalhães R.¹², Fernandes C.¹³, Morais R.¹, Gupta S.¹⁴, Marques M.¹, Bourke M.J.¹⁴, Macedo G.¹

Institutes 1 Centro Hospitalar S. João, Gastroenterology, Porto, Portugal; 2 Department of Hepatology and Gastroenterology, Edouard Herriot Hospital, Lyon, France; 3 Departamento de Gastroenterología, Departamento de Ciencias Médicas Clínicas, Hospital Universitario HM Montepríncipe, HM Hospitales, Universidad San Pablo-CEU, CEU Universities, Madrid, Spain; 4 Gastroenterology and Digestive Endoscopy Unit, Azienda USL – IRCCS di Reggio Emilia, Reggio Emilia, Italy; 5 Digestive Endoscopy Unit, Hospital de Poniente, Almería, Spain; 6 Gastroenterology Department, Centro Hospitalar Lisboa Ocidental EPE, Lisboa, Portugal; 7 Gastroenterology and Endoscopy Unit, Santa Chiara Hospital, Trento, Italy; 8 Department of Internal Medicine I, University Clinics Salzburg, Paracelsus Medical University, Salzburg, Austria; 9 Department of Gastroenterology, Hepatopancreatology and Digestive Oncology, CUB Erasme Hospital, Université Libre de Bruxelles (ULB), Brussels, Belgium; 10 Complejo Hospitalario de Navarra, Navarrabiomed Research Institute, Public University of Navarra, IdiSNA, Navarra, Spain; 11 Servicio de Endoscopia Digestiva Centro Médico Teknon, Barcelona, Spain; 12 Gastroenterology Department, Hospital Santo António, Centro Hospitalar Universitário do Porto, Porto, Portugal; 13 Gastroenterology Department, Centro Hospitalar de Gaia, Vila Nova de Gaia, Portugal; 14 Department of Gastroenterology and Hepatology, Westmead Hospital, Sydney, Australia

DOI 10.1055/s-0042-1744772

Aims To assess the rate of residual lesion in the surgical specimen or during the endoscopic follow-up after a non-curative colorectal ESD, and to establish predictive scores to be applied in the clinical setting.

Methods Retrospective multicenter analysis of ESDs performed in epithelial colorectal lesions. Patients with non-curative ESDs that had been submitted to complementary surgery or had at least one follow-up endoscopy were included.

Results From 2214 colorectal ESDs, 340 were included. Residual lesion was observed in 40 (12%) patients. Surgery was performed in 99 patients, and 76 (77%) had no residual lesion in the colorectal wall or lymph node metastasis (LNM). Residual lesion rate for SM1 cancers was 0%; rate of residual lesion for >SM1 cancers was also 0% if no other risk factors were present. Independent risk factors for LNM were poor differentiation and lymphatic permeation (NC-Lymph score). Patients scoring 0, 1, 2 or 3 had a 5%, 25%, 60% and 100% chance of LNM (p < 0.001). Risk factors for residual lesion in the wall was colonic location and positive vertical margin (NC-Wall score). Patients with NC-Wall0 had a 0% chance of residual lesion in the wall, raising to 6.7% in NC-Wall1 and 33.3% with NC-Wall2, p < 0.001.

Conclusions The presence of lymphatic permeation or poor differentiation in the ESD specimen warrants surgery due to the high risk of LNM. Colonic lesions with positive vertical margin had the highest risk of residual lesion in the wall. Our scores can be a useful tool for the management of patients submitted to non-curative colorectal ESDs.

OP210V THE NEEDLE-INCISION-SNARE TECHNIQUE USING A SINGLE INJECTION-SNARE DEVICE FOR KNIFE-ASSISTED RESECTION (EMR-ESD HYBRID ENDOSCOPIC RESECTION)

Authors Mönkemüller K.¹, Hornung F.¹, Hamm A.¹, Fiedler J.¹, Naewie A.¹, Martínez-Alcalá A.¹

Institute 1 Ameos University Teaching Hospital, Gastroenterology, Halberstadt, Germany

DOI 10.1055/s-0042-1744773

Advanced endoscopic resection encompasses the utilization of injection needle to create the submucosal cushion followed by incision using a needle, and dissection using a knife. We have developed a technique using a single device for accomplishing hybrid EMR-ESD. This approach using a single device to perform advanced resection is practical as it saves time, as injection is immediately available, followed by incision and dissection using the snare's metal tip, for final in toto excision of the specimen with the snare. This device and technique have the potential of improving the acceptance and performance of ESD or ESD-EMR hybrid procedures worldwide.

OP211 THE SIZE, MANOEUVRABILITY, SITE, HISTORY SCORE (SMSH)—A NEW TOOL FOR PREDICTING THE OUTCOMES OF COLORECTAL ENDOSCOPIC SUBMUCOSAL DISSECTION

Authors Juglard C.¹, Lambin T.², Wallenhorst T.³, Lepilliez V.⁴, Schaefer M.⁵, Degand T.⁶, Chaussade S.⁷, Rahmi G.⁸, Le Baieur Y.⁹, Legros R.¹, Albouys J.¹, Rivory J.¹⁰, Chevaux J.B.⁵, Leblanc S.⁴, Rostain F.¹⁰, Lepetit H.¹, Dahan M.¹, Barret M.⁷, Hallit R.⁷, Lafeuille P.², Perrot G.⁸, Ponchon T.¹⁰, Pijouan Comas M.², Jacques J.¹

Institutes 1 CHU Dupuytren, Service d'Hépatogastro-Entérologie, Limoges, France; 2 CHU Edouard Herriot, Service d'Hépatogastro-Entérologie, Lyon, France; 3 CHU Pontchaillou, Rennes, France; 4 Hôpital Privé Jean Mermoz, Lyon, France; 5 CHRU Nancy, Nancy, France; 6 CHU Dijon Bourgogne, Dijon, France; 7 CHU Cochin, Paris, France; 8 Hôpital Européen Georges Pompidou, Paris, France; 9 Hôpital Privé Saint Joseph, Paris, France; 10 Hôpital Edouard Herriot, Lyon, France

DOI 10.1055/s-0042-1744774

Aims Despite its undeniable carcinologic advantages, endoscopic submucosal dissection (ESD) has not replaced piecemeal endoscopic mucosal resection in Western countries because of the technical difficulty, long procedure duration, high complication rate, and steep learning curve. Differentiation of easy and difficult lesions would promote use of ESD. The objective of this study was to try to create a score that predict outcomes after colorectal ESD for large superficial lesions.

Methods We considered R0 resection without perforation (ESD success) as the primary endpoint.

Independent risk factors identified in a multivariate analysis of a large prospective monocentric derivation cohort were used to create the SMSH score, which was validated in an independent prospective French multicentre validation set.

Results The derivation and validation sets comprised 738 and 1,042 lesions, respectively. The SMSH score comprised four preprocedural risk factors: tumour size, manoeuvrability, tumour location, and lesion history. The probability of ESD success in the easy (SMSH1; total score < 4 points), average (SMSH2; 4–7 points), difficult (SMSH3; 8–12 points), and very difficult (SMSH4; > 12 points) categories was 89%, 85%, 77%, and 65% in the derivation set ($p < 0.001$), and 89%, 87%, 76%, and 53% in the external validation set ($p < 0.001$), respectively.

Conclusions The SMSH score, based on pre-procedural data, predicts ESD success for colorectal lesions and identifies easy lesions suitable for trainees and difficult lesions that should be reserved for expert centres.

OP212V GIANT RECTAL ADENOMAS PRESENTING WITH MCKITTRICK-WHELOCK SYNDROME. SERIES OF THREE CASES SUCCESSFULLY TREATED BY ENDOSCOPIC SUBMUCOSAL DISSECTION AT A TERTIARY REFERRAL CENTER

Authors Tormo Lanseros B.¹, Santiago Garcia J.¹, de Frutos Rosa D.¹, Martin Rodriguez D.², Botella Mateu B.², Dotor de Lama A.M.³, Valentin Gomez F.¹, Herreros de Tejada Echanojauregui A.¹

Institutes 1 Puerta de Hierro University Hospital, Gastroenterology, Majadahonda, Spain; 2 Infanta Cristina University Hospital, Gastroenterology, Parla, Spain; 3 Puerta de Hierro University Hospital, Anatomic Pathology, Majadahonda, Spain

DOI 10.1055/s-0042-1744775

Three patients with chronic diarrhea and severe blood tests abnormalities underwent an endoscopic examination that revealed three giant (> 10cm) tubulovillous adenomas in the rectum. This clinical presentation was consistent with a McKittrick-Wheelock syndrome (MWS). Surgical treatment is the first line option in most reported series. For these cases, ESD was planned and successfully performed without significant complications. En-bloc resection was achieved in 100% cases. After 12 months of follow-up no recurrence was noted. Symptoms and blood tests abnormalities completely disappeared after the endoscopic treatment was performed. ESD can be considered as a very effective treatment option for MWS.

Artificial intelligence pushing the endoscopist's skills

Saturday, 30 April 2022

08:30–09:30

Club H

OP213 EXPERTS ENDOSCOPISTS VS. ARTIFICIAL INTELLIGENCE IN THE EVALUATION OF UNDETERMINED BILIARY STRICTURES IN CHOLANGIOSCOPY: A MULTICENTER, BLINDED, NESTED CONTROLLED TRIAL

Authors Robles-Medrande C.¹, Alcivar-Vasquez J.¹, Kahaleh M.², Raijman I.³, Kunda R.⁵, Tyberg A.², Sarkar A.², Shahid H.², Mendez J.C.⁶, Rodriguez J.¹, Merfea R.C.¹, Barreto Perez J.¹, Arevalo-Mora M.¹, Puga-Tejada M.¹, Calle-Loffredo D.¹, Alvarado H.¹, Lukashok H.P.¹

Institutes 1 Instituto Ecuatoriano de Enfermedades Digestivas, Guayaquil, Ecuador; 2 Robert Wood Johnson Medical School Rutgers University, New Brunswick, United States; 3 Houston Methodist Hospital, Houston, United States; 4 Baylor Saint Luke's Medical Center, Houston, United States;

5 Department of Advanced Interventional Endoscopy, Universitair Ziekenhuis Brussel (UZB)/Vrije Universiteit Brussel (VUB), Brussels, Belgium; 6 Mdconsgroup, Artificial Intelligence Department, Guayaquil, Ecuador

DOI 10.1055/s-0042-1744776

Aims Digital single-operator cholangioscopy (DSOC) findings achieve high diagnostic accuracy for neoplastic bile duct lesions; however, endoscopists' intra and interobserver agreements vary widely. We have recently proposed an AI model to classify bile duct lesions during real-time DSOC and currently pursue clinical validation of our AI model, compared with high DSOC experienced endoscopists.

Methods Multi-center diagnostic trial. Four DSOC experts endoscopists (blinded to clinical records), observed and classified a set of videos among neoplastic or non-neoplastic bile duct lesions. All videos were blinded for DSOC experts and for the AI software (Mdconsgroup, Guayaquil, Ecuador). The neoplastic bile duct criteria are in accordance with the Robles-Medrande et al and the Mendoza classifications. The experts assessed neoplastic bile duct by presence or absence of disaggregated criteria. Likewise, the statistical software computed disaggregated answers. The final diagnosis of malignancy was based on histological results, and 1-year clinical follow-up outcomes. NCT05147389.

Results A total of 170 videos from 170 patients from 4 different centers were analyzed with the AI model. There was an equal distribution among neoplastic and non-neoplastic DOCS diagnosis (Table 1). DSOCAI software achieved statistically significant accuracy values ($p < 0.001$) for neoplastic diagnosis with a $\geq 90\%$ sensitivity, $\geq 68\%$ specificity, $\geq 65\%$ positive and $\geq 83\%$ negative predictive values (**Figure 1**) when compared with endoscopist expert.

► **Table 1** Baseline data stratified by neoplasia confirmation during one-year follow-up.

	Total (N = 170)	Neoplasia (N = 85)	Non-neoplasia (N = 85)
Age (years), median (IQR)	62.5 (57.0 – 68.8)	64.0 (59.0 – 71.0)	59.0 (52.0 – 65.0)
Gender (female), n (%)	79 (46.5)	45 (52.9)	34 (40.0)
Visual Impression – DOCS diagnosis, (%)			
Non-Neoplasia	85 (50)	-	85 (100)
Neoplasia	85 (50)	85 (100)	-
Neoplasia Biopsy diagnosis, (%)	154 (90.6)	85 (100)	-
Non-neoplasia Biopsy diagnosis, (%)	16 (9.4)	-	85 (100)

Conclusions The proposed AI model accurately recognized between neoplastic and non-neoplastic bile duct lesions with good accuracy, being statistically significant over experts in DSOCAI. This model may shorten learning curves time in less experienced endoscopists, while attaining accurate biliary lesion recognition skills.

	Sensitivity	Specificity	PPV	NPV	Agreement	ROC curves
Expert 1 (n=94)						
CRM criteria	27/48; 56.25 (41.18 - 70.52)	19/46; 41.3 (27 - 56.77)	27/54; 50 (36.08 - 63.92)	19/40; 47.5 (31.51 - 63.87)	46/94; 48.94 (38.48 - 59.46)	0.51
Mendoza criteria	46/48; 95.83 (85.75 - 99.49)	2/46; 4.35 (0.53 - 14.84)	46/90; 51.11 (40.35 - 61.8)	2/4; 50 (6.76 - 93.24)	48/94; 51.06 (40.54 - 61.52)	0.51
AI	47/48; 97.92 (88.93 - 99.95)	32/46; 69.57 (54.25 - 82.26)	47/61; 77.05 (64.5 - 86.85)	32/33; 96.97 (84.24 - 99.92)	79/94; 84.04 (75.05 - 90.78)	0.87 ($P < 0.001$)
Expert 2 (n=135)						
CRM criteria	31/51; 60.78 (46.11 - 74.16)	25/84; 29.76 (20.27 - 40.73)	31/90; 34.44 (24.74 - 45.2)	25/45; 55.56 (40 - 70.36)	56/135; 41.48 (33.07 - 50.27)	0.45
Mendoza criteria	39/51; 76.47 (62.51 - 87.21)	17/84; 20.24 (12.25 - 30.41)	39/106; 36.79 (27.63 - 46.71)	17/29; 58.62 (38.94 - 76.48)	56/135; 41.48 (33.07 - 50.27)	0.48
AI	50/51; 98.04 (89.55 - 99.95)	57/84; 67.86 (56.78 - 77.64)	50/77; 64.94 (53.22 - 75.47)	57/58; 98.28 (90.76 - 99.96)	107/135; 79.26 (71.44 - 85.75)	0.82 ($P < 0.001$)
Expert 3 (n=136)						
CRM criteria	30/51; 58.82 (44.17 - 72.42)	34/85; 40 (29.52 - 51.2)	30/81; 37.04 (26.56 - 48.49)	34/55; 61.82 (47.73 - 74.59)	64/136; 47.06 (38.45 - 55.8)	0.45
Mendoza criteria	40/51; 78.43 (64.68 - 88.71)	13/85; 15.29 (8.4 - 24.73)	40/112; 35.71 (26.88 - 45.32)	13/24; 54.17 (32.82 - 74.45)	53/136; 38.97 (30.73 - 47.7)	0.50
AI	50/51; 98.04 (89.55 - 99.95)	58/85; 68.24 (57.24 - 77.92)	50/77; 64.94 (53.22 - 75.47)	58/59; 98.31 (90.91 - 99.96)	108/136; 79.41 (71.64 - 85.86)	0.82 ($P < 0.001$)
Expert 4 (n=136)						
CRM criteria	62/84; 73.81 (63.07 - 82.8)	16/52; 30.77 (18.72 - 45.1)	62/98; 63.27 (52.93 - 72.78)	16/38; 42.11 (26.31 - 59.18)	78/136; 57.35 (48.59 - 65.79)	0.56
Mendoza criteria	83/84; 98.81 (93.54 - 99.97)	1/52; 1.92 (0.05 - 10.26)	83/134; 61.94 (53.16 - 70.18)	1/2; 50 (1.26 - 98.74)	84/136; 61.76 (53.05 - 69.96)	0.56
AI	76/84; 90.48 (82.09 - 95.8)	39/52; 75 (61.05 - 85.97)	76/89; 85.39 (76.32 - 91.99)	39/47; 82.98 (69.19 - 92.35)	115/136; 84.56 (77.37 - 90.18)	0.84 ($P < 0.001$)

► **Fig. 1**

OP214 ARTIFICIAL INTELLIGENCE AND CAPSULE ENDOSCOPY: AUTOMATIC CLASSIFICATION OF SMALL BOWEL PREPARATION USING A CONVOLUTIONAL NEURAL NETWORK

Authors Ribeiro T.¹, Mascarenhas Saraiva M.J.¹, Afonso J.¹, Andrade P.¹, Cardoso H.¹, Ferreira J.², Mascarenhas Saraiva M.³, Macedo G.¹

Institutes 1 Centro Hospitalar Universitário de São João, Department of Gastroenterology, Porto, Portugal; 2 Faculdade de Engenharia da Universidade do Porto, Department of Mechanical Engineering, Porto, Portugal; 3 ManopH Gastroenterology Clinic, Porto, Portugal
DOI 10.1055/s-0042-1744777

Aims Capsule endoscopy (CE) allows non-invasive inspection of the small bowel. An adequate bowel preparation is crucial for a conclusive exam. The application of artificial intelligence (AI) algorithms to endoscopy has produced promising results. Convolutional neural networks (CNNs) are a highly efficient architecture designed for image analysis. To date, no AI-based model has been developed for evaluation of bowel preparation in CE. We aimed to develop a deep learning model for automatic classification of bowel preparation in CE.

Methods We developed a CNN-based on CE images. Each frame was labelled according to the quality of bowel preparation (excellent (E): $\geq 90\%$ of visible mucosa; satisfactory (S): 50-90 % of visible mucosa; unsatisfactory (U): $< 50\%$ of visible mucosa. A training dataset and a validation dataset, comprising 80 % and 20 % of the total pool of images, respectively, were constructed. The CNN's output was compared to the classification provided by the experts. The performance of the CNN was evaluated.

Results A total of 5070 images were included: 1570 labelled as E, 2150 as S and 1350 as U. The model had an overall accuracy of 94.3 %, a sensitivity of 93.6 %, a specificity of 93.1 %, a PPV of 92.6 % and NPV of 95.7 % for differentiation of classes of bowel preparation (Table 1). The AUC for E, S and U classes was 1.00, 0.96, 0.97, respectively.

► **Table 1**

	Expert classification			
		Excellent	Satisfactory	Unsatisfactory
Convolutional neural network classification	Excellent	311	9	2
	Satisfactory	3	397	61
	Unsatisfactory	0	24	207

Conclusions We developed a CNN-based model for automatic classification of bowel preparation in CE. The development of these automated systems may improve the reliability and reproducibility of bowel preparation scales in CE.

OP215 AUTOMATIC TEXTUAL DESCRIPTION OF COLORECTAL POLYP FEATURES: EXPLAINABLE ARTIFICIAL INTELLIGENCE BASED ON THE BASIC CLASSIFICATION

Authors Thijssen A.^{1,2}, Schreuder R.-M.³, Fonollà R.⁴, van der Zander Q.E.^{1,2}, Scheeve T.⁴, Subramaniam S.⁵, Bhandari P.⁵, de With P.H.⁴, Masclee A.A.¹, van der Sommen F.⁴, Schoon E.J.^{2,3}

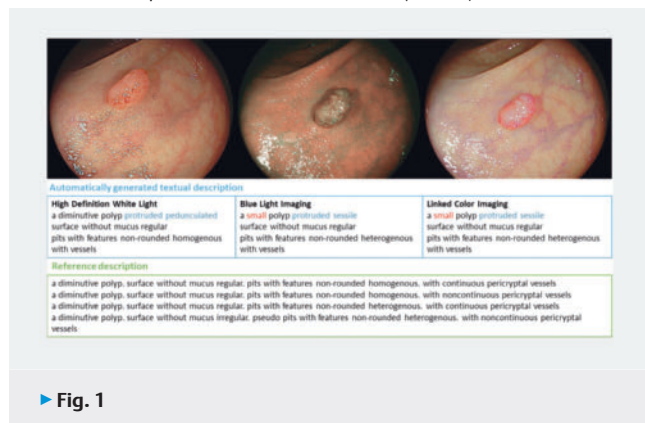
Institutes 1 Maastricht University Medical Center, Division of Gastroenterology and Hepatology, Maastricht, Netherlands; 2 Maastricht University, GROW School for Oncology and Developmental Biology, Maastricht, Netherlands

lands; 3 Catharina Hospital, Department of Gastroenterology and Hepatology, Eindhoven, Netherlands; 4 Eindhoven University of Technology, Department of Electrical Engineering, Eindhoven, Netherlands; 5 Portsmouth Hospitals University NHS Trust, Department of Gastroenterology, Portsmouth, United Kingdom
DOI 10.1055/s-0042-1744778

Aims Computer-aided diagnosis (CADx)-systems could improve optical diagnosis of colorectal polyps (CRPs) by endoscopists. For integration into clinical practice, better understanding of artificial intelligence (AI) is needed. A branch of deep learning and explainable AI is automatically generating textual descriptions from images to improve understanding. We aimed to develop a CADx-system generating automatic textual descriptions for CRPs based on Blue Light Imaging (BLI) Adenoma Serrated International Classification (BASIC)[1].

Methods Training data contained 35 hyperplastic polyps, 12 sessile serrated lesions (SSLs) and 48 adenomas, with 6525 corresponding textual descriptions by endoscopists. Testing data contained 15 hyperplastic polyps, three SSLs, 36 adenomas, and one colorectal carcinoma. Both databases consisted of High Definition White Light (HDWL), BLI, and Linked Color Imaging (LCI) images. CADx's 165 generated descriptions were compared to 1857 descriptions from nineteen endoscopists. References not matching histological diagnoses were excluded. The Recall Oriented Understudy for Gisting Evaluation Longest common subsequence (ROUGE-L) score measured the longest word segment in generated descriptions corresponding with reference descriptions.

Results A CADx-system generating automatic textual descriptions of CRP features was successfully developed (Figure 1). ROUGE-L scores (%) per category were: Complete sentence 83 %, BASIC descriptors 70 %, Morphology & size 89 %, Surface 92 %, Pit pattern 85 %, and Vessels 59 % (Table 1).



► Fig. 1

► Table 1

Category	ROUGE-L score (%)
Morphology & size	89
Surface	92
Pit pattern	85
Vessels	59

Conclusions This study demonstrates that a CADx-system for automatic textual description of CRPs is feasible and performed acceptably. Descriptions can help endoscopists comprehend reasoning behind CADx-diagnoses and therefore raise acceptance of CADx use in clinical practice. Especially the performance for vessel description needs improvement before implementation into clinical practice.

OP216 CHANGES IN EXAMINER BEHAVIOR CAUSED BY A COMPUTER-AIDED SYSTEM FOR POLYP DETECTION

Authors Troya J.¹, Fitting D.¹, Brand M.¹, Sudarevic B.¹, Kather J.N.², Meining A.¹, Hann A.¹

Institutes 1 University Hospital Würzburg, Interventional and Experimental Endoscopy (InExEn), Internal Medicine II, Würzburg, Germany; 2 University Hospital RWTH Aachen, Department of Medicine III, Aachen, Germany
DOI 10.1055/s-0042-1744779

Aims Multiple computer-aided systems for polyp detection (CAdE) are currently introduced into clinical practice, with an unclear effect on examiner behavior. In particular, false positive detections could lead to prolonged examination time due to frequent misinterpretations of normal mucosa. In this work, we aimed to measure the influence of a CAdE system on reaction time, mucosa misinterpretations, and changes in visual gaze pattern.

Methods Participants with different levels of colonoscopy experience were assigned to examine short video sequences while eye movement was tracked. Videos comprised 17 sequences containing polyps and 12 sequences containing false positive activations of different lengths. Using a crossover design, videos were presented in two assessments with and without CAdE (GI Genius, Medtronic) support. Reaction time for polyp detection, misinterpretation of normal mucosal surfaces, and eye-tracking metrics were evaluated.

Results 21 participants performed a total of 1218 experiments. The CAdE system was significantly faster in detecting polyps (1.16 sec) compared to the users ($p < 0.001$). However, the reaction time of the user with or without the CAdE system was similar (2.90 sec. vs 2.97 sec, $p = 0.678$). Participants falsely identified a polyp in a median of 4 cases without CAdE and 6 cases with CAdE support. Eye traveling distance was significantly reduced with the use of the CAdE system.

Conclusions This work confirms that CAdE systems detect polyps faster than humans. In addition, the CAdE system led to increased misinterpretations of normal mucosa and decreased eye travel distance. Possible consequences of these findings are prolonged examination time and deskilling.

OP217 TOWARDS AUTOMATIC DETECTION IN PANCREATIC EUS: AN ASSESSMENT OF DEEP LEARNING METHODS

Authors Sosa-Valencia L.¹, Fleurentin A.², Meyer A.², Montanelli J.², Mazelier J.-P.², Swanstrom L.², Gallix B.², Exarchakis G.², Padoy N.²

Institutes 1 IHU, EUS, Strasbourg, France; 2 IHU, Strasbourg, France
DOI 10.1055/s-0042-1744780

Aims Pancreatic cancer is rarely detected at its early stages, when it's curable, which leads to high mortality rates. Endoscopic ultrasound (EUS) is the best technique available nowadays to detect pancreatic cancer lesions smaller than 10 mm, which are amenable for surgical resection and potential cure. However, this procedure requires demanding technical skills to properly navigate and interpret the images obtained. This study assesses the potential of artificial intelligence to localize anatomical structures in such images to provide decision support to clinicians.

Methods We collected 44,758 frames with annotated region of interest of pancreas, echogenicity and solid or cystic lesions from 50 patients who had an EUS procedure in a tertiary referral French center from October 2018 to October 2021. Multiple Deep learning (DL) models were trained to localize annotated structures and evaluated following a 5-fold cross validation approach in a per-patient analysis.

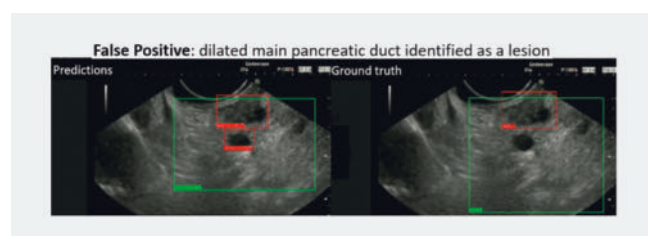
Results

► Table 1

**Benchmark –
Results Average Precision (IoU=0.5) mAP**

Models	Parameters	Parenchyma	Lesion	Global
RetinaNet	39.2M	48.28 ± 8.54	44.17 ± 9.12	46.29
Faster R-CNN	27.3M	44.98 ± 9.13	41.56 ± 8.91	43.23
Faster R-CNN + FPN	41.5M	51.15 ± 6.76	46.17 ± 4.43	50.20

Faster Region-CNN achieves the best results with a precision of 59.7%, a sensitivity of 60.3% and a f1-score of 59.7% on targeted objects while failure to detect a structure is limited to only 4% of the procedures.



► Fig. 1

Conclusions We validated the ability of DL based models to localize pancreatic parenchyma and lesions in EUS, with the potential to improve diagnosis in pancreatic cancer. Providing gastroenterologists with augmented EUS could lead to more accurate and easier diagnosis. This might help to increase survival rates by detecting early tumors plausible for surgical treatment, as well as properly identifying advanced lesions avoiding unnecessary surgeries and allowing the rapid setup of adjuvant treatments.

OP218 AUTOMATED MEASUREMENT OF COLONOSCOPY WITHDRAWAL TIME USING CONVOLUTIONAL NEURAL NETWORKS

Authors Kader R.^{1,2,3}, Carvalho T.d.^{2,4}, Oh Ga Y.^{1,2}, Brandao P.⁴, Leung S.-P.^{1,2}, Toth D.⁴, Vega R.^{2,3}, Seward E.^{2,3}, Mountney P.⁴, Stoyanov D.^{1,2}, Lovat L.B.^{1,2,3}

Institutes 1 University College London (UCL), Wellcome/EPSCRC Centre for Interventional and Surgical Sciences (WEISS), London, United Kingdom; 2 UCL, Division of Surgery and Interventional Sciences, London, United Kingdom; 3 University College London Hospital, London, United Kingdom; 4 Odin Vision, London, United Kingdom

DOI 10.1055/s-0042-1744781

Aims Withdrawal time (WT) is defined as the time taken from reaching the caecum to exiting the anal canal minus time spent cleaning and performing interventions. Recent years has demonstrated the potential of artificial intelligence (AI) to detect caecal landmarks, however, its ability to detect phases of withdrawal is unexplored.

We aimed to develop convolutional neural networks (CNN) to detect cleaning and interventional phases of withdrawal.

Methods Endoscopy videos were collected prospectively. After the appendicular orifice or ileocaecal valve were first detected, individual frames were annotated with image-level labels.

The first frame an instrument was visualised during polypectomy up until the end of inspecting post-resection margins and biopsies was labelled as 'intervention'. Frames during suctioning of colonic content or washing were labelled as 'cleaning'. The remaining frames were labelled 'withdrawal' frames.

Two ResNet-101 CNNs pre-trained on ImageNet were developed to detect the phases of cleaning and intervention.

Results 87 endoscopy videos and 1,288,319 frames during withdrawal were annotated (Table 1). The procedures were split into training (70%), validation (10%) and testing (~20%) with no overlap of patients.

Evaluated against a test-set of 17 videos, the CNNs identified the interventional frames with 92.4% sensitivity and 95.8% specificity. For cleaning, the sensitivity was 83.0% and specificity 89.5%.

The mean WT was 8:51 (minutes:seconds). The absolute mean error of the AI predicted WT was 39 seconds per procedure. The CNNs correctly categorised 16/17 procedures (94%) as below or above 6 minutes.

► Table 1

	Withdrawal frames	Cleaning frames	Intervention frames	Total frames
Frame count	437,359	232,384	618,576	1,288,319

Conclusions We demonstrated the feasibility of CNNs to differentiate the phases of withdrawal to measure WT.

Barrett's Related neoplasia: is endoscopy the cure?

Saturday, 30 April 2022

10:00–11:00

Club A

OP219 ENDOSCOPIC FOLLOW-UP OF RADICALLY RESECTED SUBMUCOSAL ADENOCARCINOMA IN BARRETT'S ESOPHAGUS: EARLY RESULTS OF AN ONGOING PROSPECTIVE, INTERNATIONAL, MULTI-CENTER COHORT REGISTRY (PREFER TRIAL)

Authors Chan M.W.¹, Nieuwenhuis E.A.¹, Jansen M.², Belghazi K.¹, Nagengast W.B.³, Westerhof J.³, Koch A.D.⁴, Spaander M.D.W.⁴, Bisschops R.⁵, De Hertogh G.⁶, Bourke M.J.⁷, Neuhaus H.⁸, Weusten B.L.A.M.^{9,10}, Alkhalaf A.¹¹, Pech O.¹², Schlag C.¹³, Seewald S.¹⁴, Houben M.H.M.G.¹⁵, Schoon E.J.¹⁶, Coron E.¹⁷, Haidry R.¹⁸, Messmann H.¹⁹, Meijer S.L.²⁰, Bergman J.J.G.H.M.¹, Pouw R.E.¹

Institutes 1 Amsterdam University Medical Centers, Gastroenterology and Hepatology, Amsterdam, Netherlands; 2 University College London Hospital NHS Trust, Histopathology, London, United Kingdom; 3 University Medical Center Groningen, Gastroenterology and Hepatology, Groningen, Netherlands; 4 Erasmus MC Cancer Institute, University Medical Center, Gastroenterology and Hepatology, Rotterdam, Netherlands; 5 University Hospitals Leuven, Gastroenterology and Hepatology, Leuven, Belgium; 6 University Hospitals Leuven, Pathology, Leuven, Belgium; 7 Westmead Hospital, Gastroenterology and Hepatology, Sydney, Australia; 8 Evangelisches Krankenhaus Düsseldorf, General Internal Medicine and Gastroenterology, Düsseldorf, Germany; 9 Sint Antonius Hospital, Gastroenterology and Hepatology, Nieuwegein, Netherlands; 10 University Medical Center, Utrecht University, Gastroenterology and Hepatology, Utrecht, Netherlands; 11 Isala Clinics, Gastroenterology and Hepatology, Zwolle, Netherlands; 12 St John of God Hospital, Gastroenterology, Regensburg, Germany; 13 Technical University of Munich, II, Klinikum rechts der Isar der, München, Germany; 14 Klinik Hirslanden, GastroZentrum, Zurich, Switzerland; 15 Haga Teaching Hospital, Gastroenterology and Hepatology,

Den Haag, Netherlands; 16 Catharina Hospital, Gastroenterology and Hepatology, Eindhoven, Netherlands; 17 Nantes University Hospital, Endoscopy and Gastroenterology, Nantes, France; 18 University College Hospital NHS Trust, Gastroenterology and Hepatology, London, United Kingdom; 19 University Hospital Augsburg, Gastroenterology, Augsburg, Germany; 20 Amsterdam University Medical Centers, Histopathology, Amsterdam, Netherlands

DOI 10.1055/s-0042-1744782

Aims Endoscopic follow-up (FU) may be a valid alternative for patients with submucosal esophageal adenocarcinoma (T1b EAC) We aim to evaluate the safety of a watchful waiting strategy in patients treated endoscopically for T1b EAC.

Methods This international, multicenter, prospective study aims to include 141 patients (T1b EAC R0 N0M0) with 5-year FU. Patients undergo gastroscopy and EUS every 3 months (year 1 and 2), then every 6 months (year 3 and 4) and annually thereafter. The cohort was divided into high-risk (invasion $\geq 500\mu\text{m}$, G3-4 and/or LVI+) and low-risk (<500 μm , G1-2 and LVI-). Outcome parameters: 5-year disease specific survival, overall survival, rate of lymph node metastasis (LNM) and local recurrence.

Results 50 high-risk and 29 low-risk patients (66 men, median 70yo) were included (median FU 19 (IQR 11-30) months). Three patients (4% [95%CI 0-8.1]) developed LNM: 2/50 high-risk (4% [95%CI 0-9.6]) and 1/29 low-risk (4% [95%CI 0-10.5]). Two patients underwent neoadjuvant chemo(radio)therapy with esophagectomy (ypT0N0M0 and ypT0N1M0). One patient underwent selective surgical LN resection. Four patients (5% [95%CI 0-10.0]) developed an intra-luminal recurrence not amenable to endoscopic re-treatment: 3/50 high-risk (6% [95%CI 0-12.8]) and 1/29 low-risk (4% [95%CI 0-10.5]). Two patients underwent esophagectomy (pT1bN0M0 and pTisN0M0). Two patients refused treatment. No distant metastases were diagnosed. Two patients died (not EAC-related). One patient discontinued FU (old age).

► Table 1

N = 79	FU (months), Median (IQR)	Lymph node metastasis, N (%) [95%CI]	Intra-luminal tumor recurrence*, N (%) [95%CI]	Distant metastasis, N (%)
High-risk T1b (N = 50)	19 (11-29)	2 (4.0% [0-9.6%])	3 (6.0% [0-12.8%])	0
Low-risk T1b (N = 29)	20 (11-30)	1 (3.5% [0-10.5%])	1 (3.5% [0-10.5%])	0

Conclusions Early data suggest that after radical endoscopic resection of T1b EAC, a strict endoscopic FU protocol is feasible and curative surgery remains possible in case of LNM (4%) or local recurrence (5%) during FU.

OP220 ALL-CAUSE MORTALITY AFTER SUCCESSFUL ENDOSCOPIC ERADICATION THERAPY FOR BARRETT'S RELATED NEOPLASIA IN A NATIONWIDE COHORT OF 1154 PATIENTS

Authors Verheij E.P.D.¹, van Munster S.N.¹, Nieuwenhuis E.A.², Cotton C.C.³, Weusten B.L.A.M.^{4,2}, Alvarez Herrero L.², Alkhalaf A.⁵, Schenk B.E.⁵, Schoon E.J.⁶, Curvers W.⁶, Koch A.D.⁷, de Jonge P.J.F.⁷, Tang T.J.⁸, Nagengast W.B.⁹, Westerhof J.⁹, Houben M.H.M.G.¹⁰, Shaheen N.J.³, Bergman J.J.G.H.M.¹, Pouw R.E.¹

Institutes 1 Amsterdam University Medical Centers, Gastroenterology and Hepatology, Amsterdam, Netherlands; 2 St. Antonius Hospital, Gastroenterology and Hepatology, Nieuwegein, Netherlands; 3 University of North Carolina, Gastroenterology and Hepatology, Chapel Hill, United States;

4 University Medical Center, Utrecht University, Gastroenterology and Hepatology, Utrecht, Netherlands; 5 Isala Clinics, Gastroenterology and Hepatology, Zwolle, Netherlands; 6 Catharina Hospital, Gastroenterology and Hepatology, Eindhoven, Netherlands; 7 Erasmus University Medical Center, Gastroenterology and Hepatology, Rotterdam, Netherlands; 8 IJsselland Hospital, Gastroenterology and Hepatology, Capelle aan den IJssel, Netherlands; 9 University Medical Center Groningen, University of Groningen, Gastroenterology and Hepatology, Groningen, Netherlands; 10 Haga hospital, Gastroenterology and Hepatology, Den Haag, Netherlands DOI 10.1055/s-0042-1744783

Aims Follow-up after successful endoscopic eradication therapy (EET) for Barrett's neoplasia is strict. Post-EET recurrence detection rates per endoscopy are low and follow-up may be too aggressive. Furthermore, data on competing causes of mortality are not considered. We aimed to evaluate all-cause mortality after successful EET.

Methods In the Netherlands, EET is centralized in 9 expert centers, with a standardized treatment/follow-up protocol. We included all patients with complete eradication (CE-BE) after EET from 2008-2018 (van Munster et al., Gut, 2021). Data were merged with Statistics Netherlands for survival outcomes. Vital follow-up: time between end of treatment and death or data collection. Primary outcome was annual incidence rate (AIR) for other-cause mortality after EET.

Results In total, 1,154 patients (mean age 64 (SD 9)) achieved CE-BE. During median 49 months of vital follow-up (IQR 26-72), 95/1154 patients (8%) died median 40 months (IQR 16-59) after EET. The AIR for all-cause mortality was 15.0 per 1000 person years [95%CI 12-18]. In total, 92/95 (97%) patients died of causes other than esophageal cancer (AIR unrelated mortality 14.5 per 1000 person-years [95%CI 11-18]). Most common causes of death: other cancer (n = 35, 38%), cardiovascular disease (n = 24, 26%) and pulmonary disease (n = 13, 14%). Remaining 3/95 patients (3%) died of recurrent esophageal cancer (AIR 0.5 per 1000 person years [95%CI 0.4-0.5]), median 48 months (range 28-61) after EET.

Conclusions After successful EET, the risk of dying from causes other than EAC was 30 times higher than the risk of dying from recurrent EAC. The value of aggressive post-EET surveillance is likely overstated.

OP221 FOCAL CRYOBALLOON ABLATION WITH 8SEC DOSE HAS SIMILAR EFFICACY AS 10SEC FOR TREATMENT OF BARRETT'S ESOPHAGUS RELATED NEOPLASIA

Authors Frederiks C.N.^{1,2}, Overwater A.^{1,2}, Alvarez Herrero L.¹, Alkhalaf A.³, Schenk B.E.³, Repici A.⁴, Bergman J.J.⁵, Pouw R.E.⁵, Bisschops R.⁶, Haidry R.J.⁷, Beyna T.⁸, Neuhaus H.⁸, Weusten B.L.A.M.^{1,2}

Institutes 1 St. Antonius Hospital, Gastroenterology and Hepatology, Nieuwegein, Netherlands; 2 University Medical Center Utrecht, Gastroenterology and Hepatology, Utrecht, Netherlands; 3 Isala Hospital, Gastroenterology and Hepatology, Zwolle, Netherlands; 4 Humanitas Research Hospital, Gastroenterology and Hepatology, Milan, Italy; 5 Amsterdam University Medical Center, Gastroenterology and Hepatology, Amsterdam, Netherlands; 6 University Hospital Leuven, Gastroenterology and Hepatology, Leuven, Belgium; 7 University College London Hospitals, Gastroenterology and Hepatology, London, United Kingdom; 8 Evangelical Hospital Dusseldorf, Gastroenterology and Hepatology, Dusseldorf, Germany DOI 10.1055/s-0042-1744784

Aims Focal cryoballoon ablation (FCBA) is currently investigated for treatment of Barrett's esophagus (BE) related neoplasia in a European multicenter study (Euro-Coldplay; NTR NL7253). After inclusion of 28/107 patients, the initial dose of 10sec was lowered to 8sec. In this current study, we compared the efficacy and safety of single FCBA treatment with 10sec versus 8sec in patients with limited BE ($C \leq 2/M \leq 5$).

Methods All 28 patients treated with 10sec were compared with the first 28 patients treated with 8sec. Treatments were performed by trained endoscopists in 7 Barrett referral centers. The gastroesophageal junction was ablated cir-

cumferentially followed by all visible BE. To assess efficacy after a single FCBA, three expert adjudicators, blinded for treating physician and dosages, compared pre- and post-treatment images. Outcomes included median BE surface regression and stricture rate.

Results We included 56 patients (10sec n = 28, 8sec n = 28) with a median BE of C0M2 and comparable baseline characteristics. FCBA was technically successful in 27/28 (96%) patients for both cohorts. The median BE surface regression was comparable for 10sec and 8sec (80% [95%CI 75-90] and 80% [95%CI 66-90], respectively; $p = 0.65$). Strictures requiring dilation were seen in 19% [95%CI 4-33] and 15% [95%CI 4-30] of the 10sec and 8sec group respectively ($p = 1.00$). Two patients among the 10sec group developed a severe stricture requiring > 3 dilations.

► **Table 1** Per-protocol analysis of primary outcomes after single FCBA treatment.

	10sec (n = 27)	8sec (n = 27)	P-value ¹
Median BE surface regression ² , % (p25-p75)	80 (75-92)	80 (59-92)	0.65
Stricture requiring dilation, n (%)	5 (19)	4 (15)	1.00
Severe stricture requiring > 3 dilations, n (%)	2 (7)	0 (0)	0.44
Number of dilations, median (range)	1 (1-8)	2 (1-3)	0.78

¹For Mann-Whitney U test, Chi-squared test or Fisher's exact test.

²Not assessable in one patient (8sec) due to missing pre-treatment images.

Conclusions In limited BE, single-session FCBA with 8sec has shown similar efficacy as compared to 10sec, and may theoretically result in less and less severe strictures. Therefore, further study into using 8sec dosing is recommended.

OP222 THE COURSE OF PAIN AND DYSPHAGIA AFTER RADIOFREQUENCY ABLATION FOR BARRETT'S ESOPHAGUS RELATED NEOPLASIA

Authors Overwater A.^{1,2}, Schoon E.³, Pouw R.E.⁴, Bergman J.J.⁴, Elias S.G.⁵, Weusten B.L.^{1,2}

Institutes 1 St. Antonius Hospital, Gastroenterology and Hepatology, Nieuwegein, Netherlands; 2 University Medical Center Utrecht, Gastroenterology and Hepatology, Utrecht, Netherlands; 3 Catharina Hospital, Gastroenterology and Hepatology, Eindhoven, Netherlands; 4 Amsterdam University Medical Centers, Gastroenterology and Hepatology, Amsterdam, Netherlands; 5 University Medical Center Utrecht, Julius Center for Health Sciences and Primary Care, Utrecht, Netherlands
DOI 10.1055/s-0042-1744785

Aims Radiofrequency ablation (RFA) is an effective treatment for eradication of Barrett's esophagus (BE) related neoplasia, but little is known on the course of pain and dysphagia after RFA. The aim of this study was to describe the course of post-RFA symptoms and to identify possible risk factors thereof.

Methods In this multicenter, observational cohort study, all RFA procedures registered in a prospective database on patient tolerability of endoscopic treatment for BE neoplasia were included. Patient and treatment characteristics were collected from medical records and patients self-registered post-procedural symptoms in electronic symptom diaries for 14 days after RFA. Outcome parameters were pain (score ranging from 0-10), major pain (pain score of 4 or higher), and dysphagia (present/absent). Mixed model regression was used for the analyses.

Results In total, 255 diaries were filled out. Post-RFA pain was reported for 95% (95%-CI 93-98) of procedures (median duration 14 days; p25-p75 11-14) and major pain for 64% (95%-CI 58-69; median duration 8 days; p25-p75 3-13). Post-procedural pain significantly increased with BE segment length, younger age, and if no prior ablation was performed. Age, BE segment length, sex, prior ablation and RFA device type all resulted in a different course of pain. Dysphagia was present after 83% (95%-CI 79-88) of RFA procedures (median duration 13 days; p25-p75 9-14). The risk of dysphagia decreased with age and increased when patients experienced more pain.

Conclusions RFA treatment for BE neoplasia is a significant burden for patients and post-procedural symptoms should be taken into account when counseling patients on endoscopic eradication therapy.

OP224V CIRCUMFERENTIAL ENDOSCOPIC SUBMUCOSAL DISSECTION FOR REFRACTORY DYSPLASTIC BARRETT'S ESOPHAGUS AFTER MUCOSAL RESECTIONS AND RADIOFREQUENCY ABLATION – A SALVAGE AND DEFINITIVE TREATMENT APPROACH?

Authors O'Neill C.¹, Barreiro P.^{1,2}, Mendo R.¹, Mascarenhas A.¹, Franco A.R.¹, Félix C.¹, Pinto D.³, Castela J.⁴, Chagas C.¹

Institutes 1 Centro Hospitalar Lisboa Ocidental, Gastroenterology Department, Lisbon, Portugal; 2 Hospital Lusíadas de Lisboa, Gastroenterology Department, Lisbon, Portugal; 3 Centro Hospitalar Lisboa Ocidental, Pathology Department, Lisbon, Portugal; 4 IPO – Instituto Português de Oncologia de Lisboa, Gastroenterology Department, Lisbon, Portugal
DOI 10.1055/s-0042-1744787

77-year-old woman with C5M6 Barrett's esophagus (BE) and progressive high grade dysplasia (HGD) visible lesions despite sequential endoscopic mucosal resection procedures and radiofrequency ablation of the remaining BE. The patient was referred to our department for endoscopic submucosal dissection (ESD). Regardless of extensive scarring and submucosal fibrosis from previous procedures, en-bloc circumferential excision of a 6cm-length segment encompassing all the dysplastic lesions was successfully achieved. Histological showed extensive HGD, completely resected.

ESD as salvage therapy for BE-related dysplasia or neoplasia is feasible for achieving en-bloc and R0 resection for larger or poorly lifting lesions because of scarring, with an acceptable safety profile.

Decision making and performing ESD for colorectal lesions
Saturday, 30 April 2022

10:00–11:00
Club E

OP225 OUTCOMES AND PREDICTIVE FACTORS OF SUBMUCOSAL FIBROSIS IN COLORECTAL ENDOSCOPIC SUBMUCOSAL DISSECTION: A PROSPECTIVE INTERNATIONAL STUDY

Authors Sferrazza S.¹, Crispino F.², Motohiko K.³, Yoshiyuki K.³, Santos-An-tunes J.⁴, Tasini E.¹, Michielan A.¹, de Pretis G.¹, Frazzoni L.⁵, Fuccio L.⁵

Institutes 1 Gastroenterology and Endoscopy Unit, Santa Chiara Hospital, APSS, Trento, Italy; 2 Gastroenterology & Hepatology Section, PROMISE, University of Palermo, Italy; 3 Division of Research and Development for Minimally Invasive Treatment, Cancer Center, School of Medicine, Keio University, Tokyo, Japan; 4 Gastroenterology Department, Faculty of Medicine, Centro Hospitalar de São João, Porto, Portugal; 5 Gastroenterology Unit, Department of Medical and Surgical Sciences, S.Orsola-Malpighi University Hospital, University of Bologna, Bologna, Italy
DOI 10.1055/s-0042-1744788

Aims Endoscopic submucosal dissection (ESD) enables en-bloc resection of large colorectal lesions. Submucosal fibrosis is a major feature for technical

difficulty and poor outcomes. The aims of our study were: (1) to assess ESD outcomes according to the degree of fibrosis, and (2) to identify the predictive factors of fibrosis in colorectal lesions undergoing ESD.

Methods We prospectively enrolled all consecutive patients undergoing colorectal ESD between 2019 and 2021 in three Asian and Western tertiary referral centers. The degree of submucosal fibrosis was classified as absent (F0), mild (F1), and severe (F2). Logistic regression analysis was used to assess both ESD outcomes and predictive factors of fibrosis.

Results 309 patients were included. The incidence of fibrosis was 36.5 % (F1: 23 %; F2: 14 %). The duration of ESD and the rate of R0 resection were significantly associated with the degree of fibrosis ($p < 0.001$; $p < 0.001$). The rate of complications was more frequent among F1-F2 lesions, though the result was not significant ($p = 0.164$). Lesion size ≥ 40 mm (OR 2.35, CI 1.39-3.98), morphology (OR 3.54, CI 1.28-9.77 for 0-Is vs. LST-G) and site (OR 2.47, CI 1.25-4.86 for rectum vs. proximal colon) were associated with increasing degree of submucosal fibrosis.

Conclusions Lesions size, morphology and location are predictive factors for the increasing degree of submucosal fibrosis, which is associated with non-curative resection and long procedural time. Such results may pave the way to a more rational resource allocation for ESD.

OP226V CLIP WITH RUBBER BAND MODIFICATION FOR DYNAMIC TRACTION IN COLONIC ENDOSCOPIC SUBMUCOSAL DISSECTION (ESD)

Authors Alves da Silva J.L.¹, Falcão D.¹, Ponte S.¹, Marcos-Pinto R.¹, Pedroto I.¹, Küttner-Magalhães R.¹

Institute 1 Centro Hospitalar Universitário do Porto, Porto, Portugal
DOI 10.1055/s-0042-1744789

63-year-old-woman referred to ESD due to 40-mm-laterally-spreading-tumor, nongranular, Paris 0-Is + IIa, JNET-type-2B, consistent with residual lesion from previous resection, with tattoo adjacent, in the descending colon. Partial mucosal incision was done. Inadequate submucosal layer exposure was noted despite pocket-creation method and underwater strategy. After complete circumferential incision, a clip grasping a rubber-band with 3nylon rings (hand-made with fishing line) attached, was applied to the lesion. One nylon ring was grasped, secured to the opposite wall, and then cut with a loop cutter after ESD. Another clip grasping a remaining ring was applied in a different location in the colonic wall, readjusting traction.

OP227 ENDOSCOPIC SUBMUCOSAL DISSECTION OR PIECEMEAL ENDOSCOPIC MUCOSAL RESECTION FOR LARGE SUPERFICIAL COLORECTAL LESIONS: COST-EFFECTIVENESS IN THE ERA OF SYSTEMATIC COUNTERTRACTION

Authors Scheer S.¹, Wallenhorst T.², Albouys J.³, Olivier R.¹, Dahan M.³, Pauliat E.³, Leclerc E.², Denost Q.⁴, Geyl S.³, Brischoux S.³, Lepetit H.³, Gschwind G.⁵, Legros R.³, Pioche M.⁶, Jacques J.³

Institutes 1 University Hospital of Poitiers, Gastroenterology, Poitiers, France; 2 University Hospital of Rennes, Gastroenterology, Rennes, France; 3 University Hospital of Limoges, Gastroenterology, Limoges, France; 4 University Hospital of Bordeaux, Haut Leveque, Colorectal and Pelvic Surgery, Pessac, France; 5 University Hospital of Limoges, Gastroenterology, Limoges, France; 6 Hôpital Edouard Herriot, Hospices Civils de Lyon, Gastroenterology, Lyon, France
DOI 10.1055/s-0042-1744790

Aims Endoscopic management is preferred to surgical management for large superficial colorectal lesions. However, the optimal endoscopic resection strategy for large superficial colorectal lesions (piecemeal endoscopic mucosal resection [pEMR] or endoscopic submucosal dissection [ESD]) is debated in particular from an economical point of view.

Methods A model was created to compare the cost-effectiveness of ESD and pEMR according to optical diagnosis (Japan NBI Expert Team [JNET], laterally spreading tumour [LST], CONECCT). We distinguished three groups from the same multicentre ESD cohort and compared the medical and economic outcomes: real-life ESD data (U-ESD) compared to modelled selective ESD (S-ESD JNET; S-ESD LST; S-ESD CONECCT) and exclusive pEMR strategies (U-EMR).

Results The en-bloc, R0, and curative resection rates were 97.5 %, 86.5 %, and 82.6 %, respectively in the real life ESD cohort of 833 colorectal lesions. U-ESD was the least-expensive strategy, with a total cost of management of 2,858,048.17 €, i.e. 3,431.03 €/patient and was also the most effective strategy because it avoided 774 surgeries, which was more than any other strategy. It outperformed S-ESD CONECCT (total cost of management = 2,951,411.44 €, and 3,543.11 €/patient, 765 surgeries avoided), S-ESD LST (total cost of management = 3,055,951.53 €, and 3,668.61 €/patient, 749 surgeries avoided), and S-ESD JNET (total cost of management = 3,547,426.97 € and 4,258.62 €/patient, 704 surgeries avoided) and U-EMR (total cost of management = 4,060,547.62 € and 4,874.61 €/patient, 620 surgeries avoided).

Conclusions In the era of clip-and-rubber-band countertraction, ESD for all large LSTs is more cost-effective than pEMR and S-ESD.

OP228 ESD RESECTION OF COLRECTAL PEDUNCULATED POLYPS: FIRST RESULTS

Authors Jakobs J.¹, Stathopoulos P.¹, Zumblick M.¹, Denkert C.², Denzer U.¹

Institutes 1 University Hospital Marburg, Department of endoscopy, Marburg, Germany; 2 University Hospital Marburg, Institut of pathology, Marburg, Germany
DOI 10.1055/s-0042-1744791

Aims Endoscopic conventional resection of pedunculated polyps is technically difficult in cases of large polyp and/or broad stalk. In particular, en bloc resection with conventional snare resection can be challenging in these cases. We evaluated the feasibility of ESD for large pedunculated polyps with wide stalks.

Methods In the period between 02- 2019 and 11- 2021 patients with large pedunculated polyps assessed difficult or not conventionally resectable by snare polypectomy were enrolled in the study. All polyps were resected in ESD technique with dissection of the polyp stalk at the base after injection. Bleeding vessels were coagulated using the ESD knife or a coagulation forceps.

Results 21 patients (male = 14, 65.8y mean) were included. En bloc and R0 resection was achieved in 100 % (21/21) of polyps. Polyps were mainly located in the sigmoid (n = 16), rectum (n = 2) and one each in the ascending and descending colon. Mean size of polyps was 33.4 x 27.2 mm. Histologic examination revealed the following results: Adenoma LG-IN: 7; HG-IN 6, pTis: 2, Adenocarcinoma: 4 (G1,pT1m,L0,V0 – G2, pT1(SM1) L0,V0 – G1,pT1(SM1)L0,V0 – G3,pT1(SM2),Bd3, V1); Other:1. The curative resection rate yielded 95.2 % (20/21) without severe complications.

Conclusions ESD achieves a high en bloc resection rate of large pedunculated polyps with wide stalks. This is particularly advantageous in the case of malignant polyps with regard to complete resection and subsequent risk classification.

OP230 SETTING UP A REGIONAL EXPERT PANEL FOR COMPLEX COLORECTAL POLYPS

Authors Zwager L.W.¹, Bastiaansen B.A.¹, Dekker E.¹, Fockens P.¹

Institute 1 Amsterdam University Medical Centers, Gastroenterology & Hepatology, Amsterdam, Netherlands
DOI 10.1055/s-0042-1744793

Aims Advanced endoscopic resection techniques for complex colorectal polyps have evolved significantly over the past decade, leading to a management shift from surgical to endoscopic resection as the preferred treatment. However in practice, interhospital consultation and access to the required expertise for appropriate referral management remain challenging and under-used. In order to support regional care for patients with complex colorectal polyps, facilitate peer consultations and lower thresholds for referrals, an expert

panel consultation platform was initiated in the northwestern region of the Netherlands.

Methods We initiated a regional expert panel in the northwestern region of the Netherlands for patients with complex colorectal polyps and studied the implementation, adaption and clinical impact. All panel consultations between June 2019 and May 2021 were analyzed and user satisfaction among panel members was evaluated.

Results Eighty-eight patients with complex colorectal polyps from eleven of fifteen participating centers (73.3%) were discussed in our panel. The most common reason for panel consultation was suspicion of invasive cancer in 36.4% (n=32). After panel consultation, 43.2% (n=38) of the consulting endoscopists changed their initial treatment strategy, and in 63.6% (n=56) patients were referred to another endoscopy center. Of 26 cases submitted with a primary proposal for surgical treatment, surgery was avoided in seven (26.9%). User satisfaction was rated high in majority of participating centers (91.7%).

Conclusions Our study shows that implementation and consultation of a regional expert panel can be a valuable tool to guide and optimize treatment of complex colorectal polyps and facilitate interhospital referrals in a regional network.

**Diagnostic challenges in the liver,
bile duct and pancreas**
Saturday, 30 April 2022

10:00–11:00
Club H

OP231 COMPARISON BETWEEN ENDOSCOPIC ULTRASOUND-GUIDED FINE-NEEDLE BIOPSY AND BITE-ON-BITE JUMBO BIOPSY FOR SAMPLING OF SUBEPITHELIAL LESIONS

Authors Facciorusso A.^{1,2}, Crinò S.F.², Ramai D.³, Ofosu A.⁴, Muscatiello N.¹, Mangiavillano B.⁵, Lamonaca L.⁵, Lisotti A.⁶, Fusaroli P.⁶, Gkolfakis P.⁷, Stasi E.⁸, Samanta J.⁹, Dhar J.⁹, Cotsoglou C.¹⁰, Londoño Castillo J.¹¹, Antonini F.¹²

Institutes 1 University of Foggia, Gastroenterology Unit, Department of Surgical and Medical Sciences, Foggia, Italy; 2 The Pancreas Institute, University Hospital of Verona, Department of Medicine, Gastroenterology and Digestive Endoscopy Unit, Verona, Italy; 3 University of Utah Health, Salt Lake City, United States; 4 University of Cincinnati, Division of Digestive Diseases, Cincinnati, United States; 5 Humanitas – Mater Domini, Gastrointestinal Endoscopy Unit, Castellanza, Italy; 6 Hospital of Imola, Gastroenterology Unit, Imola, Italy; 7 Erasme University Hospital, Department of Gastroenterology, Hepatopancreatology and Digestive Oncology, Brussels, Belgium; 8 'Vito Fazzi' Hospital, Gastroenterology and Digestive Endoscopy, Lecce, Italy; 9 Post Graduate Institute of Medical Education and Research, Department of Gastroenterology, Chandigarh, India; 10 ASST-Vimercate, General Surgery Department, Vimercate, Italy; 11 University Ces, Gastroenterology Unit, Medellín, Colombia; 12 Marche Polytechnic University, A. Murri Hospital, Gastroenterology and Endoscopy Unit, Fermo, Italy

DOI 10.1055/s-0042-1744794

Aims A direct comparison between endoscopic ultrasound (EUS) fine-needle biopsy (FNB) and current endoscopic biopsy techniques in patients with subepithelial lesions (SELs) is still lacking. Aim of this multicenter study was to compare the diagnostic performance and safety profile between EUS-FNB and bite-on-bite jumbo biopsy.

Methods Out of 416 patients undergoing endoscopic sampling of SELs between 2017 and 2021, after propensity score matching two groups were compared: 120 undergoing EUS-FNB and 120 sampled with bite-on-bite jumbo biopsy. Primary outcome was sample adequacy. Secondary outcomes were diagnostic accuracy, sensitivity, specificity, and adverse events.

Results Median age was 61 years and most patients were male in both groups. Final diagnosis was GIST in 65 patients (54.1%) in the EUS-FNB group and 62 patients in the bite-on-bite biopsy group (51.6%; p=0.37). Sample adequacy was significantly higher in the EUS-FNB group as compared to the bite-on-bite

biopsy group (94.1% versus 77.5%, p<0.001). EUS-FNB outperformed bite-on-bite biopsy also in terms of diagnostic accuracy (89.3% versus 67.1%, p<0.001) and sensitivity (89% vs 64.5%; p<0.001), whereas specificity was 100% in both groups (p=0.89). These findings were confirmed in subgroup analysis according to SEL location, final diagnosis, and wall layers of the sampled SEL. Adverse event rate was 6.6% in the EUS-FNB group and 30% in the bite-on-bite biopsy group (p<0.001).

Conclusions EUS-FNB outperforms bite-on-bite biopsy both in terms of diagnostic yield and safety profile.

OP232 EUS-GUIDED LIVER BIOPSY SCORES OVER RADIOLOGY GUIDED PERCUTANEOUS LIVER BIOPSY: A MULTICENTER RANDOMISED CONTROLLED TRIAL

Authors Samanta J.¹, Chavan R.², Gupta P.³, Chalamarla L.⁴, Dhar J.¹, Choudhury A.¹, Panda I.⁵, Mitra S.⁵, Sekharan A.⁶, Das A.⁵, Muktesh G.¹, Sayyed M.¹, Nabi Z.², Basha J.², Yeralagada R.², Gupta R.², Singh J.⁴, Lakhtakia S.², Kochhar R.¹, Reddy D.N.²

Institutes 1 Postgraduate Institute of Medical and Research, Gastroenterology, Chandigarh, India; 2 Asian Institute of Gastroenterology, Gastroenterology, Hyderabad, India; 3 Postgraduate Institute of Medical and Research, Radiology, Chandigarh, India; 4 Asian Institute of Gastroenterology, Radiology, Hyderabad, India; 5 Postgraduate Institute of Medical and Research, Pathology, Chandigarh, India; 6 Asian Institute of Gastroenterology, Pathology, Hyderabad, India

DOI 10.1055/s-0042-1744795

Aims Liver biopsy can be performed by the traditional percutaneous radiology guided route (PC-LB) or under endoscopic ultrasound guidance (EUS-LB) and limited data exist on the comparison between the two and hence this study was planned.

Methods This is a parallel-group, single-blinded, randomized controlled trial conducted at two tertiary care centers in India from July 2020–August 2021. Consecutive patients requiring liver biopsy were randomized into either the EUS-LB or the PC-LB arm. Aggregate specimen length, longest specimen length, number of complete portal tracts (CPTs), and diagnostic adequacy were assessed. Post-procedure pain was measured using the visual analog scale (VAS) at 1, 4, and 24 hrs post-procedure.

Results A total of 48 patients (30 males; 62.5% with a mean age of 37.25 ± 12.7 years) were randomized into EUS-LB (n=24) and PC-LB (n=24). EUS-LB yielded significantly greater aggregate specimen length (33.5 vs 15.0 mm; p<0.0001) and a higher number of CPTs (17.5 vs. 7.5; p<0.001). The longest length of the specimen was noted in PC-LB arm (10.5 vs. 8.0; p=0.04). Diagnostic adequacy was similar between the two arms. The most common post-procedure side effect was pain. Pain was noted in higher proportion in PC-LB arm (87.5% vs. 16.7%; p<0.001) and had higher analgesic requirement (41.7% vs 4.2%; p=0.004). VAS score was significantly higher in the PC-LB at all the measured time points of 1, 4, and 24 hrs (p<0.001).

► Table 1

	EUS-LB (n=24)	PC-LB (n=24)	p value
Aggregate Specimen length [median (interquartile range)] (mm)	33.5 (23.8)	15.0 (4.8)	<0.001
Number of CPTs	17.5 (10.8)	7.5 (6.0)	<0.001
Pathological Diagnosis attained	23 (95.8%)	24 (100%)	1.00
Need for analgesic	1 (4.2%)	10 (41.7%)	0.004

Conclusions EUS-LB showed significantly better aggregate specimen length and more CPTs compared to PC-LB. Post-procedure pain in the first 24 hrs was significantly greater in the PC-LB arm. (Trial No: CTRI/2020/09/027989)

OP233 NEXT-GENERATION SEQUENCING MUTATIONAL ANALYSIS OF CELL-FREE DNA IN ERCP-OBTAINED BILE. A STEP FORWARD IN THE DIAGNOSIS OF MALIGNANT BILIARY STENOSIS

Authors Rullan M.¹, Oyon D.², Zabalza L.¹, Salmón P.³, Jusué V.³, Mercado M.³, González de la Higuera B.³, Amat I.³, Carrascosa J.³, Fernández-Urien I.³, Ruiz-Clavijo D.³, Casi M.³, Borobio E.³, Saldaña C.³, Bolado F.³, Arechederra M.⁴, Berasain C.⁴, Avila M.A.⁴, Urman J.M.³, Vila J.J.³

Institutes 1 Hospital García Orcoyen, Estella, Spain; 2 Hospital de Galdakao. Instituto de Investigación Sanitaria Biocruces, Galdakao, Spain; 3 Hospital Universitario de Navarra, Pamplona, Spain; 4 Centro de Investigación Médica Aplicada (CIMA), Pamplona, Spain

DOI 10.1055/s-0042-1744796

Aims The discrimination between benign and malignant biliary stenosis (BS) remains a clinical challenge. The diagnostic accuracy of bile duct brushing cytology is suboptimal. Liquid biopsy strategies could improve this diagnostic accuracy. The aim of this study was to evaluate the diagnostic yield of ERCP-bile duct brushing cytology versus next-generation sequencing mutational analysis of cell-free DNA in ERCP-obtained bile (Bilemut) in patients with BS at the time of first ERCP.

Methods Prospective multicenter study (2017-2020). A cohort of 50 patients prescribed to undergo ERCP with a diagnosis of BS was accrued. Bile was obtained before contrast injection. The final diagnosis was defined based on histological evidence and 12 months clinical or radiographic follow-up. We compared sensitivity, specificity, positive predictive value (PPV) and negative predictive value (NPV) following STARD guidelines recommendations.

Results Twelve patients were finally diagnosed of benign BS and 38 of malignant BS (31 cholangiocarcinoma, 1 gallbladder cancer and 6 pancreatic cancer). Diagnostic accuracy results are shown in the Table below:

► Table 1

	Sensitivity	Specificity	PPV	NPV
Bile duct brushing cytology	50 % (19/38)	100 % (12/12)	100 % (19/19)	38 % (12/31)
Bilemut	97 % (37/38)	66 % (8/12)	90 % (37/41)	88 % (8/9)

Bilemut detected mutations in the 19 patients with malignant BS and non-malignant bile duct brushing cytology. The combination of both techniques would have diagnosed 100 % of malignant BS.

The most frequently detected mutations were KRAS 73.7 % and TP53 52.6 %. Potentially actionable mutations were identified in 55.3 %.

Conclusions Implementation of Bilemut can improve the sensitivity of bile duct brushing cytology in BS without additional risks. In this study the combination of Bilemut and bile duct brushing cytology allows to detect all the malignant BS. Bilemut can identify actionable mutations for targeted therapies.

OP234V AUTOIMMUNE CHOLANGIOPATHY: ENDOSCOPIC DIAGNOSIS

Authors El Hajra Martínez I.¹, Agudo B.¹, Pons F.¹, Piazza A.¹, Rodríguez J.L.¹, Blanco Rey S.¹, Santos Pérez E.¹, Pinto Da Costa A.¹, Gonzalez-Haba M.¹

Institute 1 Hospital Universitario Puerta de Hierro, Madrid, Spain

DOI 10.1055/s-0042-1744797

Benign bile duct lesions account for up to 30 % of biliary strictures. We present a case of endoscopic diagnosis of non-IgG4-mediated autoimmune cholangiopathy (AIG) associated with eosinophilic esophagitis.

EUS examination failed to provide a definitive diagnosis and ruled-out malignancy. Cholangioscopy showed a narrow and erythematous common bile duct with denuded areas. Finally, histological examination revealed a lymphoplasmacytic infiltrate without IgG4 and first follow up showed improvement after four weeks of prednisone.

AIG can be difficult to distinguish from malignant strictures, being cholangioscopy with biopsy an effective and safe procedure. Slim linear echoendoscope is an alternative in patients with esophageal stricture.

OP235 EUS-GUIDED PORTAL PRESSURE GRADIENT MEASUREMENT (EUS-PPG). PRELIMINARY RESULTS COMPARED WITH HEPATIC VENOUS PRESSURE GRADIENT (HVPG)

Authors Martínez-Moreno B.¹, Guilbert L.¹, Martínez J.², Hurtado A.¹, Pascual S.³, Rodríguez M.³, Miralles C.³, Herrera I.³, Bellot P.³, Martínez-Sempere J.¹, Compañy L.¹, Ruiz F.¹, Mangas C.¹, Aparicio J.R.¹

Institutes 1 Hospital General Universitario de Alicante, Unidad de Endoscopia, Alicante, Spain; 2 Hospital General Universitario de Alicante, Servicio de Radiología, Alicante, Spain; 3 Hospital General Universitario de Alicante, Unidad Hepática, Alicante, Spain

DOI 10.1055/s-0042-1744798

Aims Evaluate technical success and related complications associated to EUS-GPP in cirrhotic patients. Secondary endpoint: explore the correlation between EUS-PPG and HVPG in cirrhotic patients.

Methods Prospective observational study in a tertiary hospital. Patients with diagnosed or suspected cirrhosis and indication of measurement of portal pressure gradient were enrolled. We performed EUS-GPP with a conventional endoscopic ultrasonography 22G needle and a central venous pressure monitor in the endoscopic unit. In a subgroup HVPG was also performed with the standard radiologic method. We used mean values for descriptive variables and Intraclass correlation coefficient for EUS-GPP/HVPG correlation.

Results Twenty six patients were included. Hepatic function was Child 7,4 ± 2,1 y MELD-Na 13,2 ± 5,6. Success rate of EUS-GPP was in 24/26 patients (92,3 %). It wasn't possible to perform EUS-GPP in two cases, one because of impossibility of sedation, and one because of lack of vascular access for IVC and suprahepatic veins in a liver transplant patient. There was one complication (3,8 %): mild upper gastrointestinal bleeding endoscopically treated. In 25/26 propofol was exclusively used for the sedation. In 81 % another endoscopy was associated. Mean time for the procedure was 25,6 ± 12,7 min. In 17 patients EUS-GPP and HVPG were performed. Mean EUS-GPP was 17,2 ± 5,2 mmHg and 18,1 ± 3,9 mmHg in the HVPG group, p = 0,3. Intraclass correlation coefficient between EUS-GPP and GPVH was 0,75.

Conclusions EUS-GPP measurement in cirrhotic patients is an effective and safe procedure that allows direct measurement of the portal pressure. Good correlation with HVPG is observed. EUS-GPP could become the new gold standard.

OP236 EVALUATION OF INTEROBSERVER AGREEMENT OF DIGITAL SINGLE-OPERATOR CHOLANGIOSCOPY FOR INDETERMINATE BILIARY STRICTURES

Authors Milluzzo S.M.^{1,2}, Tringali A.¹, Perri V.¹, Familiari P.¹, Boskoski I.¹, Ricci R.¹, Costamagna G.¹

Institutes 1 Fondazione Policlinico Universitario A. Gemelli IRCCS – Università Cattolica del Sacro Cuore, Roma, Italy; 2 Fondazione Poliambulanza Istituto Ospedaliero, Brescia, Italy

DOI 10.1055/s-0042-1744799

Aims Visual findings during digital single-operator cholangioscopy (DSOC) still plays a major role in diagnosis of indeterminate biliary strictures (IDBS). A universally accepted classification is lacking. The Monaco Classification was recently proposed to overcome this limitation. The aim of this study was to evaluate efficacy and reproducibility of this classification.

Methods Twenty-second DSOC clips were retrospectively reviewed by 6 experts and 6 trainees with no expertise in biliary endoscopy and classified according to the Monaco Classification. Investigators were all blinded to the final diagnosis. Final diagnosis was based on histological evaluation of the surgical specimen when available or a clinical diagnosis after a follow-up of at least 6 months.

Results Twenty-nine clips were reviewed. Overall accuracy of DSOC visual finding was 73.6% and 64.4% for experts and trainees, respectively. Results of interobserver agreement are shown in Table 1.

► **Table 1** Interobserver agreement between experts and trainees for DSOC clips of indeterminate biliary strictures using Monaco Classification.

	kappa	agreement	p-value
Stricture	0.531	69	<0.001
Lesion	0.564	69	<0.001
Mucosal features	0.728	86.2	<0.001
Papillary projections	0.609	72.4	<0.001
Ulceration	0.562	72.4	<0.001
Abnormal vessels	0.571	72.4	<0.001
Scarring	0.319	69	0.003
Pronounced pit pattern	0.037	28.4	0.355
Final diagnosis	0.871	93.1	<0.001

Conclusions Despite the moderate overall accuracy compared to final diagnosis, the Monaco Classification showed good interobserver agreement. Further studies are needed to confirm its reproducibility in current clinical practice.

Subepithelial lesions: from EUS evaluation to endoscopic resection
Saturday, 30 April 2022

11:30–12:30
Club A

OP237 EUS-GUIDED DIAGNOSIS OF SUBEPITHELIAL GASTROINTESTINAL LESIONS: A MONOCENTRIC EXPERIENCE IN THE ERA OF THE NEW FNB NEEDLES

Authors Sacco M.¹, Fimiano F.¹, Mauriello A.¹, Castellano F.¹, Gesualdo M.¹, Cravero F.¹, Staiano M.T.¹, Dall'Amico E.¹, Gambella A.², Gaia S.¹, Bruno M.¹, De Angelis C.G.¹

Institutes 1 AOU Città della Salute e della Scienza di Torino, Gastroenterology Department, Endoscopy Unit, Torino, Italy; 2 University of Turin, Pathology Unit, Department of Medical Sciences, Torino, Italy
DOI 10.1055/s-0042-1744800

Aims Subepithelial lesions (SLs) are found in about 1% of all upper endoscopies; although the majority of them are benign, gastrointestinal stromal tumors (GISTs) have malignant potential and surgery is often needed. Diagnosis of GISTs relies on immunohistochemical staining (IHCS) and achieving adequate tissue from suspected GISTs by EUS-FNA/FNB remains a limitation. Aim of this study is to evaluate diagnostic yield of EUS + FNA/FNB in diagnosis of gastrointestinal SLs.

Methods We retrospectively analyzed patients underwent to EUS + FNA/FNB for gastrointestinal SLs in our academic center from January 2017 to October

2021. Demographic, clinical and histopathological data were analyzed from a prospectively collected database. Final diagnosis of the nature of SLs was based on surgical pathology when available or on specific IHCS.

Results Fifty-one patients were included, mostly female (53%) with a mean age of 69 years. SLs were located mostly in stomach (73%) and duodenum (18%); mean size of SLs was 32.4 ± 14.6 mm.

FNA and FNB were performed respectively in 18 and 33 cases; in 2 cases EUS-sampling was inconclusive (1 FNA, 1 FNB), whereas in 49 cases (96%) final diagnosis was achieved (42 cases of GIST, 7 cases of leiomyoma). Feasibility of molecular biology analysis on FNA/FNB specimens was achieved in 68% of cases. In 18 out of 19 patients underwent to surgery FNB-based diagnosis was concordant with surgical pathology (95%).

Conclusions In our experience, EUS with FNA/FNB demonstrated high accuracy in diagnosis of gastrointestinal SLs, with 96% of cases correctly diagnosed and more than 2/3 of specimens suitable for molecular biology analysis.

OP238 A DEEP LEARNING BASED SYSTEM FOR REAL TIME MUCOSAL LAYERS ANNOTATION IN RADIAL ENDOSCOPIC ULTRASOUND

Authors Li X.¹, Yu H.¹, Yao L.¹, Zhang C.¹

Institute 1 Wuhan University, Wuhan, China

DOI 10.1055/s-0042-1744801

Aims We aimed to construct a deep learning-based system for real-time mucosal layers annotation and originating layer of SMTs pointing in radial EUS.

Methods We developed a lesion segmentation model and a mucosal layers segmentation model with 2066 images and 2173 images, respectively. 200 images and 282 images were applied to internal validation. On this basis, we developed another classification model to classify the original layers of SMTs using 1611 images and 162 images for training and validation, respectively.

Results For lesion segmentation, the model had a DICE of 0.6676. For mucosal layers segmentation, the model had a DICE of 0.7070, 0.5580 and 0.5725 for mucosa layer, submucosa layer and muscularis propria layer, respectively. For lesion original layers classification, the model achieved an accuracy of 85.93%.

Conclusions This system can be used for mucosal layers annotation and originating layer of lesions pointing under radial EUS in the future, providing a strong basis for the selection of biopsy and endoscopic treatment of SMTs.

OP239V ENDOSCOPIC ULTRASOUND (EUS), CONTRAST-ENHANCED EUS AND FINE NEEDLE BIOPSY (FNB) OF PARAGASTRIC LESION

Authors Fimiano F.¹, Sacco M.¹, Mauriello A.¹, Castellano F.¹, Gesualdo M.¹, Gambella A.², De Angelis C.G.¹

Institutes 1 AOU Città della Salute e della Scienza di Torino, University of Turin, Gastroenterology Department, Endoscopy Unit, Turin, Italy;

2 University of Turin, Italy, Pathology Unit, Department of Medical Sciences, Turin, Italy

DOI 10.1055/s-0042-1744802

This video presents a case of EUS guided FNB of a paragastric lesion. CH-EUS showed the pancreatic body marked by a hypoechoic oval mass which originated from the muscular layer of the posterior gastric wall of the body with rapid enhancement in arterial phase. FNB of the lesion with slowpull technique, both with 22G and 19G was performed and histology was consistent with Gastrointestinal Stromal Tumor. The new FNB, Franseen-tip 19G needles, could represent a great advance in FNB of GI submucosal lesions and macroscopic on site evaluation (MOSE) could predict the good quality of the specimen.

OP240 ENDOSCOPIC RESECTION FOR TYPE III G-NETS: A SYSTEMATIC REVIEW

Authors [Tringali A.¹](#), [Costa D.²](#), [Adler D.G.³](#)

Institutes 1 National Tumour Institute of Milan, Endoscopy Unit, Milan, Italy; 2 ULSS2 Marca Trevigiana, Endoscopy Unit, Conegliano, Italy; 3 Porter Adventist Hospital, Centura Health, Center for Advanced Therapeutic Endoscopy (CATE), Denver, CO, United States
DOI 10.1055/s-0042-1744803

Aims The traditional management of type III Gastric Neuroendocrine Tumors (G-NETs) has been radical surgical resection due to higher risk of metastasis and poor prognosis compared with type I and II. Recent studies highlighted the role of endoscopic resection in a selected group of type III G-NETs. We performed a systematic review to assess the role of endoscopic treatment in this setting.

Methods A multiple database search including MEDLINE, Embase and Cochrane Library from January 2003 to March 2021 was performed, to identify studies reporting efficacy and safety of endoscopic management of Type III G-NETs. Primary outcomes were complete resection rate and overall mortality. Secondary outcomes included complication rate.

Results Ten retrospective studies were identified including 229 patients, mostly male (63%), in the sixth decade of life. The majority of tumour were solitary lesions localized in the body of the stomach. Sixty-six patients had grade 1, 52 grade 2 and 29 grade 3 type III G-NETs. One hundred and twenty-one patients underwent endoscopic resection (EMR or ESD) for small (<20 mm) localized tumours without lymph node or distant metastasis at baseline. Complete resection rate was 72%-80%, reaching 87% in the largest series. Not enough data to determine whether ESD was superior to EMR in terms of complete resection were found. Surgical treatment occurred in 75 patients. Twenty-seven disease-related deaths were documented. Complication rate was not evaluated in most studies.

Conclusions Endoscopic management of small, low grade type III G-NETs with no evidence of metastasis could be used with curative intent. More studies are warranted.

OP241V THE CASE OF A SCRUTINIZED UNUSUAL DUODENAL TUMOR : ESD RESECTION IN A DIAGNOSTIC AND CURATIVE AIM

Authors [Poiraud M.¹](#), [Moulart F.²](#), [Verset L.³](#), [Eisendrath P.²](#), [Lemmers A.¹](#)

Institutes 1 Erasme Hospital, Gastroenterology Hepatopancreatology and Digestive Oncology, Brussels, Belgium; 2 Saint-Pierre University Hospital, Université Libre de Bruxelles, Hepato Gastro Enterology, Brussels, Belgium; 3 Institut Jules Bordet, Pathological Anatomy, Brussels, Belgium
DOI 10.1055/s-0042-1744804

Prediction of subepithelial lesions (SEL) based on classical endoscopic appearance is often difficult.

We report a case of duodenal SEL where the pathological examination of the endoscopic resection revealed the real diagnosis.

The preoperative diagnostic hypothesis were based on the endoscopic appearance, the echo-endoscopic pattern so as bite-on-bite biopsies.

In our case, ESD allowed an extended histopathological examination which disproved the preoperative diagnosis. Although risky and technically challenging in the duodenum, ESD appears in referral centers as a minimal invasive and good indication for further histopathological confirmation as well as a curative strategy in case of selected localized duodenal tumors.

OP242 SECOND-LOOK UPPER ENDOSCOPY AS THE INITIAL APPROACH TO SUBEPITHELIAL LESIONS: A REASSURING AND RELIABLE STRATEGY

Authors [Lima Capela T.^{1,2}](#), [Macedo Silva V.^{1,2}](#), [Freitas M.^{1,2}](#), [Cúrdia Gonçalves T.^{1,2}](#), [Dias de Castro F.^{1,2}](#), [Magalhães J.^{1,2}](#), [Leite S.^{1,2}](#), [Cotter J.^{1,2}](#)

Institutes 1 Hospital da Senhora da Oliveira, Gastroenterology Department, Guimarães, Portugal; 2 School of Medicine, University of Minho, Life and Health Sciences Research Institute (ICVS), Braga/Guimarães, Portugal
DOI 10.1055/s-0042-1744805

Aims Subepithelial lesions (SEL) of upper gastrointestinal tract are frequent on upper gastrointestinal endoscopy (UGE) but robust data regarding their management is lacking. Although endoscopic ultrasound (EUS) is important in the diagnosis and management of SEL, many can be classified only by a thorough UGE, reducing the burden of additional studies. We aimed to analyze the impact of a stepwise approach starting with an UGE prior to the decision of EUS in patients with suspected SEL.

Methods Retrospective cohort-study of patients referred to our center between 2015-2020 with suspected SEL. Patients' demographic and clinical data, SEL features on index and second-look UGE, and decisions on SEL management and follow-up were collected.

Results A total of 193 SEL were included. Most patients performed a second-look UGE (n=180;94.7%). A minority was orientated directly to EUS (n=8;4.2%) or endoscopic/surgical resection (n=2;1.1%). In patients who underwent a second-look UGE, SEL were excluded in 25 (13.9%) and in those with confirmed SEL, both index and second-look UGE had a very strong and strong correlation in number (r=1.0; p<0.001) and size (r=0.721; p<0.001) and a very good agreement (k=1; p<0.001) for location of SEL. From these patients, 21 (11.7%) did not need further work-up and the rest performed EUS (n=88;48.9%), surveillance by UGE (n=44;24.4%) or endoscopic resection (n=2;1.1%). All patients that did not need further work-up had a benign diagnosis.

Conclusions Systematically performing a second-look UGE in patients referred with suspected SEL can safely preclude the need of subsequent investigation in approximately one fourth of them. As UGE is less invasive and more readily available, a second-look UGE should be the initial approach to SEL evaluation.

Clinical presentations of colonoscopy	11:30–12:30
Saturday, 30 April 2022	Club E

OP243 CAN ROUTINE BIOPSY OF COLORECTAL ENDOSCOPIC MUCOSAL RESECTION SCARS BE ABANDONED? – PRELIMINARY DATA OF A MULTICENTRE RANDOMIZED SINGLE-BLINDED CROSSOVER TRIAL

Authors [João M.¹](#), [Pinto Pais T.²](#), [Areia M.¹](#), [Alves S.¹](#), [Brito D.¹](#), [Elvas L.¹](#), [Saraiva S.¹](#), [Dinis Ribeiro M.²](#), [Cadime A.T.¹](#)

Institutes 1 Portuguese Oncology Institute of Coimbra, Gastroenterology, Coimbra, Portugal; 2 Portuguese Oncology Institute – Porto, Gastroenterology, Porto, Portugal
DOI 10.1055/s-0042-1744806

Aims Current ESGE guideline suggests that routine biopsy of endoscopic mucosal resection (EMR) scars can be abandoned provided that a standardized imaging protocol with virtual chromoendoscopy is used. However, few studies have examined the accuracy of advanced endoscopic imaging for the prediction of histological recurrence. We aimed to assess the incremental benefit of narrow band imaging (NBI) versus white light endoscopy (WLE) by randomizing the initial technique for the endoscopic detection of post-EMR recurrence and to assess if NBI achieves a diagnostic accuracy that replaces the need for biopsy.

Methods Multicenter, randomized, crossover trial, with consecutive patients undergoing the first colonoscopy after EMR of lesions ≥20mm. Computer-generated randomization and opaque envelope concealed allocation. Patients randomly assigned to scar examination with NBI followed by WLE (NBI>WLE)

or WLE followed by NBI (WLE > NBI) with biopsies in recurrence- and normal-appearing tissue were performed.

Results We included 112 scars, 61 in group NBI > WLE and 57 in group WLE > NBI. Recurrence was confirmed histologically in 32 %. Comparing NBI vs. WLE assessment sensitivity 89 % vs. 82 %, specificity 98 % vs. 99 %, positive predictive value 94 % vs. 97 % and negative predictive values 95 % vs. 92 % did not reach a statistically significance. Diagnostic accuracy of NBI vs. WLE for diagnosis of recurrence was improved (95 % vs. 93 %; $P < 0.01$).

Conclusions Endoscopic assessment of EMR scars with WLE has an already high accuracy for diagnosis of recurrence but the use of NBI can further improve recurrence detection, precluding the routine biopsy in cases of negative optical diagnosis.

OP244 PROXIMAL SESSILE SERRATED LESIONS DETECTION RATE IS ASSOCIATED WITH LONGER COLONOSCOPY WITHDRAWAL TIME IN NON-SCREENING COLONOSCOPY

Authors Thoufeeq M.¹, Shiha M.G.¹

Institute 1 Sheffield Teaching Hospitals, Department of Gastroenterology, Sheffield, United Kingdom

DOI 10.1055/s-0042-1744807

Aims Proximal sessile serrated lesions (PSSL) are increasingly recognized as significant precursors of interval colon cancer. We aimed to assess the PSSL detection rate in non-screening colonoscopies and whether there are associations between PSSL detection rate and the established colonoscopy key performance indicators (KPI).

Methods We retrospectively collected data of all non-screening colonoscopies performed by independent endoscopists at a large teaching hospital between June and December 2019. Data regarding endoscopists' KPIs including polyp detection rate (PDR), caecal intubation rate (CIR) and colonoscopy withdrawal time (CWT), were retrieved from the national endoscopy database. SSL resected proximal to the splenic flexure were identified by an expert pathologist. Associations between PSSL detection rate and the different KPIs were assessed using Spearman's test.

Results A total of 2956 colonoscopies performed by 33 endoscopists were included. Mean PSSL detection rate was 0.7 % (SD 1.5), mean PDR was 37.1 % (SD 17), mean CIR was 91.3 % (SD 6) and mean CWT was 9 minutes (SD 2). There was marked variability in PSSL detection rates between endoscopists (range 0 – 6.5 %). PSSL detection rate positively correlated with CWT ($r = 0.34$, $p = 0.04$) but not with the other KPIs.

Conclusions The wide variability in PSSL detection between endoscopists is concerning of high miss rates. Meticulous examination of the proximal colon and longer colonoscopy withdrawal time may reduce the risk of missed PSSL and subsequent colon cancer.

OP245V ENDOSCOPIC SPECTRUM OF ISCHEMIC COLITIS

Authors Mönkemüller K.¹, Martínez-Alcalá A.¹

Institute 1 Ameos University Teaching Hospital, Gastroenterology, Halberstadt, Germany

DOI 10.1055/s-0042-1744808

The endoscopic spectrum of ischemic colitis is broad. Key elements are sparing of the rectum and segmental distribution, mainly in the left colon (at the arc of Riolo). In mild ischemic colitis there is segmentally distributed patchy erythema, edema and subepithelial hemorrhages. In moderate colitis, in addition to changes seen in mild disease, there are localized erosions and ulcers, which may be confluent. Often, a linear ulcer in the mesenteric border of the colon is seen, known as colon single strip sign or Zuckerman's sign. In severe colitis there are deep ulcers, luminal narrowing and strictures and frank necrosis.

OP246 COMBINED FORWARD AND RETROFLEXION WITHDRAWAL DURING COLONOSCOPY USING A SECOND-GENERATION SHORT-TURN RADIUS COLONOSCOPE

Authors Robles-Medrande C.¹, Cifuentes-Gordillo C.¹, Puga-Tejada M.¹, Alciavar-Vasquez J.¹, Del Valle R.¹, Alvarado H.¹, Egas-Izquierdo M.¹, Arevalo-Mora M.¹, Merfea R.C.¹, Barreto Perez J.¹, Rodriguez J.¹, Lukashok H.P.¹

Institute 1 Instituto Ecuatoriano de Enfermedades Digestivas, Guayaquil, Ecuador

DOI 10.1055/s-0042-1744809

Aims Polyps and adenomas are missed inevitably in colonoscopy due to factors such as the location of lesions on difficult areas (i.e., proximal side of ileocecal valve). We aimed to evaluate the impact of combined forward and retroflexion withdrawal using a second-generation short-turn radius colonoscopy during colonoscopy.

Methods A non-randomized, prospective trial. Patients were submitted first to a standard high-definition colonoscopy, followed by a second procedure combining forward and retroflexion performed by a different operator. Lesions detected on the second procedures were considered as originally missed during standard colonoscopy. We calculated the polyp detection rate (PDR) and the adenoma detection rate (ADR) of both standard and combined colonoscopy techniques. Statistical analysis was performed on R.4.0.3. NCT03901651.

Results A total of 319 complete colonoscopies in 319 cases were performed combining forward and retroflexion withdrawal. Colonoscopy reason: diagnostic on 266 (83.4 %), screening on 41 (12.9 %) and 12 (3.8 %) for polypectomy/CCR surveillance. Regarding size of the lesions, 140/163 (85.9 %) detected on forward viewing were < 5 mm. Whereas, during second procedure (forward and retroflexion), 65/71 (91.5 %) sized < 5 mm and 6/71 (8.5 %) between 5–10 mm. For forward viewing, the PDR and ADR was 45.1 and 16.3, respectively. For second procedure (combined forward and retroflex), the PDR and ADR increased to 21.9 and 7.8, correspondingly (Table 1).

	First procedure (forward) (n=163/319)	Second procedure (forward and retroflexion) (n=71/319)	Retroflex impossibility (n=319)
Rectum	19 (11.7)	7 (9.8)	2 (0.6)
Sigmoid	44 (26.9)	18 (25.3)	68 (21.3)
Descending	29 (17.7)	17 (23.9)	7 (2.2)
Transverse	33 (20.2)	15 (21.1)	1 (0.3)
Ascending	55 (33.7)	17 (23.9)	1 (0.3)
Cecum	22 (13.5)	6 (8.4)	n/a

► Fig. 1

Conclusions We found that combined forward and retroflexion withdrawal technique during colonoscopy increases the PDR and ADR in comparison to standard colonoscopy. Larger, multi-center trials are necessary to validate these data.

OP247V ISCHEMIC COLITIS AFTER COVID MRNA VACCINE

Authors Mönkemüller K.¹, Abdalalleva E.¹, Manovski K.¹, Cacho-Díaz M.¹

Institute 1 Ameos University Teaching Hospital, Gastroenterology, Halberstadt, Germany

DOI 10.1055/s-0042-1744810

An 82-year female patient was admitted with abdominal pain and hematochezia 7 days after her second mRNA vaccination (BioNTech, Germany). There was severe abdominal tenderness and leukocytosis (18,000). Abdominal ultrasound revealed massive edema of the colon but no atherosclerosis of the aorta. Sigmoidoscopy revealed deep ulcers luminal narrowing and frank mucosal necro-

sis starting at the rectosigmoid and extending into the entire sigmoid colon. Extensive evaluation including stool cultures, histology, studies for viral and autoimmune diseases did not reveal any other cause for the ischemic colitis. Thrombosis after mRNA may occur in the setting of vaccine-induced thrombocytopenia, vasculitis autoimmune or thrombosis.

OP248V ENDOSCOPIC ULTRASOUND (EUS) GUIDED COLORECTAL ANASTOMOSIS FOR SUCCESSFUL RELIEF OF MALIGNANT ADHESIVE LEFT SIDED COLONIC OBSTRUCTION IN A CASE OF FAILED COLONIC STENTING

Authors [Gandhi A.¹](#), [Ansari J.¹](#), [Raina H.¹](#), [Bhagwat S.¹](#), [Bapaye H.²](#), [Pujari R.¹](#), [Nikumbh T.¹](#), [Bapaye A.¹](#)

Institutes 1 Deenanath Mangeshkar Hospital and Research Centre, Shivanand Desai Centre for Digestive Disorders, Pune, India; 2 Byramjee Jeejeebhoy Govt. Medical College, Pune, India

DOI 10.1055/s-0042-1744811

53-y-female, Primary Peritoneal Carcinomatosis-sigmoid colectomy(2017), right hemi-colectomy(2020) for tumour de-bulking and relief of recurrent obstruction, multiple chemotherapy cycles. Complaints-distal large bowel obstruction at rectosigmoid-peritoneal adhesions, CECT-dilated large colon, adhesive obstruction at rectosigmoid-failed colonic stenting due to sharp angulation & failed guidewire cannulation. Linear EUS and fluoroscopy-apposed dilated colonic segment. Contrast injected into obstructed bowel-19G needle. Colorectal anastomosis using hot lumen apposing metal stent(LAMS;20mmX10mm). 7Fr catheter through LAMS for saline irrigation, lactulose enema. Immediate decompression with symptomatic relief. X-ray-significant decompression. Oral diet resumed after 2 days. Sigmoidoscopy after 72hours-LAMS in situ, draining faeces, irrigation catheter removed. Discharged 3 days later. No complications. Asymptomatic-3-weeks f/u.

How to access the pancreas
Saturday, 30 April 2022

11:30–12:30
Club H

OP249 ENDOSCOPIC PAPILLECTOMY COMPARED TO SURGERY FOR AMPULLARY LESIONS: A PROPENSITY-SCORE MATCHING ANALYSIS

Authors [Hollenbach M.¹](#), [Heise C.²](#), [Ali E.A.³](#), [Auriemma F.⁴](#), [Gulla A.⁵](#), [Regner S.⁶](#), [Gaujoux S.⁷](#), study group P ESA

Institutes 1 University of Leipzig Medical Center, Division of Gastroenterology, Medical Department II, Leipzig, Germany; 2 Martin-Luther University Halle-Wittenberg, Medical Department I, Halle, Germany; 3 Paris Descartes University, Department of Gastroenterology, Digestive Oncology and Endoscopy, Cochin Hospital, Paris, France; 4 3 Humanitas Clinical and Research Hospital, Rozzano, Digestive Endoscopy Unit, Division of Gastroenterology, Milano, Italy; 5 Lithuanian University of Health Sciences, Department of Surgery, Kaunas, Lithuania; 6 Lund University, Department of Clinical Sciences Malmö, Section for Surgery, Lund, Sweden; 7 Médecine Sorbonne Université, Department of pancreatic and endocrine surgery, Pitié-Salpêtrière Hospital, Paris, France

DOI 10.1055/s-0042-1744812

Aims Ampullary lesions (AL) can be resected by endoscopic-papillectomy (EP), surgical-ampullectomy (SA) and pancreaticoduodenectomy (PDD). However, consistent data analyzing the different methods are lacking. We compared outcome and complications of EP and surgery in matched patients of a large retrospective multicenter study.

Methods The ESAP study database included 2862 patients. We performed a propensity-score-matching (nearest-neighbor-method) based on age, gender, anthropometrics, co-morbidities, size and histologic subtype of AL. Ampullary carcinoma of T₃-/T₄-stadium or metastatic diseases were excluded. Main out-

comes were complete resection (R0) and complications. Dispersions between EP and PDD or EP and SA were calculated by means of Fisher's exact or chi-square-test, Mann-Whitney-U-test and log-rank test for survival.

Results Propensity-score-matching identified 151 pairs of patients for EP/PDD and 77 for EP/SA analysis. Baseline characteristics were comparable. Initial R0-rate in the EP/PDD cohort was 84.4 % (EP) compared to 100 % (PDD, $p < 0.001$). However, anew EP or ablation therapy (APC, RFA) increased R0-rate to 91.3 % ($p = 0.5$ compared to PDD). Severe complications were significantly higher in the PDD group (17.2 % vs 3.3 %, 2 vs. 0 deaths, $p < 0.001$). In the EP/SA group, R0-rate was 87.1 % (EP) compared to 90.9 % (SA, $p = 0.4$). Complications were not significantly different but SA resulted in 2 deaths (0 in EP). Survival analysis showed a significantly improved long-term survival in EP compared to PDD patients.

Conclusions EP showed a comparable efficacy as surgery for AL and lower risk of complications. Incomplete resections can be treated by repetitive endoscopic therapy. EP should be the standard of care for AL except of advanced invasive cancers.

OP250 BILIARY CANNULATION: WHICH IS THE BEST TECHNIQUE WHEN THE GUIDEWIRE IS UNEXPECTEDLY INSERTED INTO PANCREATIC DUCT?

Authors [Zaragoza Velasco N.¹](#), [Albuquerque M.^{2,3}](#), [Torres N.¹](#), [Miguel I.¹](#), [Figa M.²](#), [Pijoan E.^{2,3}](#), [Miñana J.M.¹](#), [Vargas A.^{2,3}](#), [Reñe J.M.¹](#), [González-Huix F.^{1,2}](#)

Institutes 1 Arnau de Vilanova Lleida, Hospital, Lleida, Spain; 2 Clinica Girona, Girona, Spain; 3 Hospital Palamos, Girona, Spain

DOI 10.1055/s-0042-1744813

Aims Incidental guidewire insertion into pancreatic duct (PD) is traditionally associated with a higher risk of post-ERCP pancreatitis (PEP).

To compare the efficacy and safety of different biliary cannulation techniques after an unexpected insertion of the guidewire into pancreatic duct.

Methods Analysis of a multicenter prospective endoscopy database (2012-2021). Patients with naive papilla undergone first ERCP performed by expert endoscopists, were included. There were analyzed four biliary cannulation techniques after the guidewire was unexpectedly inserted into PD: repeated attempts after guidewire was withdrawn from PD (RA), keeping guidewire in PD to aid biliary cannulation (double guidewire technique- DGT), transpancreatic pre-cut (TPC) and TPc, pancreatic stenting and biliary cannulation over stent (TPc-BCoS). In the last one, TPC was performed after the first unexpected guidewire insertion into PD.

Results 527 patients included (age: 70.10 ± 0.71 years, 52.7 % women). Biliary cannulation techniques: 189 (35.8 %) RA, 65 (12.3 %) DGT, 219 (41.5 %) TPc and 54 (10.2 %) TPc-BCoS. Global biliary cannulation rate (BCR): 91.5 % and complication rate: 10.6 %. TPc-BCoS reached the highest BCR: 100 %, $p = 0.01$ and the lowest complication rate: 5.6 %, $p = 0.02$. In this group, no PEP appeared. Conversely, TPC showed the highest perforation rate: 6.8 %, $p = 0.03$. There were no differences in hemorrhage, cholangitis and death. Unlike TPc-BCoS, in a third of RA, DGT and TPc a further freehand pre-cut was required.

Conclusions Transpancreatic pre-cut, pancreatic stenting and biliary cannulation over stent was the most effective and safest biliary cannulation technique. Therefore, it should be the first choice after unexpected insertion of the guidewire into pancreatic duct.

OP251V ENDOSCOPIC MANAGEMENT OF COMPLETE MAIN PANCREATIC DUCT TRANSECTION IN A YOUNG CHILD

Authors [Medas R.¹](#), [Moutinho-Ribeiro P.¹](#), [Macedo G.¹](#)

Institute 1 Centro Hospitalar Universitário São João, Gastroenterology, Porto, Portugal

DOI 10.1055/s-0042-1744814

A 11-year-old female suffered blunt abdominal trauma with a school chair and presented in emergency room with epigastric pain and vomits. On admission, abdominal tenderness was noted and laboratory workup showed mild elevation of pancreatic enzymes. Abdominal ultrasonography revealed irregularity in the pancreatic neck with adjacent fluid, suspicious of parenchymal laceration. Computed tomography confirmed complete transection of main pancreatic duct (MPD) (grade IV injury). Early endoscopic retrograde cholangiopancreatography was performed with successful bridging of the disruption and insertion of a plastic stent. After 14 weeks with good clinical evolution, stent was removed and integrity of MPD confirmed by endoscopic ultrasonography.

OP252 LONG-TERM OUTCOMES AFTER EUS-GUIDED PANCREATIC DUCT DRAINAGE

Authors Van Haren M.¹, Aouattah T.¹, Moreels T.¹, Yeung R.¹, Deprez P.H.¹

Institute 1 Cliniques universitaires Saint-Luc, Université Catholique de Louvain, Gastroenterology, Woluwé-Saint-Lambert, Belgium

DOI 10.1055/s-0042-1744815

Aims To analyze the long-term clinical success of EUS-PD

Methods For this retrospective single tertiary-referral center study, data from patients with EUS-PD were collected in patient's charts and the endoscopy database, retrieving information on indication, technique of drainage, technical and clinical successes (total in case of no pain after treatment, and partial if more than 50 % reduction in pain), adverse events, as well as reasons for failure defined as no improvement of (pain) symptoms, or need for surgery.

Results A total of 66 patients were retrieved (62 % male, median age 53y; range, 9-79). EUS-PD was performed by transgastric (n = 40), transduodenal (n = 4) approach, or rendez-vous technique (n = 21). Technical success was obtained in 82 % (54/66), with an adverse event rate of 30 % (20/66), of which one severe and 9 moderate (mostly pancreatitis and fluid effusions).

Long-term clinical success was observed for 46 patients (n = 46/54, 85.2 %), during a median follow-up of 70 m (range 1-250). One or two stent exchanges were usually needed (median 1.7; range, 0-15). Three patients only underwent surgery. Higher clinical and technical success rates were associated with a large MPD diameter (p = 0.008), and male gender (p = 0.001). There was no significant relationship between the primary disease, drainage type, tobacco or alcohol use, and technical and clinical success rate.

Conclusions EUS-guided pancreatic drainage is effective in the long term with a clinical success rate over 85 %, and may therefore be considered as a good alternative to surgery. However, this technique is still challenging with 18 % technical failures, even in an expert center.

OP253V ENDOSCOPIC RESSOLUTION OF COMPLEX ADVERSE EVENTS AFTER PANCREATIC SURGERY

Authors Vila J.J.¹, Jusué V.¹, Rodríguez Mendiluce I.¹, Hervás N.¹, Arrubla A.¹, Carrascosa J.¹, Fernández-Urién I.¹, Uribarri L.¹

Institute 1 Hospital Universitario de Navarra, Endoscopy Unit. Gastroenterology Dpt., Pamplona, Spain

DOI 10.1055/s-0042-1744816

62 yo woman developed collection, jaundice and duodenal stenosis after pancreatotomy. After endoscopic collection drainage, ERCP shows disruption of the pancreatic duct to the collection and biliary stenosis. Two months later acute cholangitis with biliary dysruption is diagnosed. A duodenal fistula is communicated with the collection and pancreatic duct. Biliopancreatic clinical improvement but worsening of the duodenal stenosis with oral intolerance,

which prevents the passage of the duodenoscope to the second duodenal portion for stent exchange. EUS-guided endoscopic gastroduodenostomy is performed and the papillary area is accessed retrogradely. These complex post-surgical complications could be resolved by combining several endoscopic techniques.

OP254 COMPARATIVE DIAGNOSTIC PERFORMANCE OF END-CUTTING FINE-NEEDLE BIOPSY NEEDLES FOR ENDOSCOPIC ULTRASOUND TISSUE SAMPLING OF SOLID PANCREATIC MASSES: A NETWORK META-ANALYSIS

Authors Gkolfakis P.¹, Crinò S.F.², Tziatzios G.³, Ramai D.⁴, Papaefthimiou A.⁵, Papanikolaou I.³, Triantafyllou K.³, Arvanitakis M.¹, Lisotti A.⁶, Fusaroli P.⁶, Mangiavillano B.⁷, Carrara S.⁸, Repici A.⁸, Hassan C.⁸, Facciorusso A.⁹

Institutes 1 Erasme University Hospital, Department of Gastroenterology, Hepatopancreatology and Digestive Oncology, Brussels, Belgium; 2 The Pancreas Institute, University Hospital of Verona, Department of Medicine, Gastroenterology and Digestive Endoscopy Unit, Verona, Italy; 3 Medical School, National and Kapodistrian University of Athens, "Attikon" University General Hospital, Hepatogastroenterology Unit, Second Department of Internal Medicine-Propaedeutic, Athens, Greece; 4 University of Utah Health, Salt Lake City, United States; 5 University Hospital of Larissa, Department of Gastroenterology, Larissa, Greece; 6 Hospital of Imola, Gastroenterology Unit, Imola, Italy; 7 Humanitas – Mater Domini, Gastrointestinal Endoscopy Unit, Castellanza, Italy; 8 IRCCS Humanitas Research Hospital, Department of Gastroenterology, Milan, Italy; 9 University of Foggia, Gastroenterology Unit, Department of Surgical and Medical Sciences, Foggia, Italy

DOI 10.1055/s-0042-1744817

Aims We performed a systematic review with network meta-analysis to compare the diagnostic accuracy of available FNB needles for sampling of solid pancreatic lesions.

Methods A systematic literature review (MEDLINE and Cochrane Database) was conducted for studies evaluating the accuracy of newer FNB needles in adults undergoing EUS-guided sampling of solid pancreatic masses. Primary outcome was diagnostic accuracy. Secondary outcomes were sample adequacy, diagnostic sensitivity, specificity, and adverse event rate.

Results Overall, 16 RCTs (1934 patients) were identified. On network meta-analysis, Franseen needle significantly outperformed reverse bevel needle [risk ratio (RR) 1.21(1.05-1.40) for accuracy and 1.31(1.05-1.22) for adequacy] and fine-needle aspiration (FNA: RR 1.21(1.01-1.25) for accuracy and 1.07(1.02-1.13) for adequacy). Likewise, Fork-tip needle was significantly superior to reverse bevel needle [RR 1.17(1.03-1.33) for accuracy and 1.09(1.02-1.16) for adequacy] and to FNA (RR 1.09(1.01-1.19) for accuracy and 1.03(1.01-1.07) for adequacy). Other comparisons did not achieve statistical significance. As a consequence, Franseen (SUCRA score 0.89 for accuracy and 0.94 for adequacy) and Fork-tip needle (SUCRA score 0.76 for accuracy and 0.73 for adequacy) ranked as the two highest-performing FNB needles. When considering different needle sizes, 25G Franseen and 25G Fork-tip needle were not superior to 22G reverse bevel needle [RR 1.18(0.96-1.46) and RR 1.04(0.62-1.52)]. None of the tested needles resulted significantly superior to the other FNB devices nor to FNA when rapid on-site cytological evaluation was available.

Conclusions Franseen and Fork-tip needle, particularly with 22G size, showed the highest performance for tissue sampling of pancreatic masses, with low confidence in estimates.

OP255 GOOD FOR THE ENVIRONMENT AND THE POCKET– AN AUDIT OF WASTE GENERATION AND RECYCLING PRACTICES WITHIN AN IRISH ENDOSCOPY UNIT

Authors O'Morain N.^{1,2,3}, Joy E.³, Donohoe E.², Doherty J.^{1,2,3}, Stack R.^{1,2,3}, Mulcahy H.^{1,2,3}, McDermott E.^{1,2}

Institutes 1 St. Vincent's University Hospital, Centre for Colorectal Disease, Dublin, Ireland; 2 St. Vincent's University Hospital, Endoscopy Department, Dublin, Ireland; 3 University College Dublin, School of Medicine, Dublin, Ireland

DOI 10.1055/s-0042-1744818

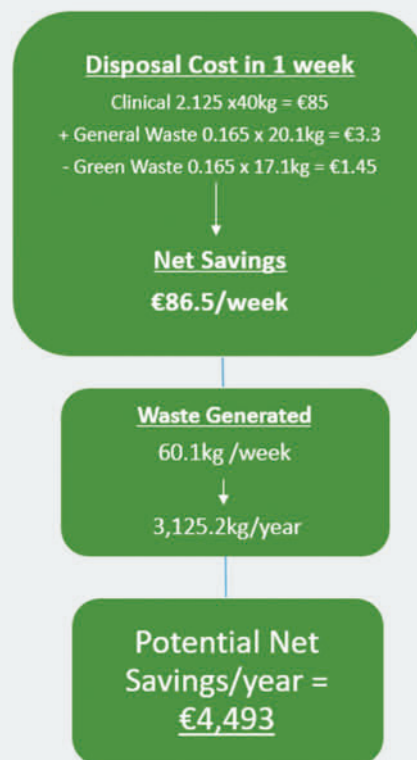
Aims Ireland has one of the highest greenhouse gas emissions per capita in the EU, at 13.3 metric tons of CO₂ equivalent/person. Healthcare accounts for 30% of all public sector greenhouse gas emissions. General waste accounts for almost 60% of waste generated in Irish hospitals. It has been estimated that 1/3 of this could be recycled. A large volume of recyclable waste is generated in Endoscopy, however sustainable practices are not currently promoted. This quality improvement project sought to determine the volume of recyclable waste generated within Endoscopy and whether use of green bin would be a cost-effective strategy.

Methods Waste generated by patient-related activity over one week was audited. Non-clinical and clinical waste was weighed and sorted, with the percentage of recyclable waste documented and net cost savings calculated. Reduction in carbon dioxide emissions (CO₂e) was calculated.

► Table 1

Waste Type	Disposal Cost/Tonne
Clinical Waste	€2125
Non-Clinical Waste	€165
Green Waste	€85

Results In total, 70 non-clinical and 56 clinical waste bags were collected. Median weight for non-clinical waste was 20.1kg (IQR 19.7–21.7kg) and 40kg (IQR 28.8–39.0kg) for clinical waste. Median of 14.1kg (70.5%) of non-clinical and 3kg (7.5%) of clinical waste was recyclable. Disposal cost/tonne summarised in Table 1. Net savings of €86.5/week was generated, and a reduction in carbon footprint by 21.7kg CO₂e. This equates to a cost saving of €4,498 per year (Figure 1), and a reduction in CO₂e of 1,128.4kg.



► Fig. 1

Conclusions This audit highlights the impact sustainable practices can have on waste management in Endoscopy. A considerable volume of waste generated can be recycled with significant cost savings and reductions in CO₂e.

OP256 RATIONALISING THE USE OF SPECIMEN POTS FOLLOWING COLORECTAL POLYPECTOMY– A SMALL STEP TOWARDS GREENER ENDOSCOPY

Authors Yong K.K.¹, He Y.², Cheung H.C.², Sriskandarajah R.², Jenkins W.², Beg S.¹

Institutes 1 Imperial College Healthcare NHS Trust, Gastroenterology, London, United Kingdom; 2 Imperial College School of Medicine, London, United Kingdom

DOI 10.1055/s-0042-1744819

Aims Endoscopy departments are responsible for the third highest rate of hospital related greenhouse gas (GHG) emissions. In this study, we aim to determine whether combining multiple diminutive colorectal polyps within a single specimen pot can reduce waste without causing deleterious clinical impact.

Methods This was a retrospective observational study of colorectal polyps resected during 2019, within the Imperial College Healthcare Trust. The numbers of pots for polypectomy specimens were calculated and corresponding histology results were extracted. We modelled the potential specimen pot savings if all polyps were sent together and the number of advanced lesions we would not be able to locate if we adopted this strategy. GHG emissions were estimated based on previous study using a Life Cycle Assessment, at 0.28kg CO₂ per pot.

Results A total of 11,781 lower GI endoscopies were performed. There were 5134 polyps removed and 4192 pots used. This equates to 1,174 kg CO₂ released. There were 4568(90%) polyps measuring 0–10mm. 7(0.2%) of these diminutive polyps were cancers and 18(0.4%) with high-grade dysplasia. 2(8%)

of these lesions were predicted to have advanced histology at the time of endoscopy. If we combined all diminutive polyps in a single pot, the total pots used would be reduced to 2779.

Conclusions A change in practice by placing diminutive polyps collectively in one pot would have resulted in GHG emission savings equivalent to 438 pounds of coal combustion. The reduction in GHG emissions from judicious use of specimen pots would be amplified with a change in practice on a national level.

OP257 GREEN ENDOSCOPY TO REDUCE CO_{2E} GENERATED BY ENDOSCOPIC WASTE – GECO_{2E}

Authors Cunha Neves J.A.^{1,2}, Roseira J.^{1,2}, Queirós P.^{1,2}, Tavares de Sousa H.^{1,2}, Pellino G.^{3,4}, Cunha M.F.^{5,2}

Institutes 1 Centro Hospitalar Universitário do Algarve, Gastroenterology, Portimão, Portugal; 2 ABC – Algarve Biomedical Centre, University of Algarve, Faro, Portugal; 3 Università degli Studi della Campania “Luigi Vanvitelli, Department of Advanced Medical and Surgical Sciences, Naples, Italy; 4 Vall d’Hebron University Hospital, Colorectal Surgery, Barcelona, Spain; 5 Centro Hospitalar Universitário do Algarve, Colorectal Group – General Surgery, Portimão, Portugal

DOI 10.1055/s-0042-1744820

Aims Endoscopy is healthcare’s third largest waste generating procedure. An overview on green endoscopy was recently published. We aimed to measure our unit’s carbon footprint and perform a pioneer evaluation applying the principles of green endoscopy towards a more sustainable unit.

Methods A 3-stage prospective study was conducted. Stage 1: 4-week observational audit, during which daily endoscopic waste (landfill, biohazard, contaminated, recycled paper and plastic) was weighed. Stage 2: 1-week intervention concerning presentation of retrieved data and education of the team towards waste handling. Recycling bins were placed in endoscopy rooms, and landfill and biohazard bins were relocated. Stage 3: 4-week post-interventional period, throughout which daily endoscopic waste was weighed. An engineer-calibrated scale was used. Equivalence of 1kg of landfill waste to 1CO_{2e} and 1kg of biohazard waste to 3CO_{2e} were applied. Statistics: paired samples T-test.

Results Total waste and biohazard waste were diminished by 12.2% (p = 0.166) and 41.4% (p = 0.010), respectively, whereas landfill waste (p = 0.059) and recycling waste increased (paper: p = 0.001; plastic: p = 0.007). In terms of CO_{2e}, a total decrease of 31.6% (138.8CO_{2e}) was verified (mean – pre vs. post-intervention: 109.7 vs. 74.9, p = 0.018). Mean endoscopy load was similar (pre vs. post-intervention: 46.2 vs. 44.5, p = 0.275), and all personnel agreed “the project did not disturb daily work”.

Conclusions We present the results from the first study applying green endoscopy principles to a real-world scenario. Biohazard waste reduction and daily-recycling were feasible and did not compromise endoscopy productivity. A yearly reduction of 1665.6CO_{2e} may be achieved in our endoscopy unit.

OP258 SOCIOECONOMIC STATUS AND THE ODDS OF INCOMPLETE COLONOSCOPY IN COLORECTAL CANCER SCREENING

Authors Skau Jørgensen B.¹, Deding U.^{1,2}, Kaalby Møller L.^{1,2}, Baatrup G.^{1,2}, Kobaek-Larsen M.^{1,2}, Al-Najami I.¹

Institutes 1 Odense University Hospital, Department of Surgery, Odense C, Denmark; 2 University of Southern Denmark, Department of Clinical Research, Odense M, Denmark

DOI 10.1055/s-0042-1744821

Aims Eight percent of colonoscopies performed in the Danish Colorectal Cancer Screening Program are incomplete. Our aim was to investigate the association between socioeconomic status (SES) and incomplete colonoscopy (IC) in the Screening Program.

Methods We conducted a register-based study utilizing data from the Danish Colorectal Cancer Screening Database and various Danish national registers. 71,973 participants with positive Fecal Immunochemical Tests were included. Main exposure was SES status defined by income and education level. Income was divided into quartiles, and education was categorized as basic school, high school/vocational education and higher education. Outcome was defined by complete or incomplete colonoscopy, stratified by reason for IC. Analyses were done using multivariate logistic regressions adjusting for age, gender, civil status, comorbidity and use of peristalsis-affecting medicine.

Results

► Table 1

Income	OR Inadequate bowel preparation	P-value	OR Other causes	P-value
1st quartile	1.67 95% CI [1.46;1.91]	<0.001	1.19 95% CI [1.05;1.35]	0.008
2nd quartile	1.38 95% CI [1.21;1.56]	<0.001	1.19 95% CI [1.06;1.34]	0.004
3rd quartile	1.17 95% CI [1.03;1.33]	0.014	1.05 95% CI [0.93;1.19]	0.422
4th quartile	Ref.		Ref.	

The odds ratio (OR) of having an IC due to inadequate bowel preparation was 1.67 (95% CI: 1.46;1.91) in the 1st income quartile, 1.38 (95% CI: 1.21;1.56) in the 2nd quartile and 1.17 (95% CI: 1.03;1.33) in the 3rd quartile compared to the 4th quartile. An OR of 0.87 (95% CI: 0.79;0.97) was estimated for high school/vocational education compared to higher education, whereas basic school was not significantly different. OR of 1.19 (95% CI: 1.05;1.35) for 1st income quartile and 1.19 (95% CI: 1.06;1.34) for 2nd quartile was estimated for IC due to other causes, whereas no differences in OR for educational level was found.

Conclusions SES was associated with increased odds of IC, especially measured by income and to a lesser degree for educational level.

OP259 SYSTEMATIC REVIEW AND META-ANALYSIS: THE GLOBAL THREE-YEAR POST-COLONOSCOPY COLORECTAL CANCER RATE AS PER THE WORLD ENDOSCOPY ORGANIZATION METHODOLOGY

Authors Kader R.^{1,2,3}, Hadjicolaou A.V.^{4,5}, Burr N.E.^{6,7}, Bassett P.⁸, Pedersen L.⁹, Valori R.¹⁰, Chand M.², Stoyanov D.^{1,2}, Lovat L.B.^{1,2,3}

Institutes 1 University College London (UCL), Wellcome/EPSRC Centre for Interventional and Surgical Sciences (WEISS), London, United Kingdom; 2 UCL, Division of Surgery and Interventional Sciences, London, United Kingdom; 3 University College London Hospital, London, United Kingdom; 4 Cambridge University Hospitals, Department of Gastroenterology, Cambridge, United Kingdom; 5 University of Cambridge, MRC Cancer Unit, Cambridge, United Kingdom; 6 Mid Yorkshire Hospitals NHS Trust, Department of Gastroenterology, Wakefield, United Kingdom; 7 The University of Leeds, Cancer epidemiology group, Leeds, United Kingdom; 8 Stats Consultancy, Amersham, United Kingdom; 9 Aalborg University Hospital, Department of Surgical Gastroenterology, Aalborg, Denmark; 10 Gloucestershire Hospitals NHS Foundation Trust, Department of Gastroenterology, Gloucester, United Kingdom

DOI 10.1055/s-0042-1744822

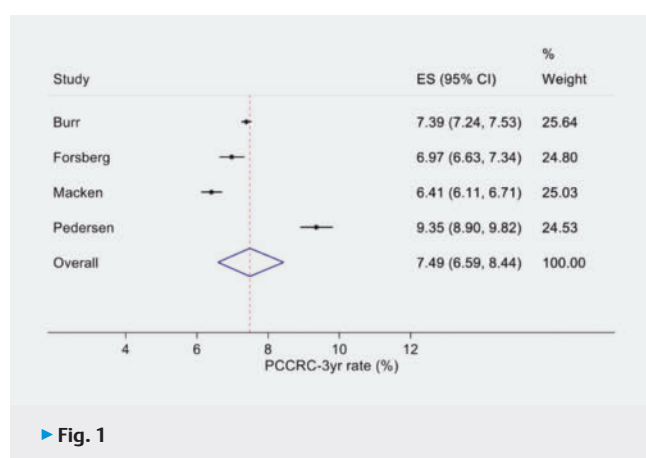
Aims Colorectal cancer (CRC) that occur after a negative colonoscopy is called post-colonoscopy colorectal cancer (PCCRC). Until recently, it has been difficult

to compare global performance due to different methods used to define PCCRC rates. In 2018, the World Endoscopy Organization (WEO) standardised the methodology to calculate unadjusted PCCRC-3yr rates (PCCRC-3yr).

The PCCRC-3yr is a “false-negative” rate of CRC diagnosed by colonoscopy. A recent systematic review investigated PCCRC-3yr rates but included studies outside the WEO’s methodology. Therefore, the true global prevalence of PC-CRC as per the WEO methodology remains unknown.

Methods We searched six databases for studies calculating the PCCRC-3yr rate using the WEO methodology. We performed a systematic review and meta-analysis to calculate the global PCCRC prevalence, change in prevalence over time and associated characteristics.

Results We identified four studies reporting 13,791 PCCRCs. The pooled PC-CRC prevalence is 7.5 % (95 % CI = 6.6–8.4 %) with high heterogeneity ($I^2 = 98\%$). Compared to the combined baseline year category of 2011–12, the odds of PCCRC occurrence were significantly higher in 2008–2010 (OR 1.12 (95 % CI = 1.01–1.24), $p = 0.03$) and 2004–2007 (OR 1.19, 95 % CI = 1.06–1.33, $p = 0.03$) with high heterogeneity.



► Fig. 1

Patients with inflammatory bowel diseases (IBD) had a pooled PCCRC-3yr rate of 29.3 % (95 % CI = 21.3–38.1 %) and OR of 6.17 (95 % CI = 1.06–1.33) with high heterogeneity. The pooled PCCRC-3yr rate in the right colon was 8.6 % (95 % CI = 8.3–8.8 %), OR 1.51 (95 % CI = 1.41–1.61) compared to left-sided disease.

Conclusions The global pooled PCCRC prevalence was 7.5 %, with rates reducing overtime. IBD patients have over six times higher odds than those without for developing PCCRC.

OP260 RISK FACTORS FOR UNDERESTIMATION OF PATIENT PAIN IN OUTPATIENT COLONOSCOPY

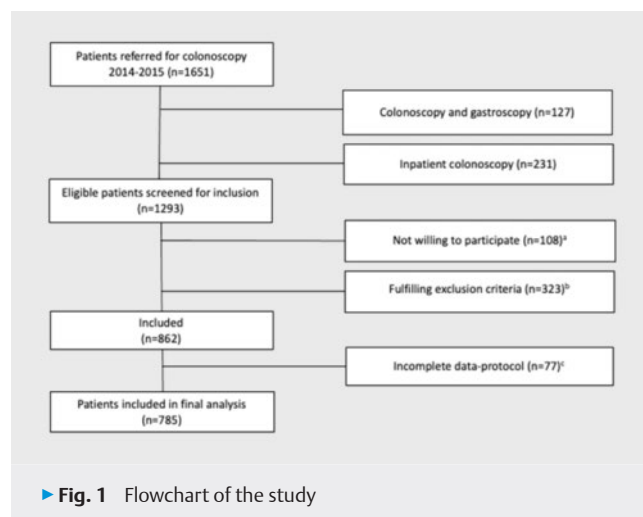
Authors Ryhlander J.¹, Ringström G.¹, Lindkvist B.^{1,2}, Hedenström P.^{1,2}

Institutes 1 Division of Medical Gastroenterology, Department of Internal Medicine, Sahlgrenska University Hospital, Gothenburg, Sweden; 2 Sahlgrenska Academy at University of Gothenburg, Department of Molecular and Clinical Medicine, Institute of Medicine, Gothenburg, Sweden
DOI 10.1055/s-0042-1744823

Aims Adequate management of patient pain and discomfort during colonoscopy is crucial to obtain a high-quality examination. We aimed to investigate the ability of endoscopists and endoscopy assistants in accurately assessing patient pain in colonoscopy.

Methods This was a single-center, cross-sectional study including patients scheduled for outpatient colonoscopy. Procedure-related pain, as experienced by the patient, was scored on a verbal rating scale (VRS). Endoscopists and endoscopy assistants rated patient pain likewise. Cohen’s kappa was used to measure the agreement in between ratings and logistic regression applied to test for potential predictors associated with underestimation of moderate-severe pain.

Results In total, 785 patients [median age: 54 years; females: $n = 413$] were included. Mild, moderate, and severe pain was reported in 378/785 (48 %), 168/785 (22 %), and 111/785 (14 %) procedures respectively. Inter-rater reliability of patient pain comparing patients with endoscopists was $\kappa = 0.29$, $p < 0.001$ and endoscopy assistants and patients $\kappa = 0.37$, $p < 0.001$ (fair agreement). In the 279 patients reporting moderate/severe pain, multivariable analysis showed that male gender (OR = 1.79), normal BMI (OR = 1.71), no history of abdominal surgery (OR = 1.81), and index-colonoscopy (OR = 1.81) were factors associated with a significant risk for underestimation of moderate/severe pain by endoscopists. Young age (OR = 2.05) was the only corresponding factor valid for endoscopy assistants.



► Fig. 1 Flowchart of the study

Conclusions In colonoscopy, estimation of patient pain by endoscopists and endoscopy assistants is often inaccurate. Endoscopists need to pay specific attention to subgroups of patients, such as male gender and normal BMI, among whom there seems to be an important risk of underestimation of moderate-severe pain.

Polypectomy including cold snare
Saturday, 30 April 2022

14:00–15:00
Club E

OP261 HOT VS COLD EMR FOR THE TREATMENT OF SESSILE COLORECTAL LESIONS OVER 10 MM

Authors Boeva I.¹, Karagoyozov P.², Tishkov I.²

Institutes 1 Acibadem City Clinic Tokuda Hospital, Department of Interventional Gastroenterology, Sofia, Bulgaria; 2 Acibadem City Clinic Tokuda Hospital, Department of Interventional Gastroenterology, Sofia, Bulgaria
DOI 10.1055/s-0042-1744824

Aims We aim to compare cold and hot snare endoscopic mucosal resection (CSP-EMR, HSP-EMR) in the management of sessile and flat colorectal polyps larger than 10 mm.

Methods Analysed data included endoscopic procedures from January 2019 to December 2020. A total of 164 polypectomies of flat lesions were performed in 108 patients. Lesions were classified according to Paris and J-NET classifications. Both techniques consisted of submucosal injection, followed by en bloc or piece-meal resection. Technical success was defined as complete endoscopic resection. Efficacy was established as the absence of local occurrence during the first follow-up colonoscopy. Adverse events following the procedures were collected and analysed.

Results 79 lesions (in 51 patients) were treated with HS-EMR and 85 lesions (in 57 patients) with CS-EMR. The average polyp size was 17.0 mm in the CS group and 18.5 mm in HS group ($p > 0.05$). Technical success was achieved in 100 % in the hot snare and 98.8 % in CS-EMR ($p > 0.05$). Local recurrence was

detected in 3.52 % (3 lesions) after CS-EMR and in 5.06 % (4 lesions) after HS-EMR ($p > 0.05$). No perforation was observed in the two groups. Delayed bleeding was observed in two cases (2.53 %) in the HS group, no bleeding was encountered in the CS group ($p > 0.05$). Post-polypectomy syndrome occurred in 0.57 % in the CS and 7.8 % in the HS group ($p < 0.05$).

Conclusions CS-ERM may have similar efficacy to HS-EMR in the treatment of sessile and flat lesions over 10 mm. CS-EMR is a safe treatment option and may offer certain advantages regarding adverse events.

OP262 COLD SNARE POLYPECTOMY (CSP)/COLD EMR (C-EMR) FOR MEDIUM-SIZED (10-19MM) SESSILE COLONIC POLYPS: A PROSPECTIVE MULTICENTRE STUDY

Authors Mangira D.¹, Raftopoulos S.², Hartley I.¹, Mack A.¹, Gazelakis K.¹, Nalankilli K.¹, Trinh A.³, Metz A.³, Appleyard M.⁴, Grimpén F.⁴, Elliott T.⁵, Brown G.⁶, Moss A.¹

Institutes 1 University of Melbourne, Department of Gastroenterology, Western Health, Melbourne, Australia; 2 Peel Health Campus, Department of Gastroenterology, Perth, Australia; 3 Royal Melbourne Hospital, Department of Gastroenterology, Melbourne, Australia; 4 Royal Brisbane and Women's Hospital, Department of Gastroenterology, Brisbane, Australia; 5 Ballarat Base Hospital, Department of Internal Medicine, Ballarat, Australia; 6 The Alfred, Department of Gastroenterology, Melbourne, Australia

DOI 10.1055/s-0042-1744825

Aims CSP is the standard of care for resecting small (<10mm) colonic polyps. However, limited data exists for its efficacy for medium-sized (10-19mm) sessile polyps. This study evaluated the efficacy and safety of CSP/C-EMR for medium-sized sessile colonic polyps.

Methods An Australian prospective multicentre study was conducted between May-2018 and June-2021, including all consecutive cases of CSP/C-EMR for 10-19mm sessile colonic polyps. Once resection was deemed complete, the margins of resection sites were biopsied circumferentially and centrally. Primary outcome: presence of residual polyp in these biopsy specimens. Secondary outcomes: recurrence rate at first surveillance colonoscopy and rates of adverse events.

Results CSP/C-EMR was performed for 350 polyps in 295 patients. Median polyp size: 15mm. Submucosal injection to lift polyps was used in 87.1 % ($n = 305$) of polyps. Histology: 68.5 % adenomas, 26.2 % SSA/P without dysplasia, 3.8 % SSA/P with dysplasia and 1.4 % hyperplastic polyps. Primary outcome: Margin and central biopsies were positive in 1.7 % ($n = 6$) and 0.3 % ($n = 1$) of polyps respectively. Secondary outcomes: Polyp recurrence was present in 1.7 % ($n = 4$) of cases at first surveillance colonoscopy that had been completed for 64.2 % ($n = 225$) of polyps at a median interval of 9.7 months. Adverse events occurred in 3.4 % ($n = 10$) of patients: 1 had intraprocedural bleeding (clipped), 3 had self-limiting post-polypectomy bleeding, 4 had post-polypectomy pain and 2 had post-polypectomy syndrome. There were no perforations.

Conclusions CSP/C-EMR for 10-19mm sessile colonic polyps is highly effective and safe. Rates of incomplete resection and recurrence at surveillance were low, with few adverse events.

OP263V UNDERWATER ENDOSCOPIC SUBMUCOSAL DISSECTION OF A RECURRENT COLONIC ADENOMA

Authors Luglio G.¹, Cecinato P.¹

Institute 1 AUSL IRCCS Reggio Emilia, Gastroenterology and Digestive Endoscopy, Reggio Emilia, Italy

DOI 10.1055/s-0042-1744826

A patient with recurrent adenoma after piecemeal resection of a transverse colon LST was referred to our hospital. Endoscopy showed two sessile polyps (Kudo IV) with central scar (30 mm in total). Colon was filled with saline, underwater ESD was performed using Dual Knife (Olympus, Tokyo). Due to severe

fibrosis, it was impossible to dissect mucosal and muscular layers so we resected muscular tissue, preserving serosal layer. Dissection was completed and tumor removed en bloc without adverse events. Specimen showed HGD adenoma and R0. Our case shows that underwater ESD is safe and effective for recurrent adenomas with severe fibrosis.

OP264V LATERALLY SPREADING TUMOR EXTENDING TO THE DENTATE LINE: CHALLENGES OF ENDOSCOPIC SUBMUCOSAL DISSECTION (ESD)

Authors Alves da Silva J.I.¹, Falcão D.¹, Archer S.¹, Marcos-Pinto R.¹, Pedroto I.¹, Küttner-Magalhães R.¹

Institute 1 Centro Hospitalar Universitário do Porto, Porto, Portugal

DOI 10.1055/s-0042-1744827

82-year-old male referred due to a 56mm nodular-mixed type laterally-spreading tumour, Paris 0-Is + IIa, JNET type-2B, located in the distal rectum, extending to the anal verge.

Endoscopic submucosal dissection (ESD) initiated with incision distal to the anal verge, involving 50 % of its circumference, followed by the creation of a tunnel in an oral direction. A proximal mucosal incision was made to establish the tunnel's endpoint. Progressive widening of the tunnel was performed until complete en bloc resection.

Rectal tumors extending to the dentate line are demanding to remove. Combination of anoderm incision, tunnel creation and retroversion allows en bloc ESD.

OP265 HYBRID ENDOSCOPIC SUBMUCOSAL DISSECTION IN PATIENTS WITH RECURRENT COLORECTAL LESIONS

Authors Steshenko A.¹, Zakcharchuk A.¹, Kiosov A.¹, Trashkova N.², Tkachov V.¹

Institutes 1 Zaporizhzhia State Medical University, Faculty Surgery Department, Zaporizhzhia, Ukraine; 2 Medical Centre "VITACENTER", Endoscopy Department, Zaporizhzhia, Ukraine

DOI 10.1055/s-0042-1744828

Aims To assess the effectiveness of hybrid endoscopic dissection in the management of recurrent colorectal lesions in the two years follow up.

Methods Our study included 27 patients with recurrent colorectal lesions. All cases were divided into two groups. The first group included 14 patients (51.85 %; age – 54.73 ± 9.7 ; males – 57.14 %) who underwent hybrid endoscopic submucosal dissection. The second group included 13 patients (48.14 %; age – 53.22 ± 10.6 ; males – 53.84 %) who underwent standard submucosal dissection. Evaluation of outcomes included the incidence of adverse event rate, perforations, the proportion of en-bloc resections, the incidence of recurrence in the long term, and surgery.

Results In the first group, the overall incidence of complications and perforations was lower ($p < 0.05$) compared to the second. However, the rates of en-bloc resections in the second group was higher 78.6 %. The average size of lesions in both groups was 25.54 mm (SD standard deviation – 11.44). There was no difference in rates of recurrences ($p > 0.05$). In both groups there was no need for surgery. All statistical analyzes were performed using SPSS V27.0 software (IBM).

Conclusions In cases of recurrent colorectal lesions hybrid endoscopic submucosal dissection has a lower rate of complications, decreased procedure duration. However, there is no statistical difference in the frequency of recurrence in the long term follow up period compared to standard dissection. Which may indicate a safer use of hybrid submucosal dissection in recurrent tumors with a risk of submucosal fibrosis.

OP266V ESD OF A LARGE CECAL POLYP INVOLVING THE ILEOCECAL VALVE AND THE TERMINAL ILEUM

Authors [Mavrogenis G.¹](#), [Bazerbachi F.²](#), [Mpalomenos D.¹](#), [Tsevgas I.¹](#), [Zachariadis D.¹](#)

Institutes 1 [Mediterraneo Hospital, Hybrid Interventional Endoscopy, Glyfada, Greece](#); 2 [Centracare, Gastroenterology, Minnesota, United States](#)
DOI [10.1055/s-0042-1744829](#)

Aim An 83-year-old man was referred for endoscopic resection of a large cecal polyp that involved the ileocecal valve and extended 1 cm upstream in the terminal ileum.

Methods The lesion was removed en block by means of ESD using various techniques: clip and band multifocal traction, pocket creation method, under-saline immersion technique, and various ESD-knives (Dual Knife, IT Knife). The lesion was removed en-block. Histology showed R0 resection of a 6 cm tubulo-villous adenoma with low grade dysplasia. Conclusion: We demonstrate the successful resection of a large ileocecal polyp with terminal ileum involvement by means of various ESD techniques.

Advanced diagnostic and therapeutic

EUS techniques

Saturday, 30 April 2022

14:00–15:00

Club H

OP267 SAFETY AND EFFICACY OF DOUBLE EUS-BYPASS VERSUS SURGICAL HEPATICOJEJUNOSTOMY AND GASTROJEJUNOSTOMY

Authors [Bronswijk M.^{1,2}](#), [Lauwereys J.^{1,2}](#), [van Malenstein H.¹](#), [Laleman W.¹](#), [Jaekers J.³](#), [Topal H.³](#), [Topal B.³](#), [Kunda R.⁴](#), [Van der Merwe S.¹](#)

Institutes 1 [University Hospitals Gasthuisberg, University of Leuven, Department of Gastroenterology and Hepatology, Leuven, Belgium](#); 2 [Imelda Hospital Bonheiden, Department of Gastroenterology and Hepatology, Bonheiden, Belgium](#); 3 [University Hospitals Gasthuisberg, University of Leuven, Department of Visceral Surgery, Leuven, Belgium](#); 4 [University Hospital Brussels, Department of Surgery, Department of Gastroenterology and Hepatology, Department of Advanced Interventional Endoscopy, Brussels, Belgium](#)

DOI [10.1055/s-0042-1744830](#)

Aims Both gastric outlet obstruction (GOO) and biliary obstruction may occur simultaneously in individual patients. Small series have suggested that double EUS-bypass is feasible. Our aim was to compare same-session double EUS-bypass to open surgical hepaticojejunostomy and gastrojejunostomy.

Methods A tertiary single-center retrospective analysis was performed of all consecutive double EUS-procedures performed from 2018 to March 2021. Consecutive historical surgical controls were extracted from the institutional database. For EUS-guided gastroenterostomy the WEST-technique was used, whereas for biliary obstruction, EUS-guided hepaticogastrostomy, rendez-vous, choledochobulbostomy or antegrade stenting were allowed.

Results In total (n = 42), 12 patients (28.6%) were treated with EUS and 30 patients with surgery (71.4%). At baseline, EUS-treated patients showed a higher Charlson Comorbidity Index (9.0 vs. 6.5, p = 0.011). Technical success was achieved in 91.7% of EUS-treated patients vs. 100% in the surgical group (p = 1.000). Clinical success, defined as a GOOS score > 2 and serum bilirubin decrease > 50%, was achieved in 66.7% and 70.0% respectively (p = 0.833). In the EUS group, median time to oral intake (1.0 vs. 6.0 day(s), p < 0.001) and median hospital stay were significantly shorter (11.0 vs 23.0 days, p = 0.001). Using the ASGE lexicon, the total number of adverse events (AE) was similar in both groups (5 [41.7%] vs. 15 [46.7%] events, p = 1.000), with an even distribution in severe, moderate and mild AE.

Conclusions Despite being used in a patient population with more comorbid conditions and more advanced disease stage, double EUS-bypass achieved

similar efficacy and safety, as well as shorter hospital stay and time to oral intake, when compared to surgery.

OP268 DEDICATED DIGITAL MRNA DETECTION METHOD WITH EUS FNA SAMPLES FOR ESTABLISHING PANCREATIC ADENOCARCINOMA (PDAC) GENE EXPRESSION PROFILE SIGNATURE

Authors [Pedrosa L.¹](#), [Araujo I.K.²](#), [López S.³](#), [Maurel J.⁴](#), [Cuatrecasas M.³](#), [Sendino O.²](#), [Saurí T.⁴](#), [Soy G.⁵](#), [Fernández-Esparrach G.²](#), [Ausania F.⁶](#), [Vaquero E.C.⁵](#), [Ginès A.²](#)

Institutes 1 [IDIBAPS, Barcelona, Spain](#); 2 [Endoscopy Unit, ICMDiM. Hospital Clínic, Barcelona, Spain](#); 3 [Pathology Department, CDB. Hospital Clínic, Barcelona, Spain](#); 4 [Oncology Department, ICMHO. Hospital Clínic, Barcelona, Spain](#); 5 [Gastroenterology Service, ICMDiM. Hospital Clínic, Barcelona, Spain](#); 6 [Hepatobiliopancreatic Surgery, ICMDiM. Hospital Clínic, Barcelona, Spain](#)

DOI [10.1055/s-0042-1744831](#)

Aims To evaluate the adequacy of EUS FNA samples for performing gene expression analysis with digital mRNA and to investigate their correlation with gene expression profile (genEP) of the corresponding resected specimen.

Methods 22G/19G needles (both n = 9) (EUS-3 Cook®/Olympus EZ-shot®, respectively) were used. Number of passes was decided with rapid on site evaluation with an extrapass to ensure enough sample for molecular analysis. RNA was extracted from both HistoGel-embedded cytological specimens and from their corresponding formalin fixed paraffin embedded surgical specimens. The NanoString nCounter gene expression system (NanoString Technologies; Seattle, WA) was used for genEP, with a custom nCounter CodeSet (Integrated DNA Technologies, BVBA, Belgium) checking a panel of 52 genes (cancer associated fibroblasts, immune/myeloid-monocytic cells and checkpoint blockade and epithelial-mesenchymal transition). Heatmaps were developed using agglomerative clustering to compare genEP

Results Eighteen PDAC patients (11 females and 4 men) were included. Mean number of passes was 1.7 ± 0.7. All 36 samples (cellular blocks and resected specimens) passed the RNA quality control test for genomic analysis with Nanostring. A different pattern of genEP was found between cytologies and the surgically resected specimens. Enriched expression of more specific fibroblasts' genes was seen in samples from surgical specimens whereas samples from EUS FNA were enriched with immunological cells.

Conclusions Targeted mRNA expression in EUS FNA samples is feasible. EUS FNA samples might be an optimal approach for tumour immunophenotyping but not to identify fibroblast targets in PDAC

OP269 ENDOSCOPIC ULTRASOUND-GUIDED ANGIO-THERAPY USING COIL AND CYANOACRYLATE GLUE FOR THE MANAGEMENT OF VISCERAL ARTERY PSEUDOANEURYSMS IN PATIENTS OF PANCREATITIS: A SAFE AND EFFECTIVE TECHNIQUE

Authors [Samanta J.¹](#), [Dhar J.¹](#), [Birda C.L.¹](#), [Mandavdhare H.S.¹](#), [Gupta P.²](#), [Gorsi U.²](#), [Kumar K.H.³](#), [Gupta V.³](#), [Kochhar R.¹](#)

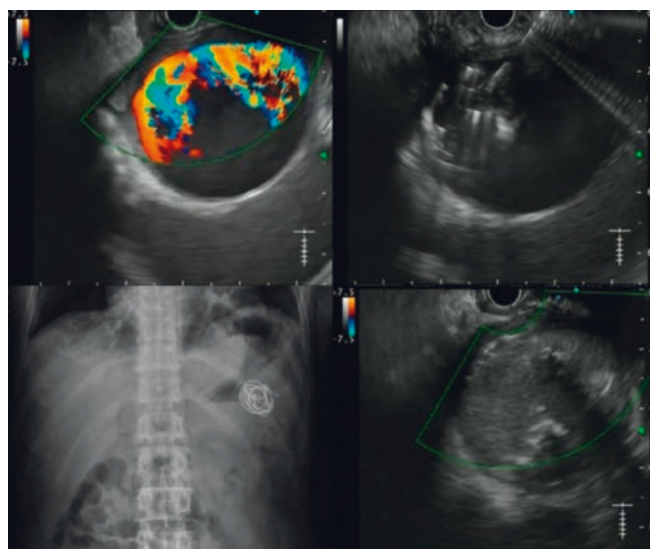
Institutes 1 [Postgraduate Institute of Medical and Research, Gastroenterology, Chandigarh, India](#); 2 [Postgraduate Institute of Medical and Research, Radiology, Chandigarh, India](#); 3 [Postgraduate Institute of Medical and Research, Surgery, Chandigarh, India](#)

DOI [10.1055/s-0042-1744832](#)

Aims Visceral artery pseudoaneurysms (PSA) can develop in patients with acute (AP) and chronic pancreatitis (CP) and EUS-guided angioembolisation (EUS-A) using coil and glue injection is a relatively newer modality with limited experience. This study aimed at studying the safety and efficacy of this modality for management of PSA in AP/CP patients.

Methods This study was conducted in a tertiary care center between September 2018–August 2021 including all consecutive AP or CP patients with visceral artery PSA, who were unsuitable for radiological angioembolisation. The patients underwent EUS-A using coil and cyanoacrylate glue (CYA) injection. The number of coils used and amount of CYA injected depended on the size of the PSA. PSA characteristics, technical success, and adverse events were documented.

Results A total of 15 patients (median age 44.0 (17–56) yrs; male 14; 93.3%) with 16 PSA underwent EUS-A. Most of the patients had underlying CP (12; 80.0%). The vessel involved was splenic artery in 12 (75.0%) followed by gastroduodenal artery (4; 25.0%). The median size of the PSA was 2.8 cm (0.9–9.7 cm). A median of 2 coils (1–8) and 2 ml of CYA (1–5 ml) was used. Complete obliteration in the first session was achieved in 15 PSA (93.8%). One patient had recurrence of PSA in the splenic artery 9 months post-procedure and was managed with repeat EUS-A. 1 patient developed splenic infarct post-embolization and managed conservatively. No other complications were documented.



► Fig. 1

Conclusions EUS-guided coil and CYA injection is a safe and effective alternative technique for the management of visceral artery PSA.

OP270 ROLE OF VASCULAR ENDOTHELIAL GROWTH FACTOR IN DETERMINING THE MALIGNANT POTENTIAL OF PANCREATIC CYSTS

Authors El-Nady M.¹, Altonbary A.², Hakim H.², Abou-Elmagd A.³, Abbas W.⁴, William K.¹

Institutes 1 Cairo University, Department of Gastroenterology and Hepatology, Cairo, Egypt; 2 Mansoura University, Department of Gastroenterology and Hepatology, Mansoura, Egypt; 3 Armed Forces college of medicine, Department of Gastroenterology and Hepatology, Cairo, Egypt; 4 Assiut University, Department of Gastroenterology and Hepatology, Assiut, Egypt

DOI 10.1055/s-0042-1744833

Aims Pancreatic cysts are accidentally discovered in about 13% of cross-sectional imaging. Cysts with mucinous content have higher malignant potential. Therefore, differentiation between benign and malignant cysts is crucial. The

aim of this study was to evaluate the possible roles of cystic fluid vascular endothelial growth factor A and R2 (VEGF-A and VEGF-R2) in differentiating between malignant and benign pancreatic cysts.

Methods This prospective study was conducted on 76 patients diagnosed with pancreatic cysts using different imaging modalities. All patients were subjected to full history taking, clinical examination and EUS with FNA of pancreatic cystic fluid. The aspirated fluid was tested for VEGF-A, VEGF-R2, CEA, and amylase.

Results Based on the final diagnosis, the mucinous cyst group included mucinous cystadenoma (17.1%), high grade IPMN (10.5%), low grade IPMN (7.9%), and pancreatic adenocarcinoma (5.3%). The non-mucinous cyst group included pancreatic pseudocysts (35.5%), serous cystadenoma (21.1%), and cystic lymphangioma (2.6%). When comparing the study groups regarding pancreatic cyst fluid markers (VEGF-A, VEGF-R2, amylase, and CEA), there was no significant difference between the two groups regarding all parameters ($p > 0.05$), except for CEA that was significantly higher in the mucinous group ($p < 0.001$). Using a cut-off value of 18 ng/ml, CEA has specificity of 82% in differentiating between mucinous and non-mucinous cysts. Combining CEA with VEGF-R2 increased the specificity to 94% ($p = 0.02$).

Conclusions VEGF-A and VEGF-R2 assay couldn't alone differentiate potentially malignant pancreatic cysts but combining CEA with VEGF-R2 can improve the diagnostic yield in identifying mucinous pancreatic cysts.

OP271 ADDED VALUE OF SECRETIN DURING MAGNETIC RESONANCE IMAGING TO IDENTIFY DUCTAL COMMUNICATION IN PANCREATIC CYSTIC NEOPLASMS (IMAGE-S): PROSPECTIVE STUDY

Authors Gorris M.^{1,2}, van Huijgevoort N.¹, Besselink M.², Struik F.³, Engelbrecht M.³, van Hooft J.⁴

Institutes 1 Amsterdam UMC, University of Amsterdam, Department of Gastroenterology and Hepatology, Amsterdam, Netherlands; 2 Amsterdam UMC, University of Amsterdam, Department of Surgery, Amsterdam, Netherlands; 3 Amsterdam UMC, University of Amsterdam, Department of Radiology, Amsterdam, Netherlands; 4 Leiden University Medical Center, Department of Gastroenterology and Hepatology, Leiden, Netherlands

DOI 10.1055/s-0042-1744834

Aims The key feature of side-branch intraductal papillary mucinous neoplasms (SB-IPMN) is its connection with the pancreatic ductal system. This feature could be helpful to distinguish potentially premalignant SB-IPMN from benign lesions. This study aimed to investigate if secretin-enhanced magnetic resonance cholangiopancreatography (s-MRCP) improved visualization of ductal connection in PCN.

Methods We performed a prospective pilot study including consecutive adult patients who underwent follow-up for at least one pancreatic cyst without clear pancreatic duct (PD) connection on conventional MRCP. Patients provided informed consent to undergo additional s-MRCP with 0.2 mg/kg intravenous secretin during routine follow-up. All scans were re-read by two experienced abdominal radiologists. Primary endpoint was clear PD connection (defined as the interpreting radiologist being more than 80% certain of PD connection).

Results We included 21 patients (median age 70 years [IQR 61–75 years], predominantly females [$n = 15$, 67%], median cyst size 18 mm [IQR 13–24 mm]). Both readers reported significantly higher pancreatic ductal visibility after s-MRCP when compared to conventional MRCP ($p = 0.030$ [Reader 1], $p = 0.041$ [Reader 2]). This did however not result in improved visibility of PD connection after s-MRCP ($p = 0.166$ for reader 1, $p = 0.807$ for reader 2).

► **Table 1** Lesion characteristics of the entire cohort.

Final diagnosis, n (%)	
Unspecified cyst	7 (33)
SCN	1 (5)
MCN	1 (5)
IPMN	12 (57)
Determination of final diagnosis, n (%)	
Reference MRI	16 (76)
EUS	2 (9.5)
EUS including cyst fluid analysis	2 (9.5)
EUS including cytological analysis	1 (5)

Conclusions The results of this pilot study showed that secretin-enhanced MRCP did increase pancreatic ductal visibility although it did not result in an increased visibility of PD connection in patients with PCN. Follow-up research should investigate if secretin-enhanced ductal visibility is of added value in more extensive MRI sequences to detect PD connection with PCN.

OP272V MAKING AND ENDOSCOPIC ULTRASONOGRAPHIC GUIDED COLO-RECTAL NEO-ANASTOMOSIS: THE CLOSE ENCOUNTER OF TWO LIGHTS

Authors Vargas García A.L.¹, Albuquerque M.¹, Pijoan E.¹, Figa M.², González-Húix F.³

Institutes 1 Clínica Girona-Hospital Palamós, Gastroenterology, Girona, Spain; 2 Clínica Girona, Gastroenterology, Girona, Spain; 3 Clínica Girona-Hospital Arnau de Vilanova, Gastroenterology, Girona, Spain
DOI 10.1055/s-0042-1744835

A 75 years-old female underwent anterior resection for rectosigmoid adenocarcinoma 3 months ago with the appearance of anastomotic leak so a loop ileostomy was made. During follow-up colonoscopy, an insurmountable anastomotic stricture was observed. Due to this finding, patient was referred to our center. We performed a transanal colonoscopy where a close anastomosis at 3-4cm from pectinate line was identified and other colonoscopy through stoma till the anastomosis where only a blind hole was observed. After many attempts to pass the guidewire through both anastomotic sides and patient's refuse to surgery, an endoscopic ultrasonographic guided colorectal neo-anastomosis was made.

**Complication management in the esophagus:
when things become really dirty** 15:30–16:30
Saturday, 30 April 2022 Club A

OP273 ENDOSCOPIC VACUUM THERAPY FOR PATIENTS WITH ANASTOMOTIC LEAKAGE AFTER ESOPHAGO-GASTRIC SURGERY

Authors Pattynama L.M.^{1,2}, Pouw R.E.², van Berge Henegouwen M.I.¹, Daams F.¹, Gisbertz S.S.¹, Bergman J.J.², Eshuis W.J.¹

Institutes 1 Amsterdam University Medical Centers, Dept. of Surgery, Amsterdam, Netherlands; 2 Amsterdam University Medical Centers, Dept. of Gastroenterology and hepatology, Amsterdam, Netherlands
DOI 10.1055/s-0042-1744836

Aims Anastomotic leakage (AL) after upper gastro-intestinal (UGI) surgery is associated with severe morbidity and mortality. Recently, endoscopic vacuum therapy (EVT) was introduced as treatment of AL. The aim of this study was to

describe outcomes of initial experiences with EVT in a tertiary referral center in AL treatment after esophago-gastric surgery.

Methods For this retrospective cohort study, all patients treated with EVT for AL in the UGI tract at a tertiary referral center, between January 2018 and October 2021, were included. This period, patients with AL were primarily treated with EVT. Data on patient characteristics, EVT and outcomes were analyzed. The primary endpoint was success rate of EVT alone, defined as closure of the defect assessed by endoscopy or CT-scan.

Results: 38 patients were included (31 men, mean age 66 yrs (SD 9.3)) (Table 1). Successful treatment was achieved in 28 patients (74%). In 10 patients EVT failed: one deceased during treatment (radiation pneumonitis) and 9 underwent additional surgery.

Median hospital stay was 42 days, median duration of EVT was 27 days, with median 6 EVT-related endoscopies and 5 days between sponge exchanges. 22 patients (58%) received additional drainage. EVT associated complications occurred in two patients (5%): in one patient the overtube caused iatrogenic defect expansion and one developed a tracheo-esophageal fistula.

► **Table 1** Baseline characteristics.

Total number of patients, n	38
Male	31
Female	7
Age in years, mean (range, SD)	66.3 (37-78, 9.3)
Neoadjuvant/perioperative therapy, n	37
None	6
Chemoradiotherapy	26
Chemotherapy	5
Operation technique, n	37
Ivor Lewis	22
McKeown	5
Salvage esophagectomy	1
Total gastrectomy with distal esophagectomy	2
Total gastrectomy	7
Anastomosis, n	38
Esophago-jejunal	12
Esophago-gastric	26
Intrathoracic	21
Cervical	5

Conclusions EVT is a paradigm shifting treatment potentially preventing surgical re-intervention in patients with AL after UGI surgery, with a 74% success rate. More experience with the technique and indications for use will likely improve success rates.

OP274 ENDOSCOPIC VACUUM THERAPY (EVT) FOR THE CLOSURE OF UPPER GASTROINTESTINAL DEFECTS: PRELIMINARY RESULTS FROM THE SPANISH EVT REGISTRY

Authors Sendino O.¹, Fernandez-Simon A.¹, Busquets D.², Zebenzuy A.³, García-Lledó J.⁴, Tejedor-Tejada J.⁵, Rodríguez de Santiago E.⁶, Junquera F.⁷, Moris M.⁸, Juzgado D.⁹, Ferrero E.¹⁰, Garrido C.¹¹, Gornals J.¹², Guamer-Argente C.¹³, Repiso A.¹⁴, Esteban J.M.¹⁵, González S.¹⁶, Seoane A.¹⁷, Cordova H.¹, Cardenas A.¹, Gonzalez-Suarez B.¹, Momblan D.¹⁸, de Lacy A.¹⁸

Institutes 1 Institut Clínic de Malalties Digestives i Metabòliques (ICMDM), Hospital Clínic, GI – Endoscopy Department, Barcelona, Spain; 2 Hospital Universitari Josep Trueta, Girona, Spain; 3 Complejo Hospitalario Universitario de Canarias, Santa Cruz de Tenerife, Spain; 4 Hospital General Universitario Gregorio Marañón, Madrid, Spain; 5 Hospital de Cabueñes, Gijón, Spain; 6 Hospital Ramón y Cajal, Madrid, Spain; 7 Hospital Universitari General de Catalunya, Sant Cugat del Vallès, Spain; 8 Hospital

Universitario Marqués de Valdecilla, Santander, Spain; 9 Hospital Universitario Quirónsalud Madrid, Madrid, Spain; 10 Hospital Infanta Sofía, San Sebastián de los Reyes, Spain; 11 Hospital Universitario Son Espases, Palma de Mallorca, Spain; 12 Hospital Universitari de Bellvitge, Hospitalet de Llobregat, Spain; 13 Hospital de la Santa Creu i Sant Pau, Barcelona, Spain; 14 Hospital Virgen de la Salud, Toledo, Spain; 15 Hospital Clínico San Carlos, Madrid, Spain; 16 Clínica Universidad de Navarra, Pamplona, Spain; 17 Hospital del Mar – Parc de Salut MAR, Barcelona, Spain; 18 Institut Clínic de Malalties Digestives i Metabòliques (ICMDM), Hospital Clínic, GI Surgery Department, Barcelona, Spain
DOI 10.1055/s-0042-1744837

Aims This study reports clinical outcomes from the Spanish EVT registry.

Methods In November 2018, a Spanish registry of patients with upper gastrointestinal tract defects who underwent EVT using Eso-SPONGE was initiated. All demographic, clinical and technical variables related to the procedure were collected in a Redcap-type database. The patients were followed for 6 months to assess the persistence of the closure and/or the appearance of adverse events.

Results Sixty-four patients were included in the study. The most frequent indications were: anastomotic suture dehiscence after esophageal neoplasia surgery (n = 15), cardiac neoplasia surgery (n = 6), gastric neoplasia surgery (n = 12), obesity surgery (n = 10) and spontaneous esophageal perforation (n = 4). The median size of the cavity was 6.7 x 3.6 cm. Median time to initial EVT was 8 days after the surgery. The median duration of EVT was 19 days. The median number of sponges in place was 5 and the sponge exchange interval was 3.8 days. In 53 cases (83 %), closure of the defect was achieved. Seven patients (11 %) presented stricture, 2 (3 %) presented new-onset pneumonia and 1 (1.6 %) patient presented an aorto-esophageal fistula. Hospitals with a case volume greater than 5 had a significantly higher closure rate (90 % vs 69 %; p = 0.04). On the other hand, patients with previous treatment with stent placement had significantly lower closure rate (89 % vs 37 %; p = 0.003).

Conclusions EVT is an effective and safe technique for the treatment of upper gastrointestinal perforations and anastomotic leaks.

OP275V ESOPHAGEAL PERFORATION AFTER VOICE PROSTHESIS PLACEMENT. ENDOSCOPIC THERAPY WITH ESO-SPONGE

Authors Fernandez-Simon A.¹, Sendino O.¹, Cordova H.¹, Pujol-Vila L.², Aviles-Jurado F.X.²

Institutes 1 Institut Clínic de Malalties Digestives i Metabòliques (ICMDM), University of Barcelona, GI – Endoscopy Department, Barcelona, Spain; 2 Institut Clínic d'Espesialitats Mèdiques i Quirúrgiques (ICEMEQ), University of Barcelona, Otolaryngology Department, Barcelona, Spain
DOI 10.1055/s-0042-1744838

We report a case of a 56 year old male, with a history of a total laryngectomy due to a supraglottic squamous cell carcinoma, who presented with a large retroesophageal perforation after a voice prosthesis placement. After three weeks of endoscopic vacuum therapy, requiring a total of 7 sponges, the closure of the esophageal defect was achieved.

OP276V CLOSE THE HOLE AND BACK ON TRACK

Authors Bastens C.¹, Plomteux O.¹, Feytmans B.², Lamani Y.¹, Dandridge A.-C.³, Bisschops R.⁴, Leclercq P.¹

Institutes 1 Clinique Mont Legia – CHC Groupe Santé, Gastroenterology, Liege, Belgium; 2 CHR East Belgium, VERVIERS, Belgium; 3 Delta Hospital, Brussels, Belgium; 4 UZ Leuven, Gastroenterology, Leuven, Belgium
DOI 10.1055/s-0042-1744839

We report the videocase of a refractory and delayed esophageal ulcer healing after endoscopic submucosal dissection of an early esophageal adenocarcinoma developed on a C10M10 Barrett's esophagus in a patient with previous history of Roux-en-Y gastric bypass. Gastro-gastric fistula related to gastric

minimizer was found to be responsible for PPI refractory GERD. Endoscopic closure of the gastro-gastric fistula allowed healing of the post-ESD esophageal ulcer. This endoscopic treatment allowed the patient to proceed to the next step of the Barrett's esophagus endoscopic treatment (by radiofrequency ablation).

OP277V BIDIRECTIONAL RECANALIZATION OF A COMPLETE POSTRADIATION STRICTURE OF THE HYPOPHARYNX AND ESOPHAGUS

Authors Mavrogenis G.¹, Bazerbachi F.², Markoglou K.³, Porceddu S.⁴, Gupta S.⁴, Hourigan L.⁴

Institutes 1 Mediterraneo Hospital, Hybrid Interventional Endoscopy, Glyfada, Greece; 2 Centracare, Gastroenterology, Minnesota, United States; 3 Mediterraneo, Hybrid Interventional Endoscopy, Glyfada, Greece; 4 Brisbane's Princess Alexandra Hospital, Brisbane, Australia
DOI 10.1055/s-0042-1744840

Aim A 65-year-old patient was referred for management of a 5-cm long complete postirradiation stricture of the hypopharynx and esophagus. Endoscopic bidirectional recanalization was planned.

Methods The pre-existing gastrostomy site was reinforced with gastropexy and was dilated up to 14 mm. Antegrade and retrograde recanalization was successfully performed using ESD techniques without need for fluoroscopy. The patient had an uneventful recovery. In the next 4 months the stricture underwent serial dilations up to 18 mm to keep it open.

Conclusion Although technically challenging, bidirectional recanalization of atretic strictures may spare the need for more invasive and morbid surgery.

OP278V THE TECHNIQUE OF CLOSING A TRACHEO-ESOPHAGEAL FISTULA UNDER ENDOSCOPIC AND BRONCHOSCOPY GUIDANCE

Author Lajin M.¹

Institute 1 SHARP Health care, Gastroenterology, San Diego, United States
DOI 10.1055/s-0042-1744841

A 63-year-old female with advanced COPD and esophageal adenocarcinoma was treated with radiation, chemotherapy, and distal esophagectomy.

Her cancer recurred at the anastomosis and was palliated with stenting using LAMS.

She developed a tracheoesophageal fistula resulting in aspiration and was referred for endoscopic treatment.

The fistula was closed using an atrial septal closure device (4 mm waist, 12 mm right atrial disk) under endoscopic and bronchoscopy guidance.

Despite a technically successful procedure, she had a progressive respiratory failure due to underlying advanced COPD and the additional injury incurred as a result of aspiration. She eventually passed away under hospice care.

Treatment of small bowel diseases – new evidence and new devices

15:30–16:30

Saturday, 30 April 2022

Club E

OP279V BLEEDING PARASTOMAL VARICES: ENDOSCOPIC ULTRASOUND TO THE RESCUE

Authors Samanta J.¹, Dhar J.¹, Bharath P.¹, Kumar A.¹, Bhujade H.², Gupta P.², Kochhar R.¹

Institutes 1 Postgraduate Institute of Medical and Research, Gastroenterology, Chandigarh, India; 2 Postgraduate Institute of Medical and Research, Radiology, Chandigarh, India
DOI 10.1055/s-0042-1744842

Stomal varices are rare causes of variceal bleeding. Endoscopic ultrasound (EUS)-guided angiotherapy have not been reported earlier for parastomal varices.

We present a 52-year gentleman, a diagnosed case of alcohol-related cirrhosis with ileostomy for tubercular abdominal cocoon, presented with stomal bleed. CT angiography revealed ileostomy with varicosities and two large vascular channels. Considering the poor general condition of the patient, EUS-guided angiotherapy was performed. In two sessions, 1 coil and 2 ml cyanoacrylate glue were injected each into the two separate vascular channels and the varices were obliterated. On 6-month follow-up, patient is doing fine with no further bleed.

OP280 ENDOSCOPIC REDUCTION OF INTUSSUSCEPTION IN 19 PATIENTS WITH PEUTZ-JEGHERS SYNDROME

Authors Oguro K.¹, Sakamoto H.¹, Yano T.¹, Funayama Y.¹, Kitamura M.¹, Miyahara S.¹, Nagayama M.¹, Sunada K.¹, Kawarai Lefor A.², Yamamoto H.¹

Institutes 1 Jichi Medical University, Department of Medicine, Division of Gastroenterology, Shimotsuke, Japan; 2 Jichi Medical University, Department of Surgery, Shimotsuke, Japan

DOI 10.1055/s-0042-1744843

Aims Intussusception caused by intestinal polyps in patients with Peutz-Jeghers syndrome (PJS) usually requires laparotomy. Several patients who underwent successful endoscopic reduction were reported in the development of double-balloon endoscopy (DBE). The aim of this study is to evaluate the feasibility and safety of endoscopic reduction of intussusception.

Methods We retrospectively reviewed patients who underwent DBE for intussusception due to small bowel polyps in patients with PJS from January 2004 to June 2020.

Results DBE was performed 27 times (antegrade 22, retrograde 5) in 19 patients, and endoscopic reduction attempted for 25 lesions during the study. Ten patients (10/19, 53%) had associated symptoms. Retrograde DBE identified seven polyps causing intussusception, all of which were not reduced, and endoscopic reduction performed. Of these, five were treated with ischemic polypectomy, and two subsequently treated with antegrade DBE which identified 20 polyps causing intussusception and eight polyps were reduced at DBE. Endoscopic reduction was attempted for 12, and six were reduced completely. Finally, eight polyps were treated with endoscopic resection, 11 with ischemic polypectomy, and one required surgical resection because of difficult endoscopic treatment. Multiple DBEs were required to treat single polyps for three lesions. The final per-lesion success rate of endoscopic treatment was 96% (24/25). Two patients developed mild acute pancreatitis after DBE.

Conclusions Endoscopic reduction of intussusception is feasible to avoid laparotomy in patients with PJS.

OP281 DUAL EMISSION LASER TREATMENT AND ARGON PLASMA COAGULATION IN SMALL BOWEL VASCULAR LESIONS ABLATION: A PILOT STUDY

Authors Tontini G.E.¹, Rimondi A.², Scaramella L.³, Topa M.², Penagini R.¹, Vecchi M.¹, Elli L.³

Institutes 1 Università degli Studi di Milano, Department of Pathophysiology and Organ Transplantation, Milano, Italy; 2 Università degli Studi di Milano, Post Graduate Specialization in Gastrointestinal Diseases, Milano, Italy; 3 Fondazione IRCCS Ca' Granda Ospedale Maggiore Policlinico, Gastroenterology and Endoscopy Unit, Milano, Italy

DOI 10.1055/s-0042-1744844

Aims The 1.9/1.5µmDEELT is a recent technology with promising results in treating gastrointestinal bleedings. In this manuscript, we describe our experience with this tool in ablating small bowel angioectasias through a double balloon enteroscope, comparing clinical outcomes with a matched cohort of Argon Plasma Coagulation (APC)-treated patients.

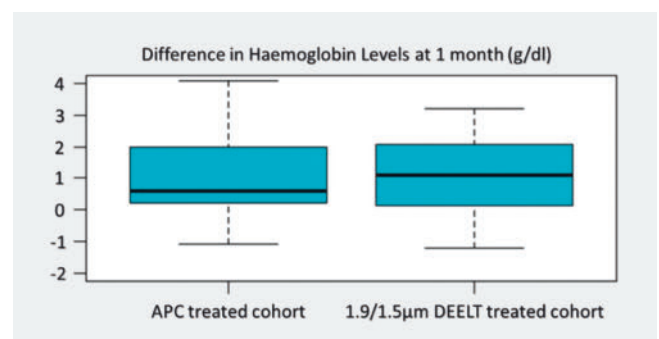
Methods We conducted a single centre, retrospective, propensity score matched study. We recruited all patients affected by small bowel angioectasias

treated with 1.9/1.5µmDEELT as well as a cohort of patients with analogous small bowel lesions treated with APC. We collected safety, feasibility, haemoglobin levels and the need for blood transfusion in the 6 months before and after each procedure. We matched the procedures, considering age, sex and haemoglobin levels.

Results We obtained a cohort of seventeen 1.9/1.5µmDEELT treated procedures matched with a similar cohort of APC-treated procedures (mean weighted distance 0.197). We found no differences in the levels of haemoglobin at 1 month (p = 0.51) and 6 months (p = 0.77) and no difference in the overall number of transfusions (p = 0.65) between the 1.9/1.5µmDEELT and the APC group.

► Table 1

	APC-treated cohort n = 17	1.9/1.5µm DEELT- treated cohort n = 17	P-value
Technical Feasibility	17 out of 17	17 out of 17	1.00
Safety	17 out of 17	17 out of 17	1.00
Δ Haemoglobin at 1 month (g/dl) – mean	+0.93 (IQR 0.20 – 2.00)	+1.31 (IQR 0.17 – 2.02)	0.51
Δ Haemoglobin at 6 months (g/dl) – mean	+1.06 (IQR 0.60 – 1.85)	+1.30 (IQR 0.10 – 2.25)	0.77
Patients requiring transfusions 6 months -after	6 out of 16 (1 NA)	6 out of 15 (2 NA)	1.00



► Fig. 1

Conclusions This retrospective, random-forest matched study demonstrates that 1.9/1.5µmDEELT is a feasible, safe and effective alternative to APC in the treatment of small bowel vascular lesions.

OP282V PLAYING HIDE-AND-SEEK – ENDOSCOPIC SUBMUCOSAL DISSECTION OF A LARGE POLYPOID LESION OF THE TERMINAL ILEUM

Authors O'Neill C.¹, Barreiro P.^{1,2}, Mascarenhas A.¹, Franco A.R.¹, Mendo R.¹, Félix C.¹, Albuquerque A.C.³, Chagas C.¹

Institutes 1 Centro Hospitalar Lisboa Ocidental, Gastroenterology Department, Lisbon, Portugal; 2 Hospital Lusíadas de Lisboa, Gastroenterology Department, Lisbon, Portugal; 3 Centro Hospitalar Lisboa Ocidental, Pathology Department, Lisbon, Portugal

DOI 10.1055/s-0042-1744845

65-year-old man referred for treatment decision of a large cecal lesion identified at screening colonoscopy. Subsequent colonoscopy identified no lesion in the cecum; suddenly a 4-cm semi-pedunculated broad-base ileal lesion, without

clear invasive features protruded from the ileocecal valve to the cecum. ESD was successfully performed with en-bloc excision, without adverse events. Pathological analysis showed a 48mm-tubulovillous low-grade-dysplasia adenoma, R0.

ESD is a feasible treatment for large lesions/adenomas of the terminal ileum because of its minimally invasive nature, ICV preservation and reliable en-bloc resection.

According to authors' knowledge, this is the largest lesion of the terminal ileum removed by ESD.

OP283 ARTIFICIAL INTELLIGENCE AND CAPSULE ENDOSCOPY: A BINARY CONVOLUTIONAL NEURAL NETWORK MODEL APPROACH FOR THE AUTOMATIC DETECTION OF ULCERS AND EROSIONS

Authors Mascarenhas Saraiva M.¹, Afonso J.¹, Ribeiro T.¹, Ferreira J.², Andrade P.¹, Cardoso H.¹, Mascarenhas Saraiva M.N.³, Lopes S.¹, Macedo G.¹

Institutes 1 Centro Hospitalar São João, Porto, Portugal; 2 Faculty of Engineering of the University of Porto, Porto, Portugal; 3 Manoph Gastroenterology Clinic Porto, Porto, Portugal

DOI 10.1055/s-0042-1744846

Aims Ulcers and erosions are frequent findings in capsule endoscopy (CE) exams. CE is a key element in the follow up of patients with Crohn's Disease (CD). Nevertheless, reading capsule endoscopy exams is time-consuming and prone to errors. Convolutional neural networks (CNN) are artificial intelligence tools with high performance levels in image analysis. This study aims to develop a CNN-based model for automatic identification of ulcers and erosions in CE images.

Methods The development of CNN was based on a database of CE images. This database included normal small intestinal mucosa images or non-erosive findings and images of enteric ulcers and erosions. For CNN development, 19340 images (16175 normal mucosa, 3165 ulcers, or erosions) were ultimately extracted. Two image datasets were created for CNN training and testing.

Results The network was 96% sensitive and 98% specific for detection of ulcers and erosions in the small bowel, providing accurate predictions in 98%. The CNN had a frame reading rate of 149 frames per second.

Conclusions The developed algorithm accurately detects ulcers and erosions in CE frames. The development of these automatic systems may allow to improve the diagnostic yield of CE for these lesions and increase the efficiency of the reading process of CE exams.

OP284 MOTORIZED SPIRAL ENTEROSCOPY – A SINGLE TERTIARY CENTER EXPERIENCE

Authors Falt P.¹, Urban O.¹

Institute 1 University Hospital and Faculty of Medicine, Palacký University, 2nd Department of Internal Medicine, Olomouc, Czech Republic

DOI 10.1055/s-0042-1744847

Aims The purpose of our study was to evaluate efficiency and safety of motorized spiral enteroscopy (PSE, PowerSpiral Enteroscopy) in routine clinical setting.

Methods We prospectively evaluated all consecutive patients investigated by PSE in our tertiary endoscopy center between July 2019 and October 2021.

Results A total of 62 examinations in 47 patients (55% males, mean age 58 ± 18 years) were performed. Indication for PSE were symptoms with suspected small bowel disease (29), bleeding with positive capsule enteroscopy (17), Crohn's disease (6), celiac disease (2), hepaticojejunostomy (3) and others (4). Technical success, defined as insertion of the spiral beyond duodenojejunal flexure or ileocecal valve, was achieved in 95% (59/62) of cases. In 87% (55/62) of cases, depth of insertion was considered sufficient. Diagnostic yield was 93% (41/44) of patients after exclusion follow-up procedures. Total enteroscopy was indicated in 11 patients and it was achieved in 82% (9/11), either by antegrade in 2 or by combined approach in 7 cases. Major complications occurred in 2 patients (3% of procedures). One patient suffered from mild acute pancreatitis

after total enteroscopy. There was one intussusception of the sigmoid during endoscope withdrawal resolved by parallel insertion of colonoscope.

Conclusions In our series, PSE shows high technical success rate of antegrade, retrograde and total enteroscopy, high diagnostic yield and low occurrence of significant complications.

Endoscopy beyond the lumen

15:30–16:30

Saturday, 30 April 2022

Clinic H

OP285 EUS-GUIDED GASTROJEJUNOSTOMY VERSUS DUODENAL STENTS FOR MALIGNANT GASTRIC OUTLET OBSTRUCTION: AN INTERNATIONAL MULTI-CENTER PROPENSITY SCORE MATCHED COMPARISON

Authors de Gooyer P.¹, Vanella G.², van Bronswijk M.³, Mandarino F.², Fockens P.¹, Laleman W.³, van Malenstein H.³, Dell'Anna G.², van Wanrooij R.¹, Arcidiacono P.², van der Merwe S.³, Voermans R.P.¹

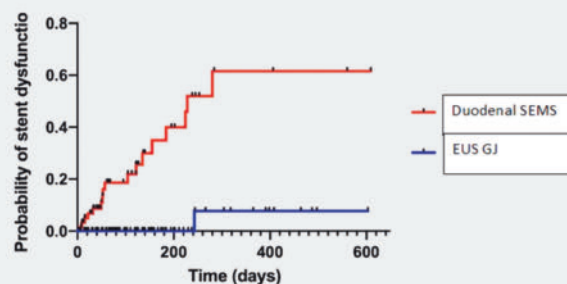
Institutes 1 Amsterdam UMC, Gastroenterology and Hepatology, Amsterdam, Netherlands; 2 IRCCS San Raffaele Scientific Institute, Milan, Italy; 3 University Hospitals Gasthuisberg, University of Leuven, Leuven, Belgium

DOI 10.1055/s-0042-1744848

Aims Duodenal self-expandable metal stents (SEMS) for malignant gastric outlet obstruction (GOO) are prone for recurrent GOO. EUS-guided gastrojejunostomy (EUS-GJ) is emerging as a novel technique which potentially leads to less recurrent GOO. Advantages over SEMS have been evaluated in retrospective studies with poor control for confounders. Our aim was to compare efficacy, safety and dysfunction rate of EUS-GJ and SEMS in patients with GOO using propensity-score matching.

Methods We conducted an international multicenter retrospective analysis of all consecutive patients undergoing either duodenal SEMS placement or EUS-GJ for a malignant GOO between 2015–2021 in 3 European centers. Patients with follow-up < 30 days were excluded. Primary outcomes were clinical success (possibility to eat at least soft solids after the procedure (GOO scoring system (GOOSS) ≥ 2) and stent dysfunction (recurrence of GOO (GOOSS ≤ 1) after initial clinical success). A propensity score-matched (1:1) analysis was performed using age, sex, underlying disease, disease stage, ascites and peritoneal carcinomatosis as variables.

Results A total of 224 patients were identified receiving either EUS-GJ (107) or SEMS (107). After matching, 176 patients (88 per arm) were matched. Mean age was 66 years (SD ± 11.8), 58% had pancreatic cancer, 32% peritoneal metastasis and 35% ascites. No significant differences in baseline characteristics were detected. Primary outcome is summarised in Table 1 and Figure 1. Overall adverse events (10.2 vs. 20.5%, p = 0.093) did not differ.



► Fig. 1

► Table 1

Efficacy	E US GJ (n = 88)	Duodenal SEMS (n = 88)	OR (95%-CI)	p value
Technical success	83 (94.3 %)	86 (97.7 %)	0.39 (0.07 – 2.04)	0.444
Clinical success	80 (90.9 %)	66 (75 %)	3.33 (1.39 – 8.00)	0.008
Dysfunction (after clinical success)	1 (1.3 %)	17 (25.8 %)	0.04 (0.01 – 0.28)	<0.001
Median time to dysfunction, days (IQR)	243	57 (27–169.5)		0.222

Conclusions EUS-GJ resulted in higher initial clinical success and lower stent dysfunction rates with comparable safety in comparison with duodenal SEMs. These data suggest that EUS-GJ may be preferred over duodenal SEMs in patients with a malignant gastric outlet obstruction.

OP286 THE OVER THE SCOPE GRASPER – A NEW TOOL FOR PANCREATIC NECROSECTOMY AND BEYOND – FIRST MULTICENTER EXPERIENCE

Authors Brand M.¹, Bachmann J.², Schlag C.³, Hügler U.⁴, Rahman I.⁵, Wedi E.⁶, Walter B.⁷, Möschler O.⁸, Meinung A.¹

Institutes 1 University of Würzburg, Department of Internal Medicine II, Würzburg, Germany; 2 University of München, Department of Surgery – Klinikum rechts der Isar, München, Germany; 3 University of Zürich, Department for Gastroenterology und Hepatology, Zürich, Switzerland; 4 Klinikum Köln-Holweide, Department for Gastroenterology, Köln, Germany; 5 University Hospital Southampton, Gastroenterology, Southampton, United Kingdom; 6 Sana Klinikum Offenbach, Gastroenterology, Offenbach, Germany; 7 University of Ulm, Department of Internal Medicine I, Ulm, Germany; 8 Marienhospital Osnabrück, Gastroenterology, Osnabrück, Germany

DOI 10.1055/s-0042-1744849

Aims Endoscopic treatment of pancreatic necrosis can be challenging and time consuming because sticky necrotic debris is sometimes difficult to remove. With the Over-The-Scope-Grasper, a new tool has recently become available for this purpose, which is also useful for other indications. The aim of this observational study was to evaluate the efficacy and safety of this new device in a multicenter setting.

Methods The Over-The-Scope-Grasper (OTSG Xcavator™ – Ovesco Endoscopy AG, Tübingen, Germany) was used in 8 centers between November 2020 and October 2021 for appropriate indications. Procedural parameters were documented in a predefined questionnaire, with special respect to clinical success and safety.

Results A total of 50 procedures were performed. Most of the procedures were pancreatic necrosectomies (31 transgastric, 4 transduodenal). In 69 % access to the necrosis cavity was established by a lumen apposing metal stent (LAMS). The technical and clinical success of necrosectomy was 97 %, with a mean of 7 pieces of necrosis removed (mean procedure time 47 min). In addition, the device has been used to remove blood clots (n = 5), to clear insufficiency cavities before endoluminal vacuum therapy (n = 5), and to remove foreign bodies from the upper gastrointestinal tract (n = 5). No clinically relevant complications were reported in any of the 50 procedures.

Conclusions First multicenter data demonstrate that the Over-The-Scope-Grasper is an effective and save device for endoscopic pancreatic necrosectomy. Due to its easy handling the device is also appropriate for removing foreign bodies and blood clots, or cleaning insufficiency cavities prior to endoluminal vacuum therapy.

OP287 OVERSTITCH™ ENDOSCOPIC SUTURING SYSTEM FOR GASTROINTESTINAL APPLICATIONS: INITIAL RESULTS FROM A PROSPECTIVE MULTICENTER EUROPEAN REGISTRY

Authors Maselli R.¹, Palma R.¹, Traina M.², Granata A.², Juzgado D.³, Bisello M.⁴, Neuhaus H.⁵, Beyna T.⁵, Bansil D.⁶, Prades L.⁷, Bhandari P.⁸, Abdelrahim M.⁸, Haji A.⁹, Gubbiotti A.¹, Haidry R.¹⁰, Repici A.¹

Institutes 1 Humanitas Research Hospital, Rozzano, Milan, Italy; 2 ISMETT, Palermo, Italy; 3 Quirón Salud, Madrid, Spain; 4 University of Padua, Padua, Italy; 5 Evangelisches Krankenhaus, Dusseldorf, Germany; 6 Evangelisches Krankenhaus, Dusseldorf, Italy; 7 Imperial College London, London, United Kingdom; 8 Portsmouth University Hospital, Portsmouth, United Kingdom; 9 King's College, London, United Kingdom; 10 University College London Hospital, London, United Kingdom

DOI 10.1055/s-0042-1744850

Aims OverStitch Endoscopic suturing devices are currently used for a wide range of applications. Recently a new single-channel version has been introduced, OverStitch-Sx™. A European registry was created to prospectively collect technical and clinical data regarding both OverStitch™ and OverStitch-Sx™ Systems, in order to provide procedural outcomes and find correlation between procedural characteristics and outcomes.

Methods Patients who underwent endoscopic OverStitch™ or OverStitch-Sx™ suturing from January 2018 to December 2020 at 9 European-Centers were enrolled in the registry. Data regarding type of disease treated, suturing pattern, and outcomes were registered. The technical feasibility (the success to introduce the device and reach the target area), technical success (the success to correctly place sutures in the target area) and clinical success (the complete resolution of the clinical issue) were analyzed. Gender, age, defect size (< 1 cm or ≥ 1 cm), defect location, type of suture, number of sutures applied were analyzed by Person-correlation coefficient.

Results In the study period 137 patients (M/F 79/58; mean age 59.8) were enrolled. There were no cases of failure in the device introduction (100 % technical feasibility). Endoscopic suturing was successfully performed in 136 cases (of which 16.3 % involved the OverStitch-Sx™) obtaining a technical success rate of 99.3 %. No adverse events were recorded. Overall clinical success was 89 %. Mucosal defects were sutured in 32 patients with 100 % clinical success. Endoscopic suturing was used 23 times to treat leaks/fistulas, with a clinical success rate of 64.7 %, 85 % for stent fixations (n = 38), 94.4 % for perforations (n = 22), 80 % in postoperative leaks (n = 7). No significant correlation between location, suture pattern, sutures number, and procedure success was found, apart from < 1 cm size fistulas treated by a continuous suture, more likely to achieve clinical success during follow-up.

Conclusions Overstitch-based suturing is technically feasible regardless of treatment site and suturing method, with no cases of failure. The overall technical success rate (99.3 %) and the clinical outcome success rate (89 %) demonstrate the Overstitch suturing technology provides reliable suturing with clinical advantages especially with fistulas < 1 cm in size.

OP288V EUS-GUIDED MANAGEMENT OF POST-SURGICAL INJURY USING LAMS IN PATIENTS WITH BILIARY TRACT STRICTURES

Authors Robles-Medrande C.¹, Arevalo-Mora M.¹, Puga-Tejada M.¹, Alcivar-Vasquez J.¹, Del Valle R.¹

Institute 1 Instituto Ecuatoriano de Enfermedades Digestivas, Guayaquil, Ecuador

DOI 10.1055/s-0042-1744851

Lumen-apposing metal stents (LAMS) are a newly available therapeutic alternative for therapy in post-surgical biliary tract strictures. Two young adult females presented with post-surgical biliary tract stricture injury. Only the first case required intraoperative hepaticojejunostomy. Both developed a cholestatic pattern. We performed an EUS-guided antegrade drainage using LAMS with no reported periprocedural complications. The total and direct bilirubin levels had exponentially decreased. Currently, the patients remain stable. When feasible, EUS-guided management of post-surgical injury using LAMS may be a novel, safe, and effective alternative for patients with iatrogenic biliary tract strictures.

OP289 ADVERSE EVENTS OF ENDOSCOPIC FULL-THICKNESS RESECTION: RESULTS FROM THE GERMAN AND DUTCH COLORECTAL EFTR REGISTRY

Authors Zwager L.W.¹, Mueller J.², Stritzke B.³, Montazeri N.S.⁴, Caca K.⁵, Dekker E.¹, Fockens P.¹, Schmidt A.², Bastiaansen B.A.¹

Institutes 1 Amsterdam University Medical Centers, Gastroenterology & Hepatology, Amsterdam, Netherlands; 2 University of Freiburg, Department of Medicine II, Freiburg, Netherlands; 3 Novineon CRO, Tuebingen, Netherlands; 4 Amsterdam University Medical Centers, Biostatistics Unit, Department of Gastroenterology and Hepatology, Amsterdam, Netherlands; 5 Klinikum Ludwigsburg, Department of Gastroenterology, Ludwigsburg, Netherlands

DOI 10.1055/s-0042-1744852

Aims Endoscopic full-thickness resection (eFTR) is emerging as minimally invasive alternative to surgery for complex colorectal lesions. Previous eFTR reports demonstrated favorable safety, however large studies representing a generalizable estimation of adverse events (AEs) are lacking. Our aim was to provide further insight in AEs following colorectal eFTR.

Methods This is an observational study of patients included in the German and Dutch colorectal eFTR registries between July 2015 and March 2021. All AEs were analysed.

Results In total 1894 procedures were included. Total AE rate was 11.1 % (n = 211/1894; 95 % confidence interval (CI) [9.7–12.6 %]). Perforations occurred in 2.5 % (n = 47/1894; 95 % CI [1.8–3.3 %]), 27 direct and 20 delayed. Successful endoscopic closure was performed in 34.0 % (13 direct and 1 delayed) and antibiotic treatment only in 4.3 % (2 delayed). Appendicitis rate for appendiceal lesions was 10.0 % (n = 13/130; 95 % CI [5.4–16.5 %]) and 46.2 % (6/13) could be treated conservatively. Severe AE rate requiring emergency surgery was 2.3 % (n = 43/1894; 95 % CI [1.7–3.0 %]). These concerned delayed perforations in 0.9 % (n = 17/1894) and direct perforations in 0.7 % (n = 14/1894). Delayed perforations occurred between day 1–10 post-eFTR (median of 2 days). In total, 58.8 %

(10/17) was located in the left-sided colon. Other severe AEs were appendicitis in 0.4 % (n = 7/1894), stenosis in 0.1 % (n = 2/1894), delayed bleeding in 0.1 % (n = 1/1894), severe pain following eFTR close to dentate line 0.1 % (n = 1/1894) and entrapment of grasper in clip 0.1 % (n = 1/1894). No procedure-related mortality occurred.

Conclusions eFTR is a relative safe procedure with a low risk for severe AEs. Patients should be well informed on the risk of a delayed perforation and appendicitis.

OP290 RADIATION EXPOSURE DURING MODERN THERAPEUTIC EUS PROCEDURES: IMPLICATIONS FOR PATIENTS AND HEALTH-CARE WORKERS

Authors Vanella G.¹, Dell'Anna G.¹, Loria A.², Petrone M.C.¹, Del Vecchio A.², Arcidiacono P.G.¹

Institutes 1 IRCCS San Raffaele Scientific Institute, Pancreatobiliary Endoscopy and Endosonography Division, Pancreas Translational and Clinical Research Center, Milan, Italy; 2 IRCCS San Raffaele Scientific Institute, Medical Physics, Milan, Italy

DOI 10.1055/s-0042-1744853

Aims Therapeutic EUS (t-EUS) is increasingly adopted in daily clinical practice of tertiary referral centres; however, little is known about procedure-related Radiation Exposure (RE) metrics.

Methods Kerma-Area Product (KAP [Gy-cm²]) and Fluoroscopy Time (FT [s]) were retrospectively evaluated for all consecutive t-EUS procedures performed in San Raffaele Institute between 2019–2021 through an under-couch C-arm (Ziehm Vision RFD). For EUS-guided Choledochoduodenostomies (EUS-CD) and Gastrojejunostomies (EUS-GJ) an equal number of ERCPs + biliary metal stenting and duodenal stentings were included for comparison.

Results During study interval, 141 patients received t-EUS procedures (male 54.6 %; median age 66 [58–73], primary diseases: 48.9 % pancreatic cancer and 38.3 % peripancreatic fluid collections [PFC]). EUS-CD (N = 44) were mainly performed fluoroscopyless (KAP = 0 [0–0] FT = 0 [0–2]), while ERCPs required a significantly higher RE (p < 0.0001). PFCs drained with Lumen Apposing stents (EUS-PFCD-LAMS, N = 26) were all performed fluoroscopyless, while double-pigtail plastic stents drainage (EUS-PFCD-DPPS, N = 28) required significantly higher RE (KAP = 23 [13–45] FT = 99 [69–159]). EUS-guided gallbladder drainage (EUS-GBD, N = 6) required scarce RE (KAP = 8.58 [2.45–20.58] FT = 16 [2–60]) for coaxial DPPS placement. EUS-GJ (N = 27) required slightly higher RE than duodenal stents (KAP 43.54 [27.95–88.22] versus 29.42 [19.42–45.55], p = 0.03). EUS-guided Hepatico-gastrostomies (N = 10) had the highest RE (KAP = 81.24 [49.39–122.74] FT = 286 [218–430]).

Conclusions t-EUS procedures have significantly different RE (p < 0.000001; p-for-trend = 0.0003). EUS-CD, EUS-GBD and EUS-PFCD-LAMS can be performed with no-to-mild radioscopy. EUS-PFCD-DPPS has intermediate RE. EUS-GJ and EUS-HG involve high RE. Although this is not expected to harm patients compared to standard radioscopy-guided alternatives, endoscopists involved in some t-EUS procedures might experience a RE superior to category standards, claiming for increased awareness, personalized surveillance and additional preventive measures.

ESGE Days 2022 Digital poster exhibition

eP001 TECHNICAL ASPECTS, INDICATIONS AND OUTCOMES OF COLONOSCOPY IN THE ELDERLY. A LARGE COMPARATIVE COHORT STUDY

Authors Baker F. Abu¹, Suki M.¹, Beshara A.¹, Ovadia B.¹, Gal O.¹, Kopelman Y.¹

Institute 1 Hillel Yaffe Medical Center, Gastroenterology and Hepatology, Hadera, Israel

DOI 10.1055/s-0042-1744854

Aims We aimed to investigate various aspects pertaining to colonoscopy performance in elderly patients and to provide indication-based assessment of colonoscopies' yield and outcome.

Methods In this retrospective, large cohort study, we reviewed 35000 files of consecutive patients (50 years or above) who underwent colonoscopy procedures over a 10-year period. Based on age at presentation, patients were divided into very elderly (above 80 years; n = 3434), elderly (65-80 years; n = 13783) and young control (50-64 years; n = 17959) groups. We assessed clinical and endoscopic findings and performed indication-based analysis of outcome.

Results The most prevalent indications for colonoscopy performance were anemia (26.7% and 16.8%) and rectal bleeding (15.8% and 12.1%) for the very elderly and elderly groups, respectively. Both elderly groups had higher rates of inpatient setting (49.2% and 20.9% vs. 9.6%; $P^{1,2} < 0.0001$), inadequate bowel preparation (18.5% and 13.5% vs. 9.1%; $P^{1,2} < 0.0001$) and anesthesiologists' involvement in procedural sedation (6% and 3.9% vs. 2.1%; $P = 0.03$), but a lesser need for high dose propofol sedation (4.5% and 5.4% vs. 7.9%; $P = 0.026$). We showed a linear increase in colorectal cancer (CRC), polyp and diverticulosis with age. Procedures performed for anemia investigation, rectal bleeding or weight loss were associated with higher rates of CRC and polyp detection rates, while constipation indication was associated with the lowest yield of colonoscopy investigation in the elderly groups.

Conclusions We highlighted technical aspects pertinent to colonoscopy performance in the elderly, outlined the indications with the highest yield in endoscopic evaluation, and demonstrated a linear increase of CRC and polyp detection with age.

eP002 COLONOSCOPY IN THE YOUNG: INDICATION-BASED ANALYSIS OF OUTCOME

Authors Abu Baker F.¹, Kopelman Y.¹

Institute 1 Hillel Yaffe Medical Center, Gastroenterology and Hepatology, Hadera, Israel

DOI 10.1055/s-0042-1744855

Aims Data on the diagnostic yield of colonoscopy in young adults with lower gastrointestinal symptoms are scarce. We aimed to evaluate the diagnostic yield of colonoscopy in young patients with an indication-based analysis of outcome.

Methods We reviewed diagnostic colonoscopies performed in young adults (50+) over a 10-year period. We created two age-based groups of young adults (18-39 years, n = 4941) and quadragenarians (40-49 years; n = 6605), as well as a control group of average-risk patients referred for screening colonoscopies during the same period (50-60 years, n = 1453). We evaluated clinical indications for colonoscopies in the young and performed indication-based analysis of patients' outcome.

Results Rectal bleeding (19.8% and 18.4%), iron-deficiency anemia (10.6% and 9.8%), and constipation were major indications for colonoscopy performance in quadragenarian and young patients, respectively. Overall, diverticulosis (8.7% vs. 1.3% and 3.9%; $P^{1,2} < 0.000$) and polyp detection rates (PDR) (19.6% vs. 6.1% and 12.1%; $P^{1,2} < 0.000$) were significantly higher in the control group, while inflammatory bowel disease (IBD) (10.9% and 3.6% vs. 0.1%; $P^{1,2} < 0.000$) was more prevalent in both young patients' groups. Colorectal cancer (CRC) diagnosis rate

was higher in younger groups than controls, but this was significant for quadragenarians (1.1% vs. 0.3%; $P = 0.001$). The indication-based analysis revealed that rectal bleeding was associated with significantly increased risks of CRC, Polyps and IBD diagnosis, even in the younger patients' group.

Conclusions We outlined diagnostic yields of colonoscopy performed in young patients for multiple indications and showed that rectal bleeding was consistently associated with CRC, increased PDR, and IBD in young patients.

eP003 COLORECTAL CANCER SCREENING: FECAL OCCULT BLOOD TEST DURING THE COVID-19 OUTBREAK

Authors Abu-Freha N.^{1,2}, Cohen B.³, Elkrinawi J.^{1,2}, Gordon M.³

Institutes 1 Soroka University Medical Center, The Institute of Gastroenterology and Hepatology, Beer-Sheva, Israel; 2 Ben Gurion University of the Negev, Faculty of Health Sciences, Beer-Sheva, Israel; 3 Soroka University Medical Center, Soroka Clinical Research Center, Beer Sheva, Israel

DOI 10.1055/s-0042-1744856

Aims We aimed to investigate the changes on the frequency of performing FOBT test and CRC diagnosing in 2020 as comparison to the previous years.

Methods Retrospective study included all patients with positive FOBT between the years 2017 and 2020. Demographic, clinical and laboratory data were collected. Number of performed tests, positive tests and CRC diagnosis were collected. We compared the data of 2020 to the data of the years 2017-2019. The data were extracted using the MDClone platform of the largest health maintenance organization "Clalit" in Israel (about 4.7 million insured).

Results FOBTs were performed by 847,550 residents. 42,471 FOBTs were performed during 2020, in comparison to 158,147 tests during the years 2017-2019. In comparison to 2019 (44,997 tests), reduction of 5.6%, however a trend of decline in the number of tests performed was observed in the last years. Significant increase on the positivity of FOBTs in 2020 vs 2017-2019 was observed (10.5% vs 8.2%, $p < 0.001$). Decline of the CRC among positive subjects were observed in 2020 (2% vs 2.6%).

Conclusions slight decrease on the number of the performed FOBTs in 2020 compared to the previous years, but with higher rate of positivity and lower rate of CRC.

eP004 THE IMPACT OF THE COVID-19 PANDEMIC ON COLORECTAL AND GASTRIC CANCER DIAGNOSIS, DISEASE STAGE AND MORTALITY

Authors Abu-Freha N.^{1,2}, Hizkiya R.³, Abu-Abed M.³, Michael T.⁴, Jacob B.M.⁵, Rouvinov K.⁶, Schwartz D.¹, Reshef A.⁷, Netz O.⁷, Pinski E.⁷, Etzion O.^{1,8}

Institutes 1 Soroka University Medical Center, The Institute of Gastroenterology and Hepatology, Beer-Sheva, Israel; 2 Ben Gurion University of the Negev, Faculty of Health Sciences, Beer-Sheva, Israel; 3 Soroka University Medical Center, Internal Medicine Division, Beer-Sheva, Israel; 4 Ben-Gurion University of the Negev, Department of Public Health, Beer-Sheva, Israel; 5 Ben-Gurion University of the Negev, Medical School for International Health, Beer-Sheva, Israel; 6 Soroka Medical Center & Ben-Gurion University, The Legacy Heritage Oncology Center & Dr Larry Norton Institute, Beer-Sheva, Israel; 7 Soroka University Medical Center, Department of Surgery, Beer-Sheva, Israel; 8 Ben-Gurion University of the Negev, Faculty of Health Sciences, Beer-Sheva, Israel

DOI 10.1055/s-0042-1744857

Aims We aimed to investigate this change of frequency and incidence, clinical characteristics, disease stage and mortality of patients with gastric cancer (GC) or colorectal cancer (CRC) diagnosed in the first COVID-19 outbreak year 2020 versus the pre-pandemic year 2019

Methods Data of the patients with GC or CRC in the years 2019 and 2020 were collected. Data regarding demographic, time of diagnosis, symptoms, staging and mortality were collected

Results 216 patients were diagnosed with CRC in 2019, whereas only 162 were diagnosed in 2020, a reduction of 25 %, while 36 GC diagnoses were made in 2019 and 24 in 2020, a 33 % reduction. The age-adjusted incidence was calculated to be 24.28 for CRC and 5.0 for GC in 2020 compared to 29.93 and 5.32 in 2019, retrospectively. CRC patients had significantly lower rate of rectal bleeding as their presenting symptom in 2020 compared with 2019, 8.1 % vs 19 % ($p = 0.003$), but higher rate of diarrhea as their presenting symptom, 4.3 % vs 1 % ($p = 0.044$). No significant differences regarding other presenting symptoms, comorbidities, surgery or mortality were found between the groups diagnosed in 2019 or 2020.

Conclusions A decrease in GC and CRC diagnoses was observed during the year 2020 (COVID-19 crisis) compared with 2019; lower rate of rectal bleeding and higher rate of diarrhea as presenting symptoms were noted in 2020, but no significant difference was found regarding other presenting symptoms, disease stage, surgery or mortality.

eP005 ENDOSCOPIC APPROACH VERSUS RESECTIVE SURGERY IN COMPLEX BENIGN COLONIC LESIONS

Authors Álvarez Arroyo E.¹, Medina Prado L.¹, Martínez Sempere J.F.¹, Vidal I.², Jover Martínez R.J.¹

Institutes 1 Hospital General Universitario de Alicante, Alicante, Spain; 2 Universidad Miguel Hernández, Alicante, Spain

DOI 10.1055/s-0042-1744858

Aims To describe the characteristics of complex benign lesions treated either by colonoscopy or surgically, and to compare the rate of complications.

Methods Unicentric, observational, retrospective study. We included a cohort of benign colonic lesions surgically treated between 2004-2021, compared with another cohort of complex (SMSA ≥ 3) benign lesions endoscopically treated between 2018-2021. Adenocarcinoma or invasive histology and transanal surgery treated lesions are excluded.

Results 240 lesions (232 patients) were included, 136 (56.6 %) in the endoscopic cohort. 67.1 % male, average age 68 ± 0.66 ($p > 0.05$). There were 70 (51.5 %) SMSA 4 lesions in the endoscopic group versus 78 (75 %) in the surgical one ($p < 0.001$). 144 (60 %) lesions were located in right colon ($p > 0.05$). 213 (88.8 %) lesions were adenomas and 27 (11.3 %) serrated lesions ($p > 0.05$ between groups). There were 32 (23.5 %) high grade dysplasia lesions in the endoscopic group versus 57 (54.8 %) in the surgical one ($p < 0.001$). Attending to the Paris classification: 56 % of the endoscopic group lesions were 0-IIa, median size 30 (25-45) mm; 42.3 % of the surgical group lesions were 0-Is, median size 40 (30-53) mm ($p < 0.01$). There were severe complications in 36 (34.6 %) patients in the surgical group versus 1 in the endoscopic group (0.7 %) ($p < 0.001$), and 3 (2.9 %) deaths in the surgical group versus 1 (0.7 %) death in the endoscopic group ($p < 0.001$). The length of hospital stay median was 10.5 (7-23) days in the surgical group versus 0 days in the endoscopic one ($p < 0.001$).

Conclusions The endoscopic treatment of complex benign colonic lesions (SMSA ≥ 3) associates lower mortality rates, severe complications and shorter length of hospital stay. We recommend establishing specific reference agendas for this type of lesions.

eP006V ENDOROTOR: A NEW INSTRUMENT IN EMR

Authors Álvarez Arroyo E.¹, Martínez Sempere J.F.¹, Mangas-Sanjuán C.¹, Jover Martínez R.J.¹, Aparicio Tormo J.R.¹

Institute 1 Hospital General Universitario de Alicante, Alicante, Spain
DOI 10.1055/s-0042-1744859

We present the case of a 78 years old man who consults us because of chronic diarrhea. In the colonoscopy we find a 10cm LST-GH lesion in rectum, NICE 2, with low grade dysplasia in histology. Firstly we try to perform an endoscopic mucosal resection, which has to be interrupted because of the prolonged length of the procedure (6 hours). In a second attempt, the resection is difficult due

to the amount of fibrosis, so we decide to resect it with the EndoRotor system, achieving a complete removal of the lesion.

eP007 COLON CAPSULE ENDOSCOPY; TIME TO RAISE THE THRESHOLD FOR ONWARD REFERRAL FOR COLONOSCOPY

Authors Armstrong P.R.¹, Butler T.², Manoharan T.¹, McNamara D.^{1,2}

Institutes 1 Tallaght University Hospital, Dublin, Ireland; 2 Trinity College Dublin, Department of Clinical Medicine, Dublin, Ireland

DOI 10.1055/s-0042-1744860

Aims Colon capsule endoscopy (CCE) is an accepted technique of assessing the colon. If the reader identifies one polyp > 6 mm or > 3 polyps (any size), ESGE guidelines advise colonoscopy. Study aim was to determine if CCE criteria for onward referral for colonoscopy leads to clinically relevant outcomes.

Methods Retrospective comparison of colonoscopy findings in patients referred following CCE. Patients were grouped according to indication, any polyp > 6 mm (> 6 mm) vs > 3 polyps (> 3). Significant finding on colonoscopy were defined according to ESGE guidelines (any adenoma > 10 mm or 5 adenomas (any size)).

Results In all, 65 patients had > 3 polyps of any size, while 52 had at least 1 polyp > 6 mm, and 32 fitted both criteria on CCE, and had a follow up colonoscopy.

More of the > 6 mm group (52 %) had significant findings on colonoscopy compared to the > 3 group (34 %) ($p = 0.0489$).

Of 20 patients who had 1 polyp > 6 mm but less than 3 polyps overall, 45 % had significant findings, compared to 12 % of 33 patients who had > 3 polyps but all < 6 mm ($p < 0.0107$). OR 5.9, CI 1.5117 to 23.2761.

Outcomes were similar for the > 6 mm group and the 32 fitting both criteria ($p = 0.699$). However those fitting both criteria had more significant findings than the > 3 group ($p = 0.0002$).

Conclusions Any number of polyps < 6 mm is not a reliable indicator of significant findings on follow-on colonoscopy post CCE. Presence of polyp > 6 mm improves the yield, regardless of polyp numbers. The authors argue that ESGE should adopt new thresholds for referral onwards for colonoscopy reflecting this finding.

eP008 FACTORS ASSOCIATED WITH INCOMPLETE COLONOSCOPY

Authors Benhamdane A.¹, Sair A.¹, Touibi A.¹, Addajou T.¹, Rokhsi S.¹, Mrabti S.¹, Berraida R.¹, El Koti I.¹, Rouibaa F.¹, Benkirane A.¹, Seddik H.¹

Institute 1 Military Hospital Mohamed V, Gastroenterology II, Rabat, Morocco
DOI 10.1055/s-0042-1744861

Aims Cecal intubation is one of the goals of a quality colonoscopy. However, incomplete colonoscopy is performed in 10 % of cases.

The objective of our study is to determine the factors associated with incomplete colonoscopy.

Methods This is a retrospective descriptive and analytical study including all patients who underwent colonoscopy between January 2018 and August 2021. Data collection and statistical analysis were performed by JAMOVI software. Patients with chronic inflammatory bowel disease (IBD) were excluded from our study.

Incomplete colonoscopy was defined as non-visualization of the cecum.

Results Of 1518 colonoscopies performed, 105 were incomplete (11.5 %).

Patients with incomplete colonoscopy tend to be older ($p = 0.003$), male ($p = 0.026$), with a history of abdominal surgery ($p < 0.001$), have constipation ($p = 0.001$), diarrhea ($p = 0.002$) and rectal bleeding ($p = 0.006$) with poor preparation ($p < 0.001$).

On multivariate analysis, the factors associated with incomplete colonoscopy were: a history of abdominal surgery (OR: 13.8, CI95 %: 4.2- 45.1, $p < 0.001$), poor preparation (OR: 224, CI95 %: 57- 884, $p < 0.001$), the presence of diarrhea

(OR: 0.2, CI95%:0.08-0.5, $p=0.002$), and constipation (OR: 0.33, CI95%: 0.1-0.7, $p=0.007$)

Conclusions In our study, 11.5% of colonoscopies are incomplete. The factors associated with incomplete colonoscopy were history of abdominal surgery, poor preparation, and the presence of diarrhea and constipation.

eP009 PREDICTORS OF CROHN'S DISEASE ACTIVITY IN BIOTHERAPY PATIENTS

Authors Benhamdane A.¹, Aourarh B.¹, Boualiten K.¹, Berrag S.¹, Adioui T.¹, Tamzaouret M.¹, Aourarh A.¹

Institute 1 Military Hospital Mohamed V, Gastroenterology I, Rabat, Morocco
DOI 10.1055/s-0042-1744862

Aims The aim of our study is to characterize the predictive factors of disease activity in patients with crohn's disease treated with anti-TNF-alpha antibodies.

Methods This is a prospective study including all patients with crohn's disease on anti-TNF-alpha who were hospitalized in our department from January 2019 to August 2021.

Epidemiological, clinical, and biological data were collected from the patients' charts.

The CDAI score was used to determine disease activity.

Results The mean age of our patients was 40.17 years \pm 14.18 years (15 to 62 years), with a male predominance at 57.5%.

The localization of Crohn's disease is essentially ileocolic (49.3%), colonic (33.8%) and ileal (16.9%).

According to the CDAI score, the disease was mild in 31.9% ($n=23$), moderate in 52.8% ($n=38$) and severe in 15.3% ($n=11$) of cases.

38 patients were on combotherapy (58.5%) and 14 patients were on anti TNF alone (21.5%). The median CRP value was 25mg/l [6.5-64.5], the mean hemoglobin value was 11 \pm 2.17 g/dl, the median white blood cell value was 6400 [5000-8400], the median albumin value was 33 [29-38], and the median fecal calprotectin value was 807 μ g/g [176-1663].

On univariate analysis, the factors associated with high CDAI score were CRP ($p=0.002$), hemoglobin ($p=0.019$) and albumin ($p=0.021$).

On multivariate analysis, adjusting for the factors studied, only CRP level ($p=0.039$) was statistically significantly associated with the CDAI score.

Conclusions In our study, and on multivariate analysis, only the CRP rate is statistically significantly associated with disease activity. It suggests the place of CRP in the monitoring of Crohn's disease in routine practice.

eP010 THE RELATIONSHIP BETWEEN DIVERTICULAR DISEASE AND COLORECTAL POLYPS AND NEOPLASTIC LESIONS

Authors Benhamdane A.¹, Sair A.¹, Touibi A.¹, Addajou T.¹, Rokhsi S.¹, Mrabti S.¹, Berraida R.¹, El Koti I.¹, Rouibaa F.¹, Benkirane A.¹, Seddik H.¹

Institute 1 Military Hospital Mohamed V, Gastroenterology II, Rabat, Morocco
DOI 10.1055/s-0042-1744863

Aims Shared by certain epidemiological and etiological features, diverticulosis and colorectal neoplastic lesions and colonic polyps have long been associated. The aim of this study was to evaluate the association of diverticulosis with colorectal neoplastic lesions.

Methods In this single-center retrospective study, patients who underwent colonoscopy from January 2019 to August 2021 were included. Epidemiological, clinical and endoscopic data were collected from colonoscopy records. Diverticulosis was defined as the presence of one or more colonic diverticula.

Results During the study period, 1518 colonoscopies were performed of which 655 came back pathological (44.6%). The prevalence of patients with colonic diverticulosis, as assessed by colonoscopy, was 5% (76). The mean age of patients with colonic diverticulosis was 67.9 \pm 10.5 years (43-92 years), with a male predominance of 64.5% and a sex ratio M/F of 1.8. 6.7% ($n=5$) of the patients had a history of polyps and 5.3% ($n=4$) a history of colorectal cancer.

The main indications for colonoscopy were constipation in 31.6% ($n=24$), rectorrhagia in 28.9% ($n=22$), iron deficiency anemia in 18.4% ($n=14$), melena in 7.9% ($n=6$) and chronic diarrhea in 6.6% ($n=5$). 37.7% ($n=23$) of patients had good preparation (Boston score ≥ 7). Multivariate logistic regression analysis indicated that colonic diverticulosis was statistically significantly associated with the presence of polyps ($p<0.001$) and colorectal neoplastic lesions ($p<0.001$), but also with

Conclusions In our study, colonic diverticulosis appears to be statistically significantly associated with the presence of colorectal processes and polyps.

eP011 CHRONIC DIARRHEA OVER THE AGE OF 65: THE VALUE OF COLONOSCOPY

Authors Benhamdane A.¹, Sair A.¹, Touibi A.¹, Addajou T.¹, Rokhsi S.¹, Mrabti S.¹, Berraida R.¹, El Koti I.¹, Rouibaa F.¹, Benkirane A.¹, Seddik H.¹

Institute 1 Military Hospital Mohamed V, Gastroenterology II, Rabat, Morocco
DOI 10.1055/s-0042-1744864

Aims Our objective is to determine the pertinence of colonoscopy in the exploration of chronic diarrhea in the elderly and the particularity compared to younger subjects.

Methods Epidemiological, clinical and endoscopic data were collected, from January 2018 to August 2021, retrospectively in 351 patients who underwent colonoscopy for chronic diarrhea. We established 2 groups: Group 1 subjects older than 65 years and group 2 subjects younger than 65 years. Patients with chronic inflammatory bowel disease (IBD) were excluded from our study.

Results Among 1518 patients who underwent colonoscopy, 351 (23.1%) had chronic diarrhea. The mean age was 49.6 \pm 15 years (13.9% > 65 years vs. 86.1% < 65 years; $p<0.001$), with a sex ratio M/F = 1.4 for group 1 vs. sex ratio M/F = 0.7 for group 2 ($p=0.032$). In patients over 65 years of age, diarrhea was single symptom in 59.5%, associated with constipation in 27% (Group2: 16.6%; $p=0.126$), with iron deficiency anemia in 8.1% (Group2: 2.6%; $p=0.115$), and with rectal bleeding in 5.4% (Group2: 17.5%; $p=0.062$). Colonoscopy was normal in 44.4% of subjects over 65 years of age with no statistically significant difference compared to younger subjects (41.7%) ($p=0.757$). The diagnoses mainly found at colonoscopy in the over 65s were colorectal polyps in 75% (Gr2: 36.3%; $p=0.004$), colorectal process in 12.5% (Gr2: 4.4%; $p=0.219$), colonic angiodysplasia in 12.5% (Gr2: 2.2%; $p=0.104$) and rectocolitis in 6.3% (Gr2: 59.8%; $p<0.001$).

Conclusions Our study showed that only 13.9% of patients admitted for exploration of chronic diarrhea were older than 65 years. Colonoscopy was most often pathological (55.6%) and was clearly dominated by polyps and colorectal processes.

eP012 TRADITIONAL VERSUS HYBRID ENDOSCOPIC SUBMUCOSAL DISSECTION (ESD) IN SCAR RECTAL LESIONS: A RETROSPECTIVE STUDY FROM 2 REFERRAL THIRD LEVEL CENTERS

Authors Biamonte P.¹, Mandarino F.V.¹, Barchi A.¹, Azzolini F.¹, Viale E.¹, Esposito D.¹, Dell'Anna G.¹, Fanti L.¹, Cecinato P.², Sassatelli R.², Danese S.¹

Institutes 1 San Raffaele Scientific Institute, Milan, Italy; 2 Arcispedale Santa Maria Nuova, Reggio Emilia, Italy
DOI 10.1055/s-0042-1744865

Aims Aim of the study was evaluating efficacy and safety of hybrid vs traditional ESD treating scar rectal lesions.

Methods We retrospectively analysed scar rectal lesions, treated with traditional ESD or Hybrid ESD, from 2 referral centres (Arcispedale Santa Maria Nuova, Reggio Emilia, from 2009 to 2015, and San Raffaele Hospital, Milan, from 2015 to 2021). Outcomes included "en bloc" resection, histologically assessed complete resections (R0), complications, recurrence rate and length of the procedure.

Results A total of 73 patients (M/F 31/42, mean age 65.8 \pm 11.9 years) underwent traditional ESD ($n=49$) or Hybrid ESD ($n=24$). In the traditional and Hybrid ESD groups, baseline characteristics were homogeneous in size of lesions

(3.75 ± 2.09 vs 3.76 ± 2.23 cm, $p > 0.97$) and grade of fibrosis (31 vs 18 F3, 13 vs 5 F2, 5 vs 1 F1; $p > 0.53$). After endoscopic procedures, mean follow-up period was 337 ± 459.7 days. "En bloc" resection and R0 rates were higher for traditional than Hybrid ESD (respectively, 84% vs 16%, $p < 0.0001$ and 56.2% vs 5.5%, $p < 0.0001$). No differences were found about intraprocedural complications (perforation 4.1% vs 2.7% $p > 0.72$; bleeding 23.3% vs 15.1% $p > 0.35$) and recurrences during follow-up, between techniques (1.4% vs 1.4%, $p > 0.61$). Hybrid ESD showed a slighter shorter length of the procedures (94.4 ± 47.6 min vs 108.4 ± 66.3 min) ($p > 0.79$).

Conclusions In the treatment of scar rectal lesions, hybrid and traditional ESD are both safe techniques, although traditional led to higher "en bloc" resection and R0 rates. No differences were reported in the duration between the two procedures.

eP013 ENDOSCOPIC RESECTION OF COLORECTAL POLYPS INVOLVING THE APPENDICEAL ORIFICE: A SPECIALIST APPROACH TO A UNIQUE POLYP SUBTYPE

Authors [Campion J.R.¹](#), [Keating E.²](#), [Joyce A.¹](#), [Leyden J.²](#), [Hall B.¹](#), [Lahiff C.²](#)

Institutes 1 Connolly Hospital, Department of Gastroenterology, Dublin 15, Ireland; 2 Mater Misericordiae University Hospital, Department of Gastroenterology, Dublin 7, Ireland

DOI 10.1055/s-0042-1744866

Aims To describe characteristics, endoscopic management techniques and outcomes for a series of appendiceal orifice (AO) polyps.

Methods This was a retrospective review of a prospectively maintained database of AO polyps managed by endoscopic mucosal resection (EMR) at two high-volume academic centres. Resection technique was not standardised across centres. Polyps were described using Jacob classification.

Results The case series includes 16 patients, median age of 66 years (range 43-85 years). Polyps divided equally between protruded lesions and flat elevated lesions and equally between adenomas and sessile serrated lesions. The majority of polyps ($n = 16$, 81.25%) were Jacob Type 2 and the remainder were Type 0 ($n = 3$, 18.75%). Piecemeal cold EMR, traditional EMR and en bloc EMR were performed in 43.75%, 37.5% and 18.75% of cases respectively. Snare tip soft coagulation (STSC) was applied in $n = 6$ (37.5%) of cases and clips were used in $n = 6$ (37.5%). The only complication reported was intra-procedural bleeding (IPB) in one case. Of the 15 patients who had at least one site check performed, two (13.3%) had recurrence not amenable to endoscopic resection and were referred for surgery. Another three (19.9%) had recurrence cleared endoscopically at first site check. The total recurrence rate after first site check was 13.3%.

Conclusions Overall, recurrence and complication rates were in keeping with previous series. Post-resection clip application was used sparingly. This may have been due to concerns about appendicitis and is supported by absence of any case of post-resection appendicitis. A standardised approach to endoscopic reporting, polyp characterisation and resection should be encouraged.

eP014V ENDOSCOPIC MANAGEMENT OF A COLONIC TEXTILOMA AFTER CHOLECYSTECTOMY

Authors [Canha M.I.¹](#), [Ribeiro P.J.²](#)

Institutes 1 Centro Hospitalar Universitário de Lisboa Central, Gastroenterology, Lisbon, Portugal; 2 Serviço de Assistência Médico-Social, Gastroenterology, Lisbon, Portugal

DOI 10.1055/s-0042-1744867

80-year-old male with gallstone cholangitis underwent elective laparoscopic cholecystectomy converted to laparotomy.

Ten weeks later, due to ongoing abdominal pain, a CT scan was performed showing aerobilia and an ovoid mass of 11×7.5 cm with air and high-density areas, next to the right colic flexure, suggestive of textiloma.

He underwent colonoscopy in which the large textiloma (40×30 cm) was totally removed, revealing a 30 mm fistula orifice opening to an encapsulated

collection, irrigated with gentamicine and saline solution and closed with 2 endoclips.

The patient remained asymptomatic and tolerated oral intake. Two weeks later, CT showed a residual cavity without signs of infection.

eP015 UNDERWATER TECHNIQUE IMPROVES DISSECTION SPEED IN COLORECTAL ENDOSCOPIC SUBMUCOSAL DISSECTION

Authors [Cecinato P.¹](#), [Lucarini M.¹](#), [Azzolini F.²](#), [Bassi F.¹](#), [Sassatelli R.¹](#)

Institutes 1 Azienda USL-IRCCS di Reggio Emilia, Unit of Gastroenterology and Digestive Endoscopy, Reggio Emilia, Italy; 2 Vita-Salute San Raffaele University, Milan, Italy, Unit of Digestive Endoscopy, Milano, Italy

DOI 10.1055/s-0042-1744868

Aims Colorectal endoscopic submucosal dissection (ESD) is a technically difficult, time-consuming and sometimes risky procedure. Tissue traction and good submucosal exposure are important factors for an effective, safe dissection. Underwater ESD (U-ESD) consists in performing an ESD in water or saline immersion, this technique provides multiple advantages, is inexpensive and easy to perform. This study evaluated underwater ESD (U-ESD) as compared to conventional ESD (C-ESD) for dissection of superficial colorectal tumors.

Methods We retrospectively analysed colorectal ESD performed in our centre between January 2014 and September 2021. After excluding patients with IBD, recurrent lesions and those removed by hybrid technique 148 colorectal superficial neoplasms were considered, 28 were removed by U-ESD, 120 by conventional ESD. The primary outcome was dissection speed; secondary outcomes were R0 resection rate and the rate of adverse events.

Results

► Table 1

	U-ESD N 28	C-ESD n 120	p value
Age, years, mean + SD	68,6 + 9.5	69,2 + 10,4	0.7845
Gender (male/female)	16/12	63/57	0.6574
Location, n (%)			
Right colon	12 (42.9)	22 (18.3)	0.0055
Left colon	6 (21.4)	27 (22.5)	0.9024
Rectum	10 (35.7)	71 (59.2)	0.0248
Macroscopic type, n (%)			
LST-NG	10 (35.6)	38 (31.6)	0.6804
LST-G	18 (64.3)	61 (50.9)	0.1988
Sessile	0	21 (17.5)	0.0434
Area, cm², mean (SD)	12.56 (10.97)	10.05 (13.95)	0.3796
Pathological diagnosis, n (%)			
LGD	2 (7.1)	4 (3.3)	0.3176
HGD	19 (67.9)	85 (70.8)	0.7564
T1	7 (25)	30 (25)	1
Dissection speed, mm²/min, mean + SD	17.7 + 10.7	13.0 + 8.4	0.0130
R0 resection, n (%)	28 (100)	110 (91.7)	0.2092
Adverse events (%)	0	3 (2.5)	1
Perforation	0	1 (0.8)	
Bleeding	0	2 (1.7)	

There were no differences in patients characteristic and histological type between the two groups. Lesions in U-ESD group were predominantly located in proximal colon ($p = 0.0055$); neoplasm in C-ESD group were mostly located

in rectum ($p = 0.0248$) and were mainly of sessile morphology ($p = 0.0434$). Dissection speed was significantly higher in U-ESD group (mean $17.7 \text{ mm}^2/\text{min}$ vs $13.0 \text{ mm}^2/\text{min}$, $p = 0.0130$); there were no significant differences in R0 resection rate (100% vs 91.7% , $p = 0.2092$) and adverse events rate (0% vs 2.5% , $p = 1$).

Conclusions Underwater ESD is a safe, effective, inexpensive and easy to perform technique for dissection of superficial colorectal neoplasm. UESD improved submucosal dissection speed compared to conventional ESD.

eP016 IMPACT OF THE RUTGEERTS SCORE ON THE MANAGEMENT OF OPERATED CROHN'S DISEASE

Authors Cherkaoui Malki M.¹, Elbacha H.¹, Mechhor S.¹, Boubauen B.¹, Gharbi T.¹, Benzoubeir N.¹, Errabih I.¹

Institute 1 Ibn Sina Hospital, Mohamed V University, Gastro-Enterology-hepatology and Proctology Unit « Médecine B », Rabat, Morocco

DOI 10.1055/s-0042-1744869

Aims The aim of our study is to evaluate the efficacy of the strategy undertaken based on postoperative colonoscopy, and then to identify predictive factors of postoperative recurrence.

Methods This is a prospective analytic study conducted at our department, including 131 patients with operated Crohn's disease out of a total of 651 patients with CD between January 2010 and November 2021. The Rutgeerts score was assessed in all these patients. Multiple linear logistic regression was performed, with a retained significance level of 0.05.

Results Mean age was 42.8 ± 5.4 years with a sex ratio (M/W) = 0.7. The main indication for surgery was stenosis in 74 patients (61%). 60 (45%) of patients were put immediately after surgery on Salicylates, 30 (22%) on thiopurine, 16 (12%) remain under no treatment. 91 (69%) had endoscopic recurrence with a score of Rutgeerts i2 in 65 patients (71%), Rutgeerts i3 in 6 patients (6%) and Rutgeerts i4 in 20 patients (21%). After medical adaptation, 41 (31%) progressed to clinical recurrence after a median of 30 months [7-61], and 13 (9%) progressed to surgical recurrence after a median of 48 months [23-74]. In multivariate analysis, salicylates and smoking were associated to endoscopic recurrence with (OR = 2.3, CI [1.15-4.2], $p = 0.005$) and (OR = 1.19, CI [1.13-2.19], $p = 0.004$) respectively.

Conclusions A therapeutic strategy based on the evaluation of postoperative endoscopic recurrence within one year after surgery allowed in most of our patients to control the disease by adapting the treatment according to the Rutgeerts score

eP017 ASSESSMENT OF SUBMUCOSAL LAYER QUALITY OF COLORECTAL EMR VERSUS ESD SPECIMENS – A PILOT STUDY

Authors Clees N.¹, Rodriguez-Monaco F.¹, Varnai-Händel A.², Hildenbrand R.², Grund K.E.³, Metter K.⁴, Dumoulin F.L.¹

Institutes 1 Gemeinschaftskrankenhaus Bonn / Teaching Hospital University of Bonn, Internal Medicine / Gastroenterology, Bonn, Germany;

2 Institute for Pathology Bonn Duisdorf, Pathology, Bonn, Germany;

3 Tübingen University, Institute for Experimental Surgical Endoscopy,

Tübingen, Germany; 4 Alb Fils Kliniken, Klinik für Gastroenterologie, Hepatologie und Diabetologie, Göppingen, Germany

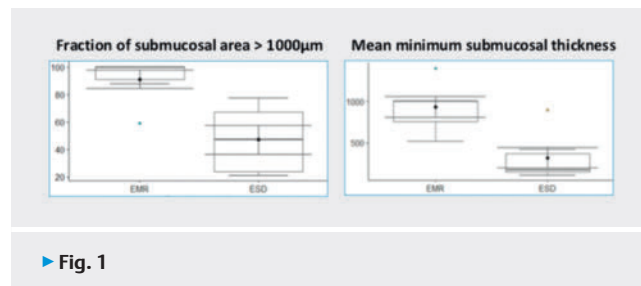
DOI 10.1055/s-0042-1744870

Aims Analysis of submucosal invasion depth is important to adequately predict lymph node metastasis risk after endoscopic resection of early colorectal cancer. Little is known about the quality of submucosal layer in specimens obtained by standard EMR or ESD. Here, we compare morphometric data on submucosal layer quality in routine histopathology specimens from EMR versus ESD.

Methods In this retrospective pilot study routine histopathology specimens were analyzed (6x EMR vs. 6x ESD – all right-sided colon). After selection to

avoid possible artifacts (measurements not at the edges of the sections and preferably in areas with a longitudinal section) the EMR group comprised 18/278 (6.5%), the ESD group 34/381 (8.9%) of the routine tissue sections for morphometric analysis.

Results Sections were analyzed for homogeneity of submucosal layer thickness (i.e. variation coefficient), minimal and maximal submucosal thickness as well as for the fraction of submucosal layer thickness $\geq 1000 \mu\text{m}$ relative to the total area analyzed. Comparative analysis revealed significant differences in submucosal area thickness $\geq 1000 \mu\text{m}$ (EMR vs. ESD: $91.2\% \pm 6.6$ vs. $47.1\% \pm 10.6$, $p = 0.018$) and in the minimum submucosal thickness per tissue section analyzed (EMR vs. ESD: $933.7 \mu\text{m} \pm 125.1$ vs. $319.0 \mu\text{m} \pm 123.6$, $p = 0.009$; Figure 1). No significant differences were observed for variation coefficient or maximum submucosal thickness.



► Fig. 1

Conclusions In this small pilot series, specimens from EMR had a better preservation of the submucosal layer than those from ESD – possibly due to the different methods of specimen acquisition. The findings should be kept in mind when attempting to resect of lesions suspicious for submucosal invasive cancer.

eP018 RARE COMPLICATION OF ENDOSCOPIC VACUUM THERAPY FOR ANASTOMOTIC LEAK IN COLORECTAL SURGERY – A DEEP MIGRATION

Authors Conceição D.¹, Lemos Garcia J.¹, Correia Gomes L.¹, Rosa I.¹, Moleiro J.¹, Marques I.¹, Bártoło J.², Maciel J.², Limbert M.², Claro I.¹

Institutes 1 Instituto Português de Oncologia de Lisboa de Francisco Gentil; 2 EPE, Gastroenterology Department, Lisboa, Portugal; 3 Instituto Português de Oncologia de Lisboa de Francisco Gentil; 4 EPE, Surgery Department, Lisboa, Portugal

DOI 10.1055/s-0042-1744871

Aims In colorectal oncologic surgery the number of sphincter preservation procedures has increased but also has the number of anastomotic leaks (AL). For selected patients Endoscopic vacuum therapy (EVT) is a valid alternative. The more often reported complications of EVT are bleeding, pelvic abscess, luminal stenosis, ileal or urethral fistula. We describe an unusual and potentially severe complication of EVT.

Methods A 29 year old male with diagnosis of low rectal adenocarcinoma underwent neoadjuvant chemoradiotherapy (CRT). Eight weeks after, the re-staging exams showed absence of complete clinical response. He was proposed for a low anterior resection. At 10th postoperative day the diagnosis of AL was made and EVT was started. After the first 2 sessions of EVT, the AL improved and he was discharged under EVT ambulatory treatment.

Results On the 3rd EVT session the drain bottle was empty and vacuum system was non-functioning. The manual attempt to remove the sponge led to the detachment of the drainage tube. In endoscopy the sponge had obviously migrated upwards through the leak cavity. The patient underwent emergency laparotomy to remove the sponge from between the pelvic loops of the small bowel. After 3 days he was discharged and he restarted EVT a week latter, with complete AL closure after 4 additional sessions.



► Fig. 1

Conclusions Despite some potential complications, like intraperitoneal migration, EVT is a highly effective technique, with huge positive impact on patient's quality of life, by making the intestinal tract reconstruction possible.

eP019 DETECTING LYNCH SYNDROME IN A NATIONAL COLORECTAL CANCER SCREENING PROGRAMME

Authors Cudmore J.^{1,2}, Kumar L.³, Cullen G.³, Horgan G.³, Aird J.¹, Sheehan K.³, Leyden J.^{1,2}

Institutes 1 Mater Misericordiae University Hospital, Gastroenterology, Dublin, Ireland; 2 Universtiy College Dublin, School of Medicine, Dublin, Ireland; 3 St. Vincents University Hospital, Gastroenterology, Dublin, Ireland

DOI 10.1055/s-0042-1744872

Aims Lynch Syndrome (LS) is the most common cause of hereditary colorectal cancer (CRC) accounting for 2–4% of all CRCs. It is characterised by pathogenic variants in mismatch repair (MMR) genes. Many people are unaware of their diagnosis. Universal testing of all CRCs has been recommended to address this. The aim was to determine the proportion of CRCs tested for LS at two screening sites of the Irish national CRC screening service, BowelScreen, and to examine the outcomes of testing.

Methods CRCs diagnosed through BowelScreen from 2015 to 2020 were identified. Histopathology reports and electronic patient records were used to determine if CRCs were tested for LS with immunohistochemistry for MMR deficiency (dMMR) and if dMMR was found whether further testing to rule out LS or genetic testing to confirm LS were undertaken.

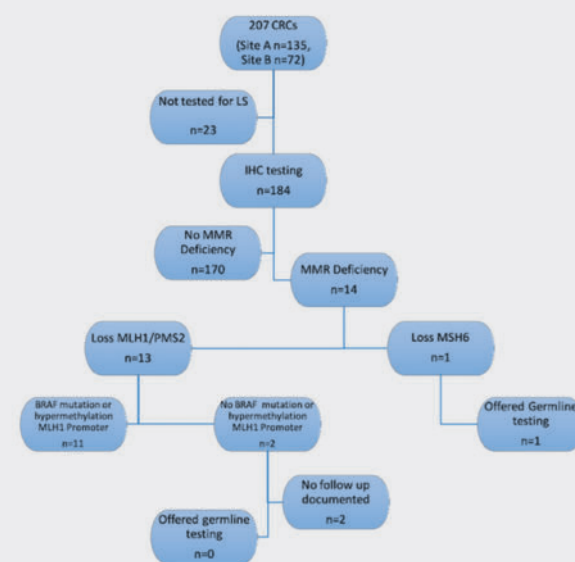
Results 207 CRCs were identified. Site A tested 100% of CRCs with IHC. Site B tested 69% of CRCs overall, however 100% in 2020 were tested.

Table 1. Numbers of CRCs tested for LS for 2015 vs 2020, by screening site.

► Table 1

	Site A – n(%)	Site B – n(%)	Totals – n(%)
2015	22 (100%)	8 (57.1%)	30 (83.3%)
2020	3 (100%)	5 (100%)	8 (100%)

14 (6.7%) were MMR deficient. 13 (93%) had combined loss of MLH1/PMS2. 11/13 (84.6%) were determined to be sporadic based on either BRAFV600E mutation or hypermethylation of the MLH1 promoter region. MSH6 loss was detected in 1 CRC. In total 3 patients were eligible for germline testing. 1 declined and 2 did not have follow up documented.



► Fig. 1

Conclusions Both sites had implemented universal testing for LS by 2020 in line with international guidance. A small number of patients were eligible for germline testing however only 33% were referred, highlighting the need for appropriate resources and referral pathways within our national screening programme.

eP020 IMPACT OF SEDATION TYPE ON ENDOSCOPIC DETECTION OF POLYPS AND ADENOMAS: A TERTIARY CARE CENTER EXPERIENCE

Authors Daniel F.¹, Tarhini H.¹, Alrazim A.¹, Ghusn W.¹, Hosni M.¹, Kerbage A.¹, Soueid A.¹, Sharara A.I.¹, Mourad F.¹, Francis F.¹, Shaib Y.¹, Barada K.¹

Institute 1 American University of Beirut Medical Center, Internal Medicine – Division of gastroenterology and hepatology, Beirut, Lebanon

DOI 10.1055/s-0042-1744873

Aims Endoscopic detection of polyps and adenomas decreases the incidence and mortality of colorectal cancer. The available data concerning the relationship between the sedation type and adenoma detection rate (ADR) or polyp detection rate (PDR) is inconclusive. The aim of our study was to evaluate the impact of conscious vs. deep (propofol) sedation on the ADR/PDR in diagnostic and screening colonoscopies.

Methods This was a retrospective cohort study. Patients aged 50-75 years old presenting for a first screening or diagnostic colonoscopy were included. Base-line demographic characteristics were collected, as well as PDR and ADR. Endoscopic withdrawal time and quality of bowel preparation rated in a binary fashion were also collected. Two multivariate logistic regression models were used to evaluate the independent predictors of endoscopic detection of polyps and adenomas.

Results 574 patients met our inclusion criteria. Mean age was 59.26 ± 7.21 with 52.4 % females and an average BMI of 28.08 ± 4.89 . 57.3 % underwent screening colonoscopies, and deep sedation was performed in 34.8 %. Only 4.7 % had bad bowel preparation. PDR was 70 % and ADR was 52 %. On bivariate analysis, no significant difference was shown in PDR and ADR between conscious and deep sedation groups. On multivariate analysis for PDR, age and withdrawal time were independent predictors. For ADR, age, female sex, and withdrawal time were independent predictors. Sedation type and the indication did not reach statistical significance in both models.

► Table 1				
PDR	Age	Adj. OR 1.035	95 %CI (1.004, 1.066)	P = 0.024
	Withdrawal time	Adj. OR 1.124	95 %CI (1.092, 1.157)	P < 0.000
ADR	Age	Adj. OR 1.030	95 %CI (1.003, 1.056)	P = 0.026
	Female sex (compared to male sex)	Adj. OR 0.638	95 %CI (0.444, 0.917)	P = 0.015
	Withdrawal time	Adj. OR 1.069	95 %CI (1.048, 1.09)	P < 0.000

Conclusions In screening or diagnostic colonoscopies, the choice of sedation appears to have no impact on PDR or ADR.

eP021 POST-ENDOSCOPIC SUBMUCOSAL DISSECTION COAGULATION SYNDROME IN COLORECTAL LESIONS. INCIDENCE AND RISK FACTORS IN EUROPEAN POPULATION

Authors de Frutos D.¹, Santiago J.¹, Omella I.J.¹, Blanco S.¹, Agudo B.¹, Tormo B.¹, El-Hajra I.¹, Martínez A.¹, Calleja J.L.^{1,2,3}, Herreros-de-Tejada A.^{1,2,3}

Institutes 1 Puerta de Hierro University Hospital, Gastroenterology and Hepatology. Endoscopy Unit, Majadahonda, Spain; 2 MD Anderson Cancer Center-Hospiten, Gastroenterology and Hepatology, Madrid, Spain; 3 La Luz-Quirón Salud Hospital, Gastroenterology and Hepatology, Madrid, Spain
DOI 10.1055/s-0042-1744874

Aims Primary: Descriptive analysis of Post-Endoscopic Submucosal Dissection Coagulation Syndrome (PECS) in a Spanish cohort of colorectal lesions. Secondary: Associated risk factors (RF) analysis

Methods Consecutive prospective registry of all colorectal endoscopic submucosal dissection (CR-ESD) performed in 3 Spanish tertiary centres between January 2013 and August 2021. PECS was defined as abdominal pain and/or fever (>37°C) after CR-ESD in absence of any infectious cause, intraprocedural or delayed perforation, and which induced an increase in hospital stay ≥ 24 hours. The RF analysis was performed with univariate and multivariate logistic regression.

Results 492 CR-ESD were included. 47 cases of SPEC were registered (incidence 9.9 % CI95 7.5-12.9) causing a median increase of hospital stay of 2 days (IQR 2). All cases responded to conservative medical treatment (fasting period extension, analgesia and broad-spectrum antibiotics) without need for rescue surgery.

A location proximal to the splenic flexure was the only RF for PECS that reached statistical significance in both uni and multivariable logistic regression analysis. The dissection speed was only significant as RF in the multivariable analysis.

Conclusions PECS presents as a common complication after CR-ESD in European population (up to 10 %), however it is usually a mild event that will slightly increase the hospital stay.

Lesions located proximal to the splenic flexure present a 2-fold higher risk for PECS.

Dissection speed could be considered as a probable RF.

eP022V ENDOSCOPIC FULL THICKNESS RESECTION IS SAFE AND EFFECTIVE FOR THE TREATMENT OF SIGMOID SCHWANNOMAS

Authors De Siena M.¹, Barbaro F.¹, Papparella L.G.¹, Ciuffini C.¹, Pecere S.¹, Boškoski I.¹, Petruzzello L.¹, Costamagna G.¹

Institute 1 Fondazione Policlinico Universitario A. Gemelli, IRCCS, Digestive Endoscopy Unit, Rome, Italy
DOI 10.1055/s-0042-1744875

A 49-year-old man was referred to our center after being diagnosed with distal sigmoid Schwannoma. We decided to perform a full-thickness resection (FTR) of the lesion. First we proceed to mark the lesion's edges with the FTRD Marking Probe (Olympus) and then we proceed to remove the lesion with the FTRD System Set (OVESCO Endoscopy). No periprocedural complications were observed. The patient, after adequate observation, was discharged in good general conditions from our hospital on the same day. We believe that FTR represents a safe and effective technique for the treatment of Gastrointestinal Stromal Tumors (GISTs) of the colon.

eP023 PREDICTIVE FACTORS AND SURGICAL IMPACT OF COLONOSCOPY ACCURACY IN LOCALIZATION OF COLORECTAL MALIGNANCY

Authors Dias E.¹, Santos-Antunes J.¹, Gonçalves D.¹, Macedo G.¹

Institute 1 Centro Hospitalar de São João, Porto, Portugal
DOI 10.1055/s-0042-1744876

Aims To evaluate the accuracy of colonoscopy in localization of colorectal malignancy, predictive factors of concordance with intra-operative localization and surgical sequelae of an incorrect localization.

Methods A retrospective analysis of all colonoscopies performed from January 2019 to December 2020 with identification of malignant lesions not adequate to endoscopic treatment and that undergone subsequent resection surgery was performed. Colonoscopy accuracy was evaluated in terms of correspondence between endoscopic and intra-operative tumor localization.

Results A total of 115 colonoscopies were evaluated, mostly correspondent to male patients (63.5 %) with a mean age of 68.7 years. Bowel preparation adequacy was reported in 93 colonoscopies (80.9 %), with an adequate grade in 76.4 %. A complete colonoscopy was accomplished in 82.9 % of cases. The most common tumor location at colonoscopy was sigmoid colon (27 %), followed by ascending colon (14.8 %). There was concordance between endoscopic and intra-operative localization in 76 cases, which corresponds to an accuracy of 66.1 %. Colonoscopy completeness (p = 0.008) and adequate bowel preparation (p = 0.023) were significantly associated with greater concordance between endoscopic and intra-operative tumor location. There was no association with age, gender, tattooing or photographic documentation. Of the 39 incorrectly localized lesions, 19 (48.7 %) required changes in surgical management.

Conclusions Colonoscopy revealed reasonable accuracy in localizing malignant lesions. An incorrect tumor localization at colonoscopy results in a high rate of changes in surgical management. Colonoscopy completeness and an adequate bowel preparation were significant predictors of accuracy in localizing colorectal malignancy, underscoring the importance of colonoscopy quality for this particular indication.

eP024 THE DUBLIN SCORE IS A USEFUL TOOL FOR PREDICTING DISEASE COURSE IN PATIENTS WITH ULCERATIVE COLITIS

Authors Doherty J.^{1,2}, Morain N.O.¹, Stack R.¹, Hara F.O.³, Corcoran R.⁴, Bailey Y.⁴, McNamara D.^{3,5,2}, Kevans D.^{5,4,2}, Doherty G.^{1,2}

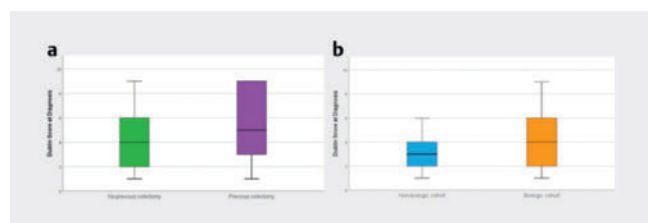
Institutes 1 School of Medicine, University College Dublin, Centre for Colorectal Disease, St Vincent's University Hospital, Dublin, Ireland; 2 www.initiativeibd.ie, INITiative IBD research network, Dublin, Ireland; 3 Trinity College, Department of Gastroenterology, Tallaght University Hospital, Dublin, Ireland; 4 Trinity College, Department of Gastroenterology, St James Hospital, Dublin, Ireland; 5 Trinity College, Trinity Academic Gastroenterology Group, School of Medicine, Dublin, Ireland

DOI 10.1055/s-0042-1744877

Aims The DUBLIN (Degree of Ulcerative colitis Burden of Luminal Inflammation) is a novel simple clinical score of inflammation in patients with Ulcerative Colitis (UC).

Methods We performed a multicentre study. DS at diagnosis was calculated based on disease extent and endoscopic severity in patients with UC. Study outcomes were need for colectomy and/or biologic therapy and time to commencing biologics dependent on DS at diagnosis. We examined prospectively the association between DS at recruitment and FCP, albumin and C-reactive protein.

Results 268 patients had a DS at diagnosis. Baseline demographics are summarised in Table 1. Median DS was significantly higher in patients requiring a colectomy compared to those colectomy free (5 versus 4, $p = 0.005$) and in patients requiring biologic therapy compared to patients not requiring biologic agents (4 versus 3, $p = 0.02$) (Figure 1a,b). Of patients requiring biologic 28% with a $DS \leq 3$ required biologic therapy compared to 64% of patients with a $DS > 3$. Median time to commencing biologic therapy was significantly shorter in patient with a $DS > 3$ than those with a $DS \leq 3$ (2.8 versus 7.1 years, $p < .001$). There was a weak positive correlation between both DS and faecal calprotectin [correlation coefficient 0.27, $p = 0.001$] and C-reactive protein [correlation coefficient 0.1, $p = 0.03$] and a weak negative correlation between DS and albumin [correlation coefficient -0.32, $p < 0.001$].



► Fig. 1

► Table 1

Baseline Demographics	N = 268		
Median age at diagnosis (IQR)	38.9 (27 – 50)	Biologic therapy	
Male	138 (Colectomies	
5ASA		Median DUBLIN SCORE at diagnosis (IQR)	
Immunomodulator		Median DUBLIN Score at recruitment (range)	

Conclusions Our study validates the clinical utility of the DS at diagnosis in predicting a patients disease course including need for biologics and surgery.

eP025 FAECAL MICROBIOTA TRANSPLANTATION IS A SIMPLE, EFFECTIVE AND SAFE TREATMENT IN THE MANAGEMENT OF C. DIFFICILE INFECTION IN DAILY CLINICAL PRACTICE

Authors El Hajra Martinez I.¹, Ferre Aracil C.¹, Vera Mendoza M.I.^{1,1}, Ramos Martínez A.¹, Muñoz Rubio E.¹, Fernández-Cruz A.¹, Matallana Royo V.¹, García Maseda S.¹, Sanchez Romero I.¹, Martínez Ruiz R.¹, Blanco Rey S.¹, Santos Perez E.¹, Pinto Da Costa A.¹, Calleja Panero J.L.¹

Institute 1 Hospital Universitario Puerta de Hierro, Madrid, Spain

DOI 10.1055/s-0042-1744878

Aims Faecal microbiota transplantation (FMT) is a treatment supported by wide scientific evidence and proved to be very effective in the management of Clostridioides difficile (CD) infection. The objective of this study is to analyze its effectiveness and safety in a real clinical practice setting.

Methods Retrospective, single-center and descriptive observational study in which all FMT performed between May 2016 and December 2020 were included. Technical success was defined as the successful administration of the fecal preparation in the patient's gastrointestinal tract and clinical success the disappearance of diarrhea in the first 72 hours after the procedure with no relapse within the following 8 weeks after the therapy was started.

Results 15 FMT were performed in 13 patients. The mean age of the patients was 73 ± 19.4 years (range: 40 to 98 years); being 60% women. The indication for FMT was recurrent colitis due to CD in 84.6%. All FMTs were performed by colonoscopy and from related donors. With a first procedure, the TMF was effective in 11 of 13 patients (84.61%; 95% CI; 54.55 – 98.07). Time until resolution of symptoms was less than 48 hours in all cases. Post-transplant follow-up was 25.66 ± 17.5 months. No significant short or long-term complications were recorded at follow-up. The technical aspects of colonoscopy can be consulted in Table 1.

► Table 1

Boston Bowel Preparation Scale	Good (7-8-9): 60 % Fair (6): 13 % Poor (<6): 27 %
Cecal intubation rate	87 %
Volume of faecal suspension	450 ± 50 mL
Technical success	100 %
Loperamide	4 mg were administered after colonoscopy in 47 % of cases

Conclusions FMT is a simple, effective and safe procedure in CD infection, even in elderly patients or those with great comorbidities.

eP026 ADENOMA MISS RATE IN BACK-TO-BACK ENDOSCUFF-ASSISTED COLONOSCOPY. A SINGLE-CENTER PROSPECTIVE STUDY. PRELIMINARY RESULTS

Authors Fragaki M.¹, Nikolaou P.¹, Arna D.¹, Psistakis A.¹, Velegraki M.¹, Voudoukis E.¹, Theodoropoulou A.¹, Vardas E.¹, Paspatis G.¹

Institute 1 Venizelio General Hospital, Department of Gastroenterology, Heraklion, Greece

DOI 10.1055/s-0042-1744879

Aims To conduct a back-to-back endoscopy study and to evaluate the contribution of endocuff assisted colonoscopy to the detection of missed adenomas in a mixed population of colorectal cancer (CRC) screening/surveillance and symptomatic patients. To the best of our knowledge, this is the first study on this issue.

Methods It is a prospective study conducted from March 2021 to November 2021 in a tertiary endoscopy department. Two consecutive same day, endocuff assisted, colonoscopies were performed in 93 patients.

ClinicalTrials.gov Identifier: NCT04805567

Results 93 patients were enrolled (54.8 % male/ median age 60 years). All examinations were complete (100 % cecum intubation, 59.1 % ileal intubation). The indications were CRC screening (62 patients, 66.7 %), post-polypectomy surveillance (14 patients, 15.1 %) and diagnostic assessment (17 patients, 18.3 %). 49.5 % of the patients had diverticulosis. 257 polyps were overall found, 225 (87.54 %) in the first examination in 73 patients and 32 (12.46 %) in the second examination in 28 patients. Only 4 patients with no adenoma found in the first examination had one adenoma found in the second examination. The overall miss rate for adenomas was 12.65 % and 13.89 % for adenomas \geq 10mm.

Conclusions This back-to-back study has shown that endocuff-assisted colonoscopy has a low adenoma miss rate. These data further strengthen the existing evidence recommending the use of endocuff for decreasing the adenoma miss rate.

eP027 ACCURACY AND SAFETY OF LOWER GI EUS-GUIDED FNA/FNB: A RETROSPECTIVE SINGLE-CENTER STUDY

Authors [Galanopoulos M.¹](#), [Balendran K.¹](#), [Paterson A.²](#), [Varghese S.¹](#), [Carroll N.³](#), [Godfrey E.³](#)

Institutes 1 Addenbrooke's Hospital, Cambridge University Hospitals NHS Foundation Trust, Gastroenterology, Cambridge, United Kingdom;

2 Addenbrooke's Hospital, Cambridge University Hospitals NHS Foundation Trust, Histopathology, Cambridge, United Kingdom; 3 Addenbrooke's Hospital, Cambridge University Hospitals NHS Foundation Trust, Radiology, Cambridge, United Kingdom

DOI 10.1055/s-0042-1744880

Aims The aim was to analyze the performance characteristics and safety of EUS-guided fine-needle aspiration/fine needle biopsy (FNA/FNB) via the lower GI tract.

Methods Records of 100 patients who were referred for lower GI EUS at a tertiary center between 2013 and 2020 were retrospectively reviewed. We evaluated EUS FNA/FNB performance by comparing EUS tissue diagnoses with the final diagnosis (obtained via resection / long term follow-up).

Results 100 patients underwent lower GI EUS, of which 36 were intended as EUS FNA/FNB. In one patient, the lesion was not visible at EUS. In the remaining 35 patients the lesion was sampled. The most frequent location for EUS FNA/FNB was in the rectum (13/35). The majority of lesions were extraluminal (18/35) i.e. not visible endoscopically, the remainder were subepithelial. There were three mild complications (pain x 2, bleeding). The sensitivity, specificity, positive predictive value and accuracy of lower GI EUS-FNA/FNB was 93.0 %, 71.4 %, 93.0 %, 88.6 % respectively. The EUS FNA/FNB resulted in a change in the pre-EUS diagnosis in 15/35 cases.

Conclusions Lower GI EUS-FNA/FNB is an accurate and safe technique. It can be considered for any lesion requiring tissue sampling that is related to the lower GI tract.

eP028 RESULTS AND FOLLOW-UP OF RECTAL LESION SUBMUCOSAL DISSECTION(ESD) PERFORMED AT A REFERRAL HOSPITAL IN ITALY

Authors [Gherzi S.¹](#), [Cappello A.¹](#), [Bassi M.¹](#), [Landi S.¹](#), [Dabizzi E.¹](#), [Cennamo V.¹](#)

Institute 1 AUSL Bologna Maggiore Hospital, UOC Gastroenterologia, Bologna, Italy

DOI 10.1055/s-0042-1744881

Aims Our aim is to emphasize the negligible rate of local recurrence after curative ESD, and to stress the importance of planning the colonoscopy at the same referral hospital in the follow-up period.

Methods We retrospectively collected patients from 2017 to 2021 who had been referred for ESD removal of rectal lesions found during colonoscopies performed by other centers. From the endoscopic removal attempt results, we analysed the recurrence rate and the incidence of other colonic lesions in the follow-up of the subgroup of curative-ESD patients. A 6-month rectosigmoidoscopy was planned by the referral hospital, while the organization of the 1-year follow-up colonoscopy appointment was the responsibility of the general practitioner.

Results 69 inpatients (mean 74 years; 55 % men) with median 35 mm lesions, underwent endoscopic removal attempts that were completed in 65/69 patients (94 %). In 60/65 (92 %) cases en-bloc resection was achieved. Post-ESD bleeding and perforation occurred in 2/69 (2.8 %) and 4/69 (5.7 %) cases respectively. Curative resection was achieved in 58/60 (97 %) cases with histological reports of 5 (8 %) adenocarcinoma, 31 (51 %) adenomatous high-grade dysplasia and 24 (40 %) adenomatous low-grade dysplasia. Mean endoscopic follow-up was 456 days. 58/58 (100 %) 6-month follow-up rectosigmoidoscopy did not show any recurrence. Only 25/50 (50 %) patients underwent 1-year colonoscopy at the referral hospital. In 25/25 (100 %) no local recurrence was found, while in 9/25 (36 %) patients other colonic adenomas (mean 10 mm; 1.2/person) were removed.

Conclusions Curative-rectal-ESD has a negligible recurrence rate while the incidence of other colonic lesions is high in follow-up. Based on these results, colonoscopy surveillance in curative-rectal-ESD patients is crucial and we suggest it be planned as the first endoscopic follow-up at the referral hospital 1-year after-ESD.

eP029 USEFULNESS OF CONTRAST-ENHANCED ENDOSCOPIC ULTRASOUND (CH-EUS) TO GUIDE THE TREATMENT CHOICE IN SUPERFICIAL RECTAL LESIONS: A CASE SERIES

Authors [Gibiino G.¹](#), [Sbrancia M.¹](#), [Binda C.¹](#), [Coluccio C.¹](#), [Saragoni L.²](#), [Fabbri C.¹](#)

Institutes 1 Forlì-Cesena Hospitals, Asl Romagna, Gastroenterology and Digestive Endoscopy Unit, Forlì-Cesena, Italy; 2 Ospedale G.B. Morgagni-L. Pierantoni, Forlì, Italy, UO Anatomia Patologica, Forlì, Italy

DOI 10.1055/s-0042-1744882

Aims Large rectal lesions can conceal submucosal invasion and cancer nodules. Despite the increasing diffusion of high-definition endoscopes in the Western countries and the importance of an accurate morphological evaluation, a complete assessment in this setting can be challenging.

Endoscopic ultrasound (EUS) plays an established role in the locoregional staging of rectum cancer although with a tendency to an over-estimation of the loco-regional (T)-staging. However, there are still few data on the possible use of contrast-enhanced endoscopic ultrasound (CH-EUS), especially if this ancillary technique may increase the accuracy for predicting invasive nodules among large rectal lesions.

Methods We performed a case series of consecutive large (\geq 20 millimeters) superficial rectal lesions assessed by CH-EUS.

Results From January 2020 to December 2021 we evaluated eight cases with high-definition endoscopy, characterized by focal areas suggestive for V type according to Kudo Classification. All lesions corresponded to sessile or Granular Lateral Spreading Tumors (LST-G), mixed type or not granular (LST-NG) according to Paris Classification, with size ranging from 30 to 180 mm.

We performed EUS using II generation contrast agent, Sonovue (©). Six cases, corresponding to invasive pattern at CH-EUS, were treated with surgery, confirmed as pT2 at final staging. Two cases, with non-invasive pattern at CH-EUS, underwent to curative endoscopic submucosal dissection (ESD) corresponding to pT1a tumors.

Conclusions CH-EUS can provide additional information for the characterization of rectal superficial lesions with focal areas suggestive for invasive cancer, by improving the performance of EUS in T1 staging.

eP030 TO RESEARCH THE RELATIONSHIP BETWEEN THE PERCENTAGE OF OVERSPEED OF COLONOSCOPY WITHDRAWAL AND THE ADENOMA DETECTION RATE

Authors Gong R.¹, Yao L.¹, Hu S.², Yu H.¹

Institutes 1 Wuhan University, Wuhan, China; 2 WuHan EndoAngel Medical Technology Co.,LTD, Wuhan, China

DOI 10.1055/s-0042-1744883

Aims Colonoscopy can reduce the incidence of colorectal cancer by detecting and resecting precancerous lesions such as adenomas. The existing evidence shows that the quality of colonoscopy varies from different endoscopists and the adenoma detection rate varies from 7.2% to 52.3%. Therefore, the purpose of this study was to research the relationship between the percentage of overspeed of colonoscopy withdrawal and the adenoma detection rate through prospectively collected colonoscopy videos, so as to guide the practice of endoscopists and improve the adenoma detection rate.

Methods First of all, we build an overspeed percentage calculation system based on Hasche algorithm. Based on this system, we prospectively collected 868 colonoscopy videos, along with corresponding patient demographic information, colonoscopy reports, and pathology reports. All polyps found during the collection of colonoscopy videos were biopsied or removed.

Results In 868 videos, the percentage of withdrawal overspeed was negatively correlated with adenoma detection rate. The rate of overspeed was 2%-37.5%, the range of overspeed was 5%, the rate of overspeed were 7%, 12%, 17%, 22%, 37.5% and the adenoma detection rate were 0.272, 0.247, 0.208, 0.229, 0.1667 respectively, the correlation coefficient between the percentage of overspeed and the adenoma detection rate was -0.9036.

Conclusions Based on the clinical study of this project, we propose a more accurate method to monitor the percentage of overspeed withdrawal. We observed that the lower the percentage of overspeed withdrawal, the higher the adenoma detection rate.

eP031 OVERSTITCH SUTURE OF PARIETAL DEFECTS AFTER ESD AND EFTR IS FEASIBLE, SAFE AND REDUCE THE NEED FOR HOSPITALIZATION

Authors Grande G.¹, Bertani H.¹, Cocca S.¹, Lupo M.¹, Mangiafico S.¹, Pigò F.¹, Russo S.¹, Caruso A.², Conigliaro R.¹

Institutes 1 Azienda Ospedaliero Universitaria di Modena, Gastroenterology and digestive endoscopy, Modena, Italy; 2 Giovanni Paolo II Hospital of Ragusa, Gastroenterology and digestive endoscopy, Ragusa, Italy

DOI 10.1055/s-0042-1744884

Aims Endoscopic submucosal dissection (ESD) and endoscopic full thickness resection (eFTR) are recognized as valid advanced techniques for the treatment of pre-neoplastic and neoplastic lesions of the gastrointestinal tract. However, complication rate and need of hospitalization still remain a matter of discussion.

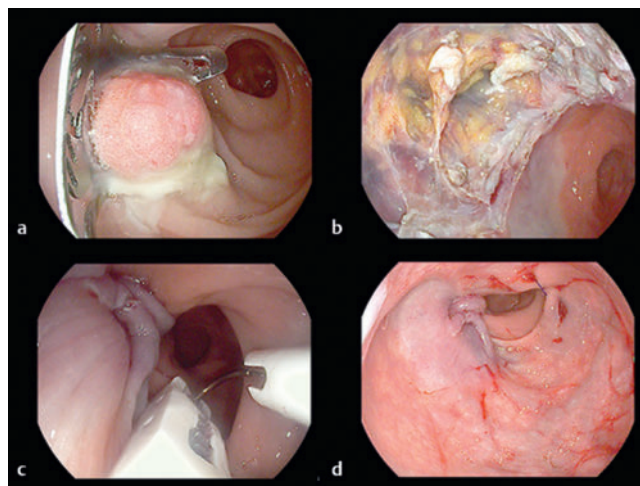
The application of suturing devices have been suggested as an option to prevent complications and reduce hospital stay.

The aim of our study was to analyse the feasibility and safety of Overstitch suturing devices applied after large and deep ESD/eFTR. The secondary aim was to evaluate the efficacy of suturing system to reduce hospital stay and complication rate.

Methods From September 2020 to November 2021 (in Covid-19 pandemic era) all consecutive patients sutured with Apollo SX Overstitch after complex resection were prospectively enrolled. Feasibility, complications, hospital stay were analyzed.

Results Fourteen patients (6 female, mean 79 ± 8 yo) were enrolled; lesions were located in the stomach (3), in the rectum (7), in the sigmoid colon (2), in the descending colon (2). Final diagnosis were 10 HGD/T1(sm1) and 4 lesions T1(sm2/3) or T2 colo-rectal cancer. Eight were treated with ESD as outpatients whereas 4 underwent an eFTR as inpatients with uneventful medium hospital stay of 4.7 days (range 4-6).

Overstitch suture was feasible in all the lesions and all locations. No major complications occurred. One minor complications (colonic luminal stenosis) occurred and was successfully treated with placement of covered metal stent.



► Fig. 1

Conclusions Endoscopic overstitch system is feasible, safe and a useful tool to close large or deep wall defect after ESD/eFTR, avoiding unnecessary hospitalization.

eP032 RISK OF ADVANCED HISTOLOGY IN DIMINUTIVE COLORECTAL POLYPS

Authors Guemguemi I.¹, Mohamed G.¹, Trad N.¹, Boughoula K.¹, Bizid S.¹, Ben Abdallah H.¹, Bouali R.¹, Abdelli N.¹

Institute 1 The Military Hospital of Tunis, gastroenterology, Tunis, Tunisia

DOI 10.1055/s-0042-1744885

Aims The prevalence of advanced histology in diminutive colorectal polyps is a key factor to consider before adopting some polyp management paradigms. We aimed to determine the prevalence and risk factors of advanced histology in diminutive polyps.

Methods We performed analysis of a prospectively maintained database. The colonoscopies included were performed in patients with moderate risk of developing colorectal cancer. Polyp size, morphology and location in the colon were noted. A pathology examination was performed after polypectomy. Conventional adenomas were interpreted as tubular, tubulovillous or villous. Dysplasia was described as low or high-grade dysplasia. Advanced histology was defined as the detection of high-grade dysplasia or villous elements.

Results A total of 116 diminutive colorectal polyps were collected in 63 patients with a mean age of 56.24 ± 15.12 and a sex ratio of 4.25. Polyps were mostly detected in the sigmoid colon (26.7%) and the rectum (25%). There were 81 conventional adenomas (69.8%) and 32 hyperplastic polyps. Advanced histology was identified in 16.3% of cases with presence of high grade dysplasia and villous elements in 4.3% and 12% respectively. In univariate analysis age of the patient (p = 0.01), history of hypertension (p = 0.03), history of dyslipidemia (p = 0.03), excessive alcohol intake (p = 0.01), size of detected polyp (p = 0.05) and NICE type2 (p = 0.01) were statistically correlated with advanced

adenomas. In multivariate analysis, only age and NICE type2 were independent factors associated with advanced histology.

Conclusions we observed a high risk of advanced histology in diminutive colorectal polyps in a group of patients which requires vigilant management to prevent colorectal cancer.

eP033 CONTRIBUTION OF DIGESTIVE ENDOSCOPY IN CASE OF DIGESTIVE THICKENING ON IMAGING

Authors [Hassine A.¹](#), [Mrabet S.¹](#), [Akkari I.¹](#), [Ben Jazia E.¹](#)

Institute 1 [Farhat Hached University Hospital, Gastro-Enterology](#)

[Department, Sousse, Tunisia](#)

DOI [10.1055/s-0042-1744886](#)

Aims The recent advent of new imaging techniques has certainly changed the management of DigestiveTract pathologies. The aim of our study was to assess the benefit of digestive endoscopy in patients with digestive thickening on imaging.

Methods This is a retrospective study including all patients who have had an upper digestive endoscopy or ileocolonoscopy, as part of the exploration of digestive thickening discovered on imaging, during the period between January 2018 and October 2021.

Results A total of 4,046 endoscopic examinations were performed, of which 2.52 % (n = 102) met the inclusion criteria. These were 27 upper digestive endoscopies (26.5 %) and 75 ileocolonoscopies (73.5 %). The mean age of the patients was 57.72 years, with a sex ratio M / F = 1.17. Digestive thickening was discovered incidentally in 20.6 % of cases. It was localized in the colon (57.8 %) , the upper digestive tract (15,8 %), the ileon (18,6 %), the rectum (2.9 %) or the esophagus (4.9 %). It was irregular (34.3 %). Endoscopic examination was normal in 33.3 %. A tumor process was objectified in 18.6 % of cases, of recto-colic localization in the most of cases. Other endoscopic abnormalities observed: mucosal elevation (3.9 %), large folds (5.9 %), mucosal congestion (32.4 %), ulcerations(10.8 %), diverticula (4.9 %), angiodysplasia (2 %), polyps (14.7 %). A suspicious gastric ulcer was noted in 2 %. The irregularity of the thickening was significantly associated with the presence of a tumor process on endoscopy (p = 0.001).

Conclusions Digestive endoscopy is primordial in the case of digestive thickening on imaging, so as not to miss lesions that may be potentially malignant.

eP034 HIGH INCIDENCE OF SERRATED LESIONS IN A FIT POSITIVE POPULATION

Authors [Hernández L.¹](#), [Fuentes Núñez D.¹](#), [Vásquez Seoane M.^{2,1}](#)

Institutes 1 [Hospital Santos Reyes, Aranda de Duero, Spain](#); 2 [Hospital Universitario de Burgos, Burgos, Spain](#)

DOI [10.1055/s-0042-1744887](#)

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

Methods Retrospective analysis of a prospectively collected FIT positive screening cohort from august 2018 until november 2021 were studied to asses serrated lesions and serrated polyposis syndrome.

Results: We performed 398 screening colonoscopies after a positive FIT in which we found 606 SSL with at least one SSL in 191 patients (47.99%). Of these, 37 were advanced SSL (> 10mm or with dysplasia) in 20 patients (5,03 %) and 50 clinically relevant SSL (advanced SSL or > 5mm and proximal to splenic flexure) in 28 patients (7,04 %).

7 patients (1,76 %) were diagnosed or suspected of serrated polyposis syndrome in the screening colonoscopy. Four of them met criterion I of the 2019 WHO classification and 3 met criterion II.

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.

eP035 RISK OF CANCER IN LARGE COLORECTAL POLYPS: DO SIZE AND LOCATION MATTER?

Authors [Htet H.¹](#), [Siggens K.¹](#), [Aslam S.¹](#), [Abdelrahim M.¹](#), [Subramaniam S.¹](#), [Bhandari P.¹](#)

Institute 1 [Queen Alexandra Hospital, Gastroenterology, Portsmouth, United Kingdom](#)

DOI [10.1055/s-0042-1744888](#)

Aims Polyp size and location have been associated with high incidence of covert cancer rates of up to 10 % even after expert assessment. We aim to evaluate the risk of cancer in large colorectal polyps resected via endoscopic submucosal dissection (ESD) or knife-assisted resection (KAR).

Methods Retrospective review was made from prospectively collected data.

Results 404 cases of ESD and KAR of colorectal polyps were performed by expert endoscopists in a single centre. Post-resection cancer was found in 31/404 (7.7 %). 13/31 cancers were diagnosed pre-resection and overall covert cancer rate is 4.5 % (18/404).

217/404 (53.7 %) polyps were in rectum. 18/217(8.3 %) showed cancer in resected specimens. Pre-resection assessment had revealed evidence of cancer in 4/18 rectal cancers. The true covert cancer rate in rectum is 6.5 % (14/217). Surgery was performed on 6/18 patients (33.33 %) and adjuvant chemoradiotherapy needed in 1 patient. 11/18 patients had endoscopic follow up and no evidence of recurrence was seen in all patients.

13/187 (7.0 %) non-rectal polyps had cancer. 9/13 had pre-resection evidence of cancer and therefore, covert cancer rate is 2.1 % (4/187).

Lesion size was correlated to cancer risk and no significant association was found (p=0.17). There was a higher risk of covert cancer in rectal polyps when compared to other non-rectal polyps (p=0.038) (See Table 1).

► Table 1

	<40mm in size n = 198 (%)	≥40mm in size n = 206 (%)	Non Rectal lesion n = 187 (%)	Rectal lesion n = 217 (%)
Covert cancers	6 (3.0)	12 (5.8)	4 (2.1)	14 (6.5)*
All cancers	18 (9.1)	13 (6.3)	13 (7.0)	18 (8.3)

* Significant p-value of <0.05

Conclusions Our data demonstrates the real-world risk of cancer in endoscopically-resected rectal polyps (8.3 %) with covert cancers in 6.5 % even after expert assessment. This supports en-bloc excision of these polyps. Size and non-rectal location are not significant predictors of cancer after expert assessment.

eP036 EVALUATING OF CHANGES IN COLONOSCOPY QUALITY INDICATORS SUBSEQUENT TO BOWEL PREPARATION ADEQUACY

Authors [Hula H.¹](#), [Stupnytskyy A.¹](#), [Artyushenko M.¹](#), [Vokh V.¹](#), [Kovalyshyn N.¹](#), [Patiy A.¹](#), [Kocherkevych O.¹](#), [Kozyak I.¹](#)

Institute 1 [Medical Center of St. Paraskeva, Endoscopy, Lviv, Ukraine](#)

DOI [10.1055/s-0042-1744889](#)

Aims Insufficient bowel preparation (BP) is known to cause a decrease in polyp detection rate (PDR) and adenoma detection rate (ADR). This study aimed to evaluate a statistically significant relationship between BP, rated on the Boston Bowel Preparation Scale (BBPS), with the ADR and the PDR. Primary endpoint was the ADR depending on BP adequacy.

Methods Random sample of 2000 patients (848 men and 1,152 women between 18 and 92 years old; median age, 54.5 years) who underwent successful total colonoscopy between January 2011 and October 2021 were included in this retrospective, single-center study. 56.1 % of patients were ≥ 50 years old. Exclusion criteria were age < 18 years, active inflammatory bowel disease, stenosis and non-total colonoscopy. Demographic data, BBPS scores, ADR, and PDR were evaluated. Data were analyzed using Spearman's rank, Chi-sq and Kruskal-Wallis test by SPSS.

Results There was a significant direct correlation between the BBPS score and ADR (Spearman's rank 0.856, $P < 0.001$). The ADR for the BBPS scores 8–9 was 46.3 %, vs. 32.1 % for the BBPS scores 6–7 and 21.8 % for the BBPS scores 4–5 ($P = 0.002$), and the PDR found at 42.3 %, 34.1 %, and 26.6 %, respectively ($P = 0.004$). Using split BP gave excellent cleansing (BBPS scores 8–9) in 79 % vs. 29 % in the case of day-before BP, and intermediate-quality cleansing (BBPS scores 6–7) in 20 % vs. 52 %, respectively ($P < 0.001$).

Conclusions Both ADR and PDR were significantly higher when bowel preparation was excellent rather than intermediate. Split bowel preparation remain the backbone for high ADR levels.

eP037 TRANSRECTAL ENDOSCOPIC DRAINAGE IN PATIENTS WITH ANASTOMOTIC LEAKS FOLLOWING RECTAL CANCER RESECTION

Authors Jagielski M.¹, Piątkowski J.¹, Jarczyk G.¹, Jackowski M.¹

Institute 1 Collegium Medicum Nicolaus Copernicus University, Department of General, Gastroenterological and Oncological Surgery, Toruń, Poland
DOI 10.1055/s-0042-1744890

Aims We assessed the efficacy and safety of transrectal endoscopic drainage by vacuum therapy in patients with intestinal anastomotic leakage after surgical treatment of middle and distal rectal tumors.

Methods We conducted a prospective analysis of treatment outcomes among patients undergoing surgery for middle and distal rectal tumors at the Department of General, Gastroenterological and Oncological Surgery of the Ludwik Rydygier Collegium Medicum in Bydgoszcz and Nicolaus Copernicus University in Toruń from 2016 to 2019.

Results Seventy-nine patients with middle and distal rectal tumors underwent laparoscopic resection. Intestinal anastomotic leak was identified in 18 (22.79 %) patients [all men, mean age 61.39 (43–86) years] during the postoperative period. Primary protective ileostomy was performed in 8/18 (44.44 %) patients. All 18 patients were treated with intraabdominal vacuum therapy via transrectal endoscopic drainage (success rate: 94.44 %, 17/18). The mean time from surgery to the diagnosis of leakage and initiation of endoscopic treatment was 16 (3–728) days. The mean number of endoscopic procedures per patient was 6 (1–11). The mean duration of endoscopic treatment was 22 (4–43) days. Complications of endotherapy occurred in 2/18 (11.11 %) patients treated endoscopically for bleeding from the abscess cavity. Moreover, 5/18 (27.78 %) patients required ileostomy during the endoscopic treatment. The mean follow-up period was 368 (118–724) days. Successful long-term outcome of endoscopic treatment was found in 15/18 (83.33 %) patients.

Conclusions Endoscopic rectal drainage using vacuum-assisted therapy is an effective and safe minimally invasive treatment in patients with intestinal anastomotic leaks following resection procedures within the middle and distal rectum.

eP038 ACCURACY OF TEXTURE AND COLOUR ENHANCEMENT (TXI), A NOVEL IMAGE ENHANCEMENT MODALITY, IN PREDICTING RESIDUAL NEOPLASIA IN COLONIC ENDOSCOPIC RESECTION SCARS

Authors John S.¹, Mickenbecker M.², Lyon A.²

Institutes 1 Gold Coast University Hospital, Digestive Health, Southport, Australia; 2 Gold Coast University Hospital, Digestive health, Southport, Australia

DOI 10.1055/s-0042-1744891

Aims Residual neoplasia after complete resection of colon polyps has been reported in 10–32 % and most can be treated endoscopically. TXI is a novel retinex-based image enhancement technology that changes texture, brightness, and colour of white light to increase the detection of subtle lesions. Narrow band imaging (NBI) has previously been reported to be accurate in predicting the presence of residual polyps. We assessed the accuracy of TXI in this regard.

Methods TXI and NBI were used to assess post resection colonic scars in a prospective cohort in a single centre over 6 months. Pictures and levels of confidence of prediction (high vs low) were recorded. Biopsy of the healthy scar or resection of any residual neoplasia discovered was performed. Accuracy of prediction was compared to histopathology results.

Results 49 post resection colonic scars were assessed in 32 patients. TXI accurately predicted the presence or absence of residual neoplasia in 47 (Sensitivity 100 %, specificity 95 %, Negative Predictive Value 100 %). High confidence prediction was possible in 91 %. 8 residual neoplasia detected by TXI were resected at the same procedure and 6 were confirmed to be residual adenomas.

Conclusions TXI, a novel imaging modality, is highly sensitive and accurate in detecting residual neoplasia in colonic scars. This enables real time detection and management of any residual polyp and may also reduce pathology costs. Further studies are required to establish its benefits.

eP039 RARE CLINICAL CASE OF RECTAL LOCALIZATION OF ACUTE MYELOID LEUKEMIA

Authors Kaddouri M.A.¹, Taamouch Z.¹, El Mqaddem O.¹, Azzemouri S.¹, Taiymi A.¹, Belkhatat C.¹, Chahi K.¹, Zazour A.¹, Khannoussi W.¹, Kharrasse G.¹, Ismaili Z.¹

Institute 1 University Hospital Center MED VI Oujda, Hepato gastroenterology departement /Digestive disease Research Laboratory, Oujda, Morocco

DOI 10.1055/s-0042-1744892

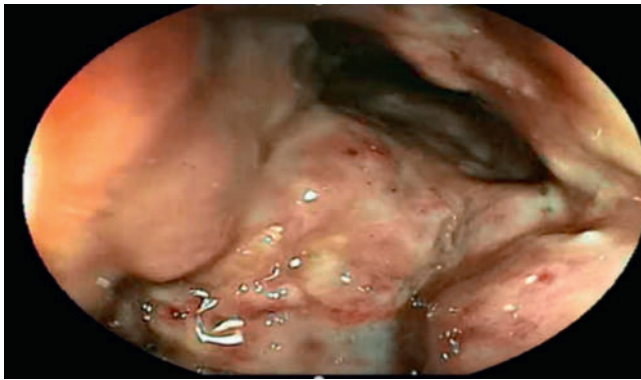
Aims An exceptional case of rectal leukemia

Methods We are reporting a rare clinical case of 20-year-old man with rectal involvement of acute myeloid leukemia.

A 20-year-old patient, diagnosed with acute myeloid leukemia was put on chemotherapy since 2 years, Abdominal control CT scan found a suspicious thickening of rectum measuring 11 mm. There were no gastro intestinal symptoms.

Results Colonoscopy objectived a stenosis ulcerative process measuring 3 cm, bleeding easily on contact and extending from the anal canal.

The Anatomopathological results showed malignant tumor proliferation of lymphoid cells. Stromal cells had atypical nucleus and arranged in diffuse sheet. immunohistochemical analysis found tumour cells expression of CD45 (+), CD34 (+) and CD117(+). The Ki67 index was 60 %. Rectal involvement of acute myeloid leukemia was diagnosed. Multidisciplinary therapeutic approach was to pursue Chemotherapy. The patient had severe sepsis and died 2 months later.



► Fig. 1

Conclusions Gastrointestinal manifestations of leukemia occur in 25 % of cases; they can touch the digestive tract from the esophagus to the rectum.

eP040 OUTCOMES AFTER COLORECTAL ESD LEARNING WITH IN-ROOM “GUEST-EXPERT”. FEASIBILITY AND RESULTS OF A DOUBLE-OPERATOR ESD REGIONAL CENTRUM IN SOUTHEAST SWEDEN

Authors Katinios G.¹, Minato Y.², Shafazand M.³, Yamamoto S.⁴, Bednarska O.¹

Institutes 1 Linköping University Hospital, Department of Gastroenterology and Hepatology, Linköping, Sweden; 2 NTT Medical Center Tokyo, Tokyo, Japan; 3 Sahlgrenska University Hospital, Internal Medicine and Gastroenterology Department, Gothenburg, Sweden; 4 National Hospital Organization Osaka National Hospital, Department of Gastroenterology and Hepatology, Osaka, Japan

DOI 10.1055/s-0042-1744893

Aims Colorectal ESD is a technically demanding procedure with a steep learning curve. Aim of this study is to evaluate the feasibility and outcomes of colorectal ESD after learning with a “guest-expert” in the room.

Methods Two experienced endoscopists started practicing colorectal ESD after observing colorectal ESDs, attending ESD workshops and practical training on animal models. Between February-2018 and April-2019, three ESD experts, with experience of more than 200 colorectal ESD each, were invited from other hospitals for 13 procedures in total during the initiation of ESD practice. The following ESD procedures, done independently by two endoscopists, were evaluated.

Results A total of 87 colorectal ESD procedures were completed from April-2019 until November-2021. 82%(n=71) were in rectum, and 18%(n=16) in other parts of the colon. 46%(n=40) were done with both operators simultaneously. Mean polyp size was 47,6 ± 18,6mm, (20,6 ± 15,8cm²). 79%(n=69) of procedures were completed with en-bloc resection and 21%(n=18) were converted to piecemeal resection because of technical difficulties(n=16) or invasive cancer(n=2). R0 resection was achieved in 79%(n=54) of en-bloc resections. No polyp relapse was observed in following controls until November-2021 in en-bloc resections(n=40). Periprocedural perforation occurred in 22%(n=19), 95%(n=18) treated conservatively (median hospital stay:1 day, range:0-3) and 5%(n=1) with explorative laparotomy. Post-polypectomy bleeding observed in 5%(n=4) and post-polypectomy syndrome in 3%(n=3). 3/10(30%) of diagnosed adenocarcinomas were curatively treated. Mean resection speed (time) for the last 25 cases was 10,6 ± 6,4 cm²/h (174 ± 97min).

Conclusions Colorectal ESD learning with in-room “guest-expert” may be a feasible ESD learning method for a double-operator ESD regional centrum.

eP041V COLD ENDOSCOPIC MUCOSAL RESECTION OF A LARGE LATERALLY SPREADING LESION TUBULO-VILLOUS ADENOMA WITH LONG-TERM FOLLOW-UP

Author Kheir A.O.¹

Institute 1 Cleveland Clinic Abu Dhabi, Digestive Disease Institute, Abu Dhabi, United Arab Emirates

DOI 10.1055/s-0042-1744894

A 64-year-old male with 46mm, Paris IIa, granular laterally spreading lesion at the mid-rectum. NBI showed high-confidence NICE classification type 2. A prophylactic broad-spectrum antibiotic was given. We performed piecemeal cold endoscopic mucosal resection (CEMR) technique using 10-mm size dedicated cold snare. No clips were needed. Regular diet was resumed immediately and home discharge 2-hours post CEMR. No post-discharge complications. Histology confirmed tubulovillous adenoma. Post-CEMR surveillance was performed after 18-months due to the COVID pandemic. The CEMR scar showed normal regenerative mucosa without endoscopic evidence or histologic evidence of residual neoplasia. CEMR is effective long-term for selected large flat adenomas.

eP042 TATTOOING IN THE COLON – IS THE DESIGN INFLUENCED BY OUTCOME?

Authors Khoo C.H.¹, McRobbie H.², Patel R.³

Institutes 1 Lakes DHB, General Surgery, Rotorua, New Zealand; 2 Lakes DHB, Lifestyle Medicine, Rotorua, New Zealand; 3 Lakes DHB, Gastroenterology, Rotorua, New Zealand

DOI 10.1055/s-0042-1744895

Aims Tattoo, using sterile carbon particle suspension, should be used to demarcate any lesion that may require localisation at future endoscopic or surgical procedures. There remains heterogeneity in the approach despite specific guidelines on lesion marking standards. We hypothesised that approach to tattooing is influenced by lesion management (endoscopic versus surgical).

Methods Retrospective review of all colorectal lesions undergoing tattoo over the last 12 months at Lakes DHB, a regional centre in New Zealand. Data was collected using ProVation endoscopic software and utilized electronic patient records. Characteristics of lesion marking were noted from endoscopy reports. Analyses were performed using chi-square and student t-test.

Results 123 patients underwent lesion marking with tattoo in the colon; Median age 68; IQR 61-73, Female 49 (39.8%), Maori Ethnicity 21 (17.1%). Location: Left 92 (74.8%) versus Right colon 31 (25.2%). Mean size of lesion 24.8mm. Malignant histology 39 (31.8%).

► **Table 1** Lesion marking characteristics in endoscopically and surgically resected lesions.

	Endoscopic Resection n = 88 (71.5%)	Surgical Resection n = 35 (28.5%)	* p Value
Tattoo volume documented	31 (35.2%)	23 (65.7%)	* 0.002
Photo-documentation	75 (85.2%)	19 (54.3%)	* 0.001
Anal side of lesion	85 (96.6%)	35 (100%)	0.747
2-3 Sites marked	5 (5.7%)	7 (20%)	* 0.052

Conclusions Photo-documentation of tattoo marking is better in lesions undergoing endoscopic resection. This not only facilitates improved endoscopic localisation during surveillance but enables confirmation of adequate distance between lesion and tattoo due to concerns about submucosal tethering at follow up polypectomy. More sites are marked in surgically resected lesions enabling optimal laparoscopic identification from the peritoneal side during surgery.

eP043 MODIFIED UNDERWATER ENDOSCOPIC MUCOSAL RESECTION FOR INTERMEDIATE-SIZED SESSILE COLORECTAL POLYPS

Authors Kim H.-S.¹, Kim D.H.¹, Park S.-Y.¹, You H.S.¹, Cho S.Y.¹, Lee Y.H.¹

Institute 1 Chonnam National University Hospital, Gwangju, Korea, Republic of
DOI 10.1055/s-0042-1744896

Aims Underwater endoscopic mucosal resection (UEMR) is effective for treating intermediate-sized colorectal polyps. However, it is sometimes difficult to obtain visibility in underwater conditions.

Methods This prospective, observational, single center study included consecutive patients with intermediate-sized (10–20 mm) sessile colorectal polyps. Modified UEMR method was used to initially snare the lesion without injection or water infusion. Thereafter, water was infused until the lesion was submerged, then it was resected using electrocautery. We also evaluated the rates of complete resection and procedure-related complications.

Results Forty-two patients with 47 polyps were enrolled in the study. The median procedure time and fluid infusion were 71 s (42–607) and 50 mL (30–130), respectively. The rates of R0 resection and *en bloc* resection were 80.9% and 97.9%, respectively, with 100% technical success. R0 resection was observed in 42.9% of polyps sized ≥ 15 mm and 87.5% sized < 15 mm ($p < 0.01$). Muscle entrapment was found in 71.4% of patients with polyps sized ≥ 15 mm and 10% < 15 mm ($p < 0.01$). Immediate bleeding occurred in 12.8% of cases and was controlled using a snare tip or coagrasper. Snare-tip ablation and coagrasper ablation were performed in 27.7% and 6.4% of patients, respectively. No delayed bleeding, perforation, or any other complications were reported.

Conclusions Modified UEMR can be used in cases in which securing visibility or performing the existing UEMR is challenging. Careful treatment is required when removing polyps > 15 mm in size.

eP044V ENDOSCOPIC FULL-THICKNESS RESECTION OF A SESSILE SERRATED ADENOMA EXTENDING INSIDE THE APPENDICEAL ORIFICE

Author Lajin M.¹

Institute 1 SHARP Health Care, Gastroenterology, San Diego, United States
DOI 10.1055/s-0042-1744897

A 63-year-old male was found to have a sessile serrated adenoma extending inside the appendix.

After discussing the different options, he decided to proceed with endoscopic full-thickness resection.

The polyp was pulled inside the FTR cap, following that the FTR clip was deployed and the polyp was resected and retrieved. He had rectal bleeding the day after the procedure. Repeated colonoscopy showed a stable blood clot at the site of FTR without active bleeding. He did not require a blood transfusion and was discharged after 48 hours of observation.

The final pathology was sessile serrated adenoma with clear margins.

eP045 PAIRED WORKING COMBINED WITH ON-DEMAND DIRECT EXPERT SUPERVISION ALLOWS A SAFE AND EFFECTIVE IMPLEMENTATION OF RECTAL ENDOSCOPIC SUBMUCOSAL DISSECTION IN A NON-ACADEMIC REFERRAL HOSPITAL

Authors Leclercq P.^{1,2}, Bastens G.¹, Plomteux O.¹, Bletard N.³, Demaret P.⁴, Bisschops R.², Lepilliez V.⁵

Institutes 1 Clinique Mont Legia – CHC Groupe Santé, Gastroenterology, Liege, Belgium; 2 UZ Leuven, Gastroenterology, Leuven, Belgium;

3 Clinique Mont Legia – CHC Groupe Santé, Pathology, Liege, Belgium;

4 Clinique Mont Legia – CHC Groupe Santé, Intensive Care Unit, Liege, Belgium; 5 Hôpital Privé Jean Mermoz, Gastroenterology, Lyon, France

DOI 10.1055/s-0042-1744898

Aims We evaluated the efficacy and the safety of rectal endoscopic submucosal dissection (ESD) implementation in a non-academic referral hospital performed in operator pairs associated with on-demand direct expert supervision.

Methods This is a retrospective analysis of the 90 first consecutive rectal ESDs performed between 2013 and 2021 in one non-academic referral hospital performed by two operators working in pairs, trained similarly to the current ESGE ESD curriculum.

Operators started rectal ESD as a duo, switching every 30' during the same procedure. On-demand direct expert supervision was requested when procedure was anticipated to be more complex.

The first half (P1) was compared to the second half of the series (P2). "Supervised" were compared to "unsupervised" procedures.

Endpoints included: rates of *en-bloc*/R0/curative resection, complications, ESD speed, 3- and 12-months recurrence rate.

Results Data and Results of ESD are detailed in Table 1.

There is no significant difference in *en-bloc*/R0/curative resection rates between P1 and P2 or "supervised" and "unsupervised" subgroups.

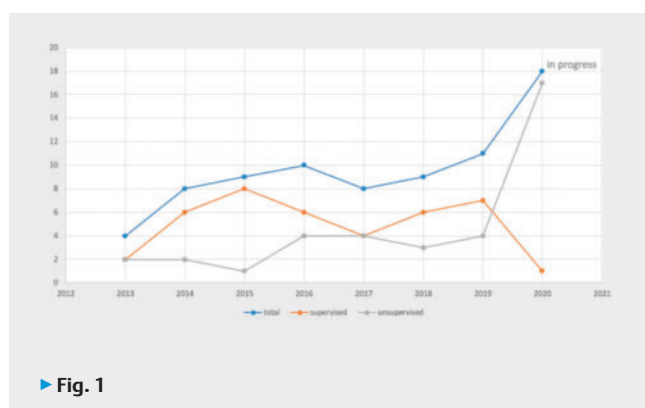
ESD mean speed slightly increased over time in the "unsupervised" group reaching $> 9 \text{ cm}^2/\text{h}$ (8.5 vs $9.2 \text{ cm}^2/\text{h}$, $p > 0.05$) without increase in complication rate.

P1 compared to P2 showed lower need of expert supervision with a gradual inversion of supervised/unsupervised ratio over time (66.7% vs 26.7% , $p < 0.05$).

There was no recurrence at 3- and 12-months follow-up when data available ($72/90$ at 3-mo; $44/90$ at 12-mo).

► Table 1

n = 90	Period 1 (1-45) 2013-18 Supervised n = 30 (66.7%)	Period 1 (1-45) 2013-18 Unsupervised n = 15 (33.3%)	Period 2 (46-90) 2018-21 Supervised n = 12 (26.7%)	Period 2 (46-90) 2018-21 Unsupervised n = 33 (73.3%)
ESD specimen surface, mean (mm ²)	1787	1281	2532	1155
ESD specimen great axis, mean (mm)	50.4	41.8	63.1	38.5
ESD speed, mean (cm ² /h)	20.2	8.5	16.6	9.2
ESD specimen histopathology	11	8	10	15
- LGD (44)	8	2	1	8
- HGD (19)	6	2	0	5
- Adenocarcinoma	0	2	1	1
* Tis (13)	3	1	0	3
* sm1 (4)	1	0	0	0
* sm2 (7)	1	0	0	1
* T2 (1)				
- NET (2)				
Resection	29 (96.7%)	14 (93.3%)	12 (100%)	32 (97%)
- en-bloc (96.7%, overall)	23 (76.7%)	12 (80%)	11 (91.7%)	30 (90.9%)
- R0 (84.4%, overall)	22 (73.3%)	12 (80%)	11 (91.7%)	28 (84.8%)
- Curative (80%, overall)				
Complications	2	1	0	0
- Bleeding (3%)	0	1	1	0
- Perforation (2%)	0	0	1	0
- Stenosis (1%)				



► Fig. 1

Conclusions Working in pairs combined with on-demand direct expert supervision allows effective implementation of rectal ESD in a non-academic referral center with safe gradual transition to autonomy.

eP046V AN UNUSUAL PHENOMENON – ARTIFICIAL INTELLIGENCE (AI)-AIDED DETECTION OF A ‘POLYP’ ARISING FROM A DIVERTICULUM

Authors Liew J.¹, Lim W.S.¹, Koh F.²

Institutes 1 National University of Singapore, Yong Loo Lin School of Medicine, Singapore, Singapore; 2 Sengkang General Hospital, Colorectal Service, Department of Surgery, Singapore, Singapore

DOI 10.1055/s-0042-1744899

Real-time AI-aided colonoscopy was performed for a patient who had Hinchey 1b acute sigmoid diverticulitis 3 months prior.

At the sigmoid colon, a polyp-resembling lesion, closely associated with a diverticulum was identified. This was easily pinched off using biopsy forceps

without much traction, atypical of colonic polyps. Histology findings showed granulation tissue.

In this case report, we demonstrated that granulation tissue associated with healed diverticular perforation mimic colonic polyps on real-time AI-aided colonoscopy. Potentially, tattoos may be placed to identify sites of recent perforation, allowing for more targeted parenchymal-sparing resection should complicated diverticulitis recur at the same sites.

eP047 ENDOSCOPIC MANAGEMENT OF LATERALLY SPREADING LESIONS OF THE RECTUM INCLUDING THE ANO-RECTAL JUNCTION: A SINGLE CENTRE EXPERIENCE

Authors McCarthy E.M.¹, Leyden J.^{1,2}, King S.¹, Lahiff C.^{1,2}

Institutes 1 Mater Misericordiae University Hospital, Gastrointestinal Unit, Dublin, Ireland; 2 University College Dublin, School of Medicine, Dublin, Ireland

DOI 10.1055/s-0042-1744900

Aims Endoscopic mucosal resection (EMR) is an established therapy for removing laterally spreading lesions of the rectum. The optimal therapy for removing anorectal junction LSLs (ARJ-LSLs) is unknown but use of EMR is supported by prospective observational data. Our aim was to complete a single centre review of clinical outcomes for rectal and ARJ-LSLs managed endoscopically over a four-year period

Methods Patients undergoing EMR for rectal and ARJ-LSLs > 10mm were included. Data were obtained using electronic records. Safety was evaluated by the frequencies of bleeding, deep mural injury and delayed perforation. Long-term efficacy was evaluated by the absence of recurrence at follow-up colonoscopy

Results 56 rectal LSLs > 10mm (including 15 ARJ-LSLs) were resected over 51 months. Mean age 65.1 years, median polyp size 32mm (range 10-80). En-bloc resection: 18% (n = 10). Histology: adenoma (n = 54), neuroendocrine tumour (n = 1) and invasive cancer (n = 1). High grade dysplasia was present in 21 ade-

noma's (37%). Overall complication rate: 9% (n = 5). 45/56 (80%) have undergone at least one site check. Recurrence occurred in 12.5%, 9%, 1.8% and 0 at SC1-SC4, respectively. Both recurrences were removed by piecemeal EMR and were SMSA level 4. No en-bloc resections recurred. SMSA level 4 was associated with higher risk of recurrence than level 1-3 ($p < 0.05$). Recurrence and complication rates were similar for rectal LSLs and ARJ-LSLs, as were en bloc resection rates (18% vs. 26%)

Conclusions Endoscopic resection of rectal LSLs, including ARJ lesions is safe and effective and should be guided by SMSA score. En bloc resection should be favoured where possible

eP048 INCIDENCE OF EARLY ONSET COLORECTAL CANCER AND ADVANCED NEOPLASIA DOES NOT HAVE MALE PREDOMINANCE – RETROSPECTIVE OBSERVATIONAL STUDY

Authors Mikoviny Kajzrlíkova I.¹, Vitek P.², Klvaná P.¹, Kuchar J.¹, Platos J.¹, Chalupa J.¹

Institutes 1 Hospital Frydek-Mistek, Beskydy Gastrocentre, Internal medicine department, Frydek-Mistek, Czech Republic; 2 Hospital Frydek-Mistek, Faculty of Medicine, University of Ostrava, Beskydy Gastrocentre, Internal medicine department, Frydek-Mistek, Ostrava, Czech Republic

DOI 10.1055/s-0042-1744901

Aims To assess the real-life incidence of early onset colorectal cancer and advanced neoplasias in a single non-university endoscopic center.

Methods We retrospectively assessed the incidence of advanced neoplasias and colorectal cancer in population under 50 years of age compared to older population. We collected the data from all colonoscopic examinations performed in non-university hospital from January 2012 to the end of June 2021.

Results In study period, 18257 colonoscopic examinations were done in total, 14728 in population 50 years and older and 3529 in population under 50 years of age. In our study there were 29 patients with early onset colorectal cancer (5.12% from 557 total) and 106 patients with early onset advanced neoplasias (4.47% from 2371 total). The incidence of early onset colorectal cancer and advanced neoplasias in younger group did not significantly differ between the sexes (see Table 1). Positive family history of colorectal cancer was not significantly associated with risk of early onset colorectal cancer ($p = 0.316$) or early onset advanced neoplasia ($p = 0.323$) in our study.

► Table 1

	All	Men	Women	p
Colorectal cancer ≥ 50	528/14728 (3.59%)	331/7942 (4.17%)	197/6786 (2.09%)	<0.001
Advanced neoplasias ≥ 50	2265/14728 (15.38%)	1477/7942 (18.60%)	788/6786 (11.61%)	<0.001
Colorectal cancer < 50	29/3529 (0.82%)	14/1772 (0.79%)	15/1757 (0.85%)	0.834
Advanced neoplasias < 50	106/3529 (3.00%)	58/1772 (3.27%)	48/1757 (2.73%)	0.361

Conclusions Early onset colorectal cancer represented 5.21% of all colorectal cancers diagnosed in the study period. The incidence of colorectal cancer and advanced neoplasias in population under 50 years of age was 0.82% and 3.00% compared to 3.59% and 15.38% in older population. In contrast to older population, the incidence of early onset colorectal cancer and advanced neoplasias did not differ between the sexes. Positive family history of colorectal cancer was not significantly associated with risk of early onset colorectal cancer or advanced neoplasias.

eP049 ENDOSCOPIC RESECTION OF COMPLEX SUPERFICIAL COLORECTAL LESIONS IN A LOW VOLUME CENTER: TECHNIQUES, SAFETY AND EFFECTIVENESS

Authors Muñoz González R.¹, Resina E.¹, Escobar Ortiz J.², Ezquerro Duran A.¹, Santander Vaquero C.¹, Miranda García P.¹

Institutes 1 Hospital Universitario La Princesa, Gastroenterology, Madrid, Spain; 2 Hospital Infanta Leonor, Madrid, Spain

DOI 10.1055/s-0042-1744902

Aims The aim of our study was to evaluate the endoscopic management of complex colorectal lesions in a low volume center. We assessed the safety and effectiveness of each treatment modality.

Methods Observational, retrospective study. Complex colorectal lesions were included: SMSA score 3-4, non-lifting lesions, peridiverticular or appendiceal lesions, risk of submucosal invasion. Lesion characteristics, type of resection and adverse events (AE) were collected. The need for surgery due to non-curative resection or AE was studied.

Results We included 121 lesions (march 2017- December 2021); 103 were resected using endoscopic mucosal resection (EMR), 8 by endoscopic full-thickness resection (EFTR) and 10 by endoscopic submucosal dissection (ESD).

EMR group: the median lesion size was 30 mm (IQR 20-35). 93% were Lateral Spreading Tumors. Histological analysis revealed adenomatous lesions in 79%; adenocarcinoma in 15%. Two patients had deep submucosal invasion (1.9%) and perforation requiring surgery appeared in 1.9%.

EFTR group, the median lesion size was 15 mm (IQR 10-30). The most frequent histological findings were high-grade dysplasia (38%) and intramucosal adenocarcinoma (25%). AEs requiring surgery occurred in one case (12%, perforation).

ESD group: the median lesion size was 41 mm (IQR 30-55). The histology was high-grade dysplasia in 40%; adenocarcinoma with superficial submucosal invasion in 20%; 20% had deep submucosal invasion requiring further surgery. No AE requiring surgery were observed.

Overall, 5% of patients required surgery due to non-curative resection or AE.

Conclusions The vast majority of difficult lesions were effectively resected by EMR.

Only 5% of lesions required surgery due to non-curative resection or AE.

eP050V DIRECT ANORECTAL INTUBATION DURING COLONOSCOPY – A LOGICAL NEW PARADIGM

Authors Mönkemüller K.¹, Manovski K.¹, Martínez-Alcalá A.¹

Institute 1 Amedeo University Teaching Hospital, Gastroenterology, Halberstadt, Germany

DOI 10.1055/s-0042-1744903

Traditionally, endoscopists are trained to introduce the colonoscope blindly through the anus into the rectum and then start the procedure. This practice originated during the era of fiberoptic endoscopy but has remained standard despite availability of wide-angle viewing video colonoscopy techniques, which practically allow for a better inspection of this area. Indeed, esophagogastroduodenoscopy was also inserted blindly until last century, but now it is standard to insert under direct vision. This video demonstrates on the feasibility, practicality and potential advantages of performing direct intubation and visualization of the anorectum with the colonoscope, which we have practiced since 2001.

eP051 IMPACT OF THE COVID-19 PANDEMIC ON THE DIAGNOSIS OF COLORECTAL CANCERS

Authors Mrabti S.¹, Benhamdane A.¹, Addajou T.¹, Sair A.¹, Guelleh M.O.¹, Touibi A.¹, Rokhsī S.¹, Radouane I.¹, Iloghmane H.¹, Laaroussi R.¹, Berrida R.¹, Sentissi S.¹, El Koti I.¹, Rouibaa F.¹, Benkirane A.¹, Seddik H.¹

Institute 1 Mohammed V Training Hospital, HEPATO-GASTRO-ENTEROLOGY II, Rabat, Morocco

DOI 10.1055/s-0042-1744904

Aims The objective of this study was to assess the impact of the COVID-19 pandemic on the diagnosis of colorectal cancers.

Methods Descriptive and analytical retrospective study during the first wave of the COVID-19 pandemic. The main objective was to determine the number of colorectal cancers diagnosed in 2020 during two periods: during confinement (from March 20 to June 30, 2020) and after confinement (from July 1 to December 31, 2020) and compare these results to the number of colorectal cancer diagnosed in 2018 and 2019 during the same periods. The study was performed using time lines as well as the rate of change between 2020, 2019 and 2018.

Results From March 20 to June 30, 2020, 236 colonoscopies and rectosigmoidoscopy were scheduled, 64 of which were performed, either a drop rate of 72.88%. The reduction rate was 72.76% compared to 2019 and 78.52% compared to 2018. Colorectal cancer was detected in 13 patients, either an incidence rate of 20.31% versus 10.21% in 2019 and 8% in 2018. From July 1 to December 31, 2020, 301 colonoscopies and rectosigmoidoscopies were performed, either a reduction rate of 53.62% compared to 2019 and 39.8% compared to 2018. Colorectal cancer was detected in 18 patients either an incidence rate of 5.98% versus 5.23% in 2019 and 6.4% in 2018

Conclusions COVID 19 pandemic has led to a sharp reduction in the number of endoscopic examinations performed without influencing the detection rate of colorectal cancers, thanks to a precise selection of patients and the indications for endoscopic examinations.

eP052 RISK FACTORS FOR COLONIC SESSILE SERATED LESIONS

Authors Nascimento C.¹, Revés J.¹, Morão B.¹, Frias Gomes C.¹, Glória L.¹, Ferreira A.¹

Institute 1 Hospital Beatriz Ângelo, Loures, Portugal

DOI 10.1055/s-0042-1744905

Aims Sessile serrated lesions (SSL) are pre-malignant colorectal lesions thought to be precursors to 20-35% of colorectal cancer (CRC). However, little is known about their epidemiology. Our aim was to identify risk factors for SSL.

Methods Cross-sectional study including patients submitted to high quality colonoscopy between 2016 and 2021. We excluded patients with history of polyposis syndromes, inflammatory bowel disease and colorectal cancer. Patients with adenomas were excluded from the analysis. We assessed potential risk factors (sex, body mass index, education level, use of NSAIDs, statins, calcium supplements, smoking habits, fiber intake, physical activity and family history of CRC). Multivariate regression analysis was performed.

Results We assessed 524 patients of which 310 with adenomas were excluded. Of the remaining 214 patients, 51% were female with a mean age of 59.2 ± 10.3 years. SSL were detected in 20.6% (n = 44). In the univariate analysis, we found that male sex, higher BMI, lower education level, and smoking were significantly associated with increased risk of SSL. Physical activity, drinking coffee, fiber intake, use of NSAIDs, statins or calcium supplements were not associated with SSL risk. In the multivariate analysis, sex (OR 1.04, 95%CI 1.0-1.07, p = 0.049), smoking status (OR 2.74, 95%CI 1.67-4.51, p < 0.001), education (OR 6.93, 95%CI 2.58 - 18.65, p < 0.001) and BMI (OR 1.09, 95%CI 1.02-1.17, p = 0.015) were found to be independent risk factors for SSL when adjusting for sex and age.

Conclusions SSL were independently associated with sex, education, smoking and high BMI. A better understanding of the epidemiology of SSL is warranted to institute effective predictive tools for risk stratification.

eP053 MALIGNANT POLYPS: ONE SIZE DOES NOT FIT ALL

Authors Nascimento C.¹, Revés J.¹, Morão B.¹, Cravo M.², Cortez Pinto J.¹, Glória L.¹

Institutes 1 Hospital Beatriz Ângelo, Loures, Portugal; 2 Hospital da Luz, Lisboa, Portugal

DOI 10.1055/s-0042-1744906

Aims The presence of high-risk features (HRF) predicting lymph node metastasis (LNM) and endoscopic piecemeal resection favors surgical approach in T1 colorectal cancer (CRC). The lack of consensus as to what constitutes HRF makes clinical decisions very challenging. Aim: to evaluate oncologic outcomes after malignant polyps' endoscopic resection.

Methods Retrospective cohort study of patients submitted to endoscopic resection of pT1 CCR in a single-center multidisciplinary clinic (2012-2020). Clinical, endoscopic and histopathological data were collected. Malignant polyps were classified as high risk if ≥ 1 are present: poor differentiation, deep submucosal invasion, lymphovascular invasion and positive resection margins. At the time of the study tumor budding was not considered a HRF.

Results We included 93 patients (71% male, mean age at diagnosis 67.4 ± 10.3 years). Median follow-up was 33 months (IQR 25 - 48). Polyps were located in the rectosigmoid in 84% (n = 77) and 72% (n = 55) were pedunculated. There were 31% piecemeal resections. HRF were found in 64% (n = 59) of the polyps. In 31% (n = 18) surveillance was decided (no residual or recurrent cancer were registered). From 41 patients who underwent surgery, LNM were identified in specimen of 4 (all had more than one HRF). Distant metastasis at follow-up were found in 3 patients: 2 previously submitted to surgery without residual tumor or positive lymph nodes; 1 was not submitted to surgery because of the absence of HRF (Haggitt 2). Considering recent guidelines, this patient would be have HRF (tumor budding).

Conclusions Our findings highlight the importance of complete histological reports, including tumor budding and stress the need to refine risk stratification.

eP055 SHOULD WE RECOMMEND THE PERFORMANCE OF ROUTINE COLONOSCOPIES AFTER ANY EPISODE OF ACUTE DIVERTICULITIS?

Authors Ojeda Gómez A.¹, Pico Sala M.D.¹, Barragán Martínez J.¹, García Soria A.¹, Sáez Fuster J.¹, Iñigo Chaves A.M.¹, Brotons Brotons A.¹, García M.F.¹, Sola-Vera Sánchez J.¹

Institute 1 Hospital General universitario de Elche, Digestive Care, Elche, Spain

DOI 10.1055/s-0042-1744908

Aims The incidence of acute diverticulitis (AD) is rising because of the progressive ageing of the population. Follow-up colonoscopies are usually performed to exclude concomitant colorectal cancer (CRC). However, recent publications indicate that their real benefit may not compensate for their potential risks. Our aim was to assess if performing colonoscopies to all patients suffering from an AD would improve the CRC detection.

Methods We carried out a descriptive and retrospective study. We reviewed the clinical history of patients who presented with AD from June/2018 to December/2018.

Results 60 (77%) of the 77 patients included presented a non-complicated AD. 18% had a complicated course being abdominal abscess the most frequent complication. The diagnosis was achieved through a CT-scan in all cases. 45% of patients underwent a colonoscopy from 1 to 3 months after the AD. 9 patients (12%) had a normal colonoscopy in the last 5 years. Only one patient

(1.3 %), who presented with complicated AD and suggestive malignant findings on CT-scan, was diagnosed with CRC.

► **Table 1**

Gender	Woman	42 (55 %)
Age (average)	64.2 years (± 13.07 years)	
Family or personal history of CRC	No	77 (100 %)
CT-SCAN findings	Acute diverticulitis	76 (99 %)
	Abscess	7 (9 %)
	Fistula	2 (3 %)
	Perforation	4 (5 %)
	Colonic wall > 5cm	1 (1 %)
	Pelvis mass	1 (1 %)
	Lymphadenopathy	2 (3 %)
	Abdominal liquid	11 (15 %)
	Obstruction	1 (1 %)
Follow-up colonoscopy findings	Diverticulum	44 (100 %)
	Estenosis	1 (1 %)
	Polyps	22 (55 %)
	Colorrectal cáncer	0 (0 %)

Conclusions We conclude that the recommendation of performing a routine colonoscopy after any episode of AD is not justified. This thinking comes from the time where the diagnosis of AD was achieved by an opaque enema, which has a low sensibility and specificity to discard CRC. Nowadays the implementation of enhanced CT-scan leads to a reliable diagnosis with a low rate of misleading CRC. In the presence of CRC risk factors, alarm symptoms, AD complicated presentation or malignant findings on CT-scan, the performance of a colonoscopy becomes essential.

eP056 EFFECTIVENESS AND TOLERABILITY OF COLONOSCOPY PREPARATION WITH 1L PEG + ASCORBIC ACID VERSUS SODIUM PICOSULPHATE WITH MAGNESIUM CITRATE IN ELDERLY PATIENTS IN A REAL LIFE SETTING

Authors Perez Arellano E.¹, Rodríguez García M.I.¹, Galera Ródano A.B.¹, Flores A.¹, de la Morena Madrigal E.¹

Institute 1 Hospital de la Zarzuela, Gastroenterology, Madrid, Spain
DOI 10.1055/s-0042-1744909

Aims Inadequate intestinal cleansing is significantly more common in elderly patients, so colonoscopy is considered more challenging than usual due to the difficulty of preparation in this population. This study aims to compare the effectiveness and tolerability of a low volume 1L polyethylene glycol (PEG) + ascorbic acid (1L PEG + A) versus Sodium Picosulphate with Magnesium Citrate (SPMC) in patients ≥ 65 years old.

Methods Post-hoc analysis of a systematic and prospective registry of outpatients prepared with 1L PEG + A and SPMC in patients ≥ 65 years old. Bowel cleansing in total and right colon was assessed through the Boston Bowel Preparation Scale (BBPS). Tolerance and side effects were recorded.

Results Between July 2019 and October 2021, 876 patients were included, of which 272 (31 %) were ≥ 65 years old.

► **Table 1** Cleansing success rates in total colon and the right colon.

BBPS	1L PEG + A (n = 156)	SPMC (n = 116)	p
TOTAL COLON	BBPS > 6: 93 %	BBPS > 6: 78 %	P < 0.01
	BBPS > 7: 79 %	BBPS > 7: 47 %	
RIGHT COLON	BBPS > 2: 92 %	BBPS > 2: 81 %	P < 0.01
	BBPS = 3: 65 %	BBPS = 3: 28 %	

Tolerance in SPMC and 1L PEG + A group was good in 88 % and 86 %, moderate in 7 % and 4 % and poor in 5 % and 10 % of the patients respectively ($p > 0.05$). 5 women in SPMC group had values < 130 mg/dl (one required emergency admission).

Conclusions Preparation for colonoscopy with 1L PEG + A achieves better optimal and high-quality bowel preparation compared to SPMC in patients > 65 years. Hyponatremia with clinical relevance were detected in SPMC group, which could make us assess changes in its use in elderly patients. These results confirm the effectiveness and tolerability of 1L PEG + A in elderly patients in a real-life setting.

eP057V REMOVAL OF AN OVER-THE-SCOPE-CLIP USING THE OVESCO-REMOVAL DEVICE BEFORE POLYPECTOMY OF THE POLYP RECURRENCE

Authors Pérez Pérez J.¹, Garrido Gallego F.², Villa Poza J.C.¹, Ponferrada Díaz Á.¹, Martínez-Alcalá Á.¹

Institutes 1 Hospital universitario Infanta Leonor, Madrid, Spain;
2 Hospital Universitario Infanta Leonor, Madrid, Spain
DOI 10.1055/s-0042-1744910

We present the case of a 64-year-old woman.

In November 2020, a 45 mm sessile polyp was found during a screening colonoscopy. The initial resection attempt was complicated by massive spurting-bleeding.

During the next colonoscopy we observed significant fibrosis and decided to perform EFTR with CLOSE AND CUT technique using OVESCO 14/6t clip. During follow up, we observed adenomatous tissue with LGD growing around the clip.

Due to the tissue overgrowing across the thinner area of the OVESCO Clip, it was necessary to cut it into 4 pieces. After removing the clip, we performed a piece-meal resection.

eP058V CHALLENGES IN THE OCCLUSION OF GI FISTULAE: ENDOSCOPIC CLOSURE OF A COMPLEX RECTOVAGINAL FISTULAE

Authors Pérez Pérez J.¹, Villa Poza J.C.¹, Garrido Gallego F.¹, Ponferrada Díaz Á.¹, Martínez-Alcalá Á.¹

Institute 1 Hospital universitario Infanta Leonor, Madrid, Spain
DOI 10.1055/s-0042-1744911

We present a case of a rectovaginal fistulae in a 63-year-old woman with past medical history of rectal cancer surgically resected in 2011.

The patient complained of an increasing presence of stool through the vagina. Surgical correction was offered, who declined, so we decided to repair it endoscopically.

First, we placed a guidewire through the fistula tract. Argon plasma coagulation was used on the fibrotic edges of the fistulae, which was then scraped with a brush. Endoscopic suture was performed using an OverStitch device (Apollo). We placed and sutured a self-expandable metallic stent (SEMS) instead of performing a discharge ileostomy.

eP059V RECTAL MIGRATION OF AN UROLOGIC HEM-O-LOK CLIP

Authors Pijoan Comas E.^{1,2}, Bayas Pástor D.C.³, Torres Monclús N.³, Vargas García A.^{1,2}, Vázquez Gómez D.³, Torres Vicente G.³, Miguel Salas I.³, Alburquerque Miranda M.^{2,1}, Zaragoza Velasco N.³, Gonzalez-Huix Lladó F.^{3,1}
Institutes 1 Clínica Girona, Girona, Spain; 2 Hospital de Palamós, Palamós, Spain; 3 Hospital Universitari Arnau de Vilanova, Lleida, Spain
DOI 10.1055/s-0042-1744912

A 64-year-old man with previous robotic radical prostatectomy for prostate adenocarcinoma underwent colonoscopy for colonic polyp surveillance. A hard nodular lesion was found in rectum, that was resected with cold snare, showing a residual white base. Resection was tried with cold snare, biopsy forceps and band ligation mucosectomy without success. Biopsies of the base showed normal mucosa. At 3 months control, a foreign body was found in rectum, in the previous nodular area, that seemed a non-absorbable polymeric ligation clip (Hem-o-lok), used in the prostatic surgery. The clip was not removed and had migrated spontaneously at 3 months control.

eP060 CLINICAL PROFILE, RISK FACTORS AND TREATMENT OUTCOMES OF CLOSTRIDIODES DIFFICILE ASSOCIATED DIARRHOEA: A HOSPITAL BASED OBSERVATIONAL STUDY FROM WESTERN INDIA

Authors Gadhikar H.¹, Raina H.¹, Patwardhan S.², Prayag P.³, Gandhi A.¹, Bhagwat S.¹, Nikumbh T.¹, Bapaye A.¹
Institutes 1 Deenanath Mangeshkar Hospital and Research Institute, Shivanand Desai Centre for Digestive Disorders, Pune, India; 2 Deenanath Mangeshkar Hospital, Microbiology, Pune, India; 3 Deenanath Mangeshkar Hospital, Infectious Disease, Pune, India
DOI 10.1055/s-0042-1744913

Aims To study the increasing incidence of Clostridioides difficile associated Diarrhoea (CDAD) in a tertiary hospital in central India.

Methods All adult patients of Diarrhoea, who presented to our hospital for last seven months and whose samples were sent for stool testing for Clostridioides difficile were included in the study. All demographic and clinical profile, possible risk factors and treatment response were evaluated. CDAD was confirmed with detection of Toxin A or B or both using ELISA.

Results N=267. Prevalence of CDAD-33.7%; toxin positivity -26.21% (70/267); Glutamate dehydrogenase (GDH) antigen positivity - 7.49% (20/267). Nosocomial infection - 58.80% (53/90); Community acquired infection - 35.55% (32/90); Health care associated infection - 5.57% (5/90). Recent antibiotic use, Proton Pump Inhibitors (PPIs) use, steroid use > 2 weeks, Intensive Care Unit (ICU) stay and chemotherapy were independent risk factors. Response rates to vancomycin and metronidazole-85.54% (77/90). Non or partial responders were treated with teicoplanin and probiotics with response rate of 61.53%. Faecal Microbiota Transplant (FMT) - 4 patients, clinical success - 100%. Recurrence rate of CDI - 6.66% (6/90). 30-day mortality rate - 3.33%.

Conclusions Clostridioides difficile associated Diarrhoea (CDAD) is one of the important causes of acute Diarrhoea in the hospital and community set up. PPIs, antibiotics, chemotherapy, steroids and ICU stay are the main risk factors for CDAD. Vancomycin and metronidazole are drugs of choice as first line treatment options for CDAD. Teicoplanin or FMT can be used in unresponsive or recurrent cases.

eP061 PARTICULAR FEATURES OF COLORECTAL POLYPS IN THE ELDERLY: HOW DO THEY DIFFER FROM THE YOUNG?

Authors Rokhsi S.¹, Mrabti S.¹, Addajou T.¹, Benhamdane A.¹, Touibi A.¹, Sair A.¹, Berrida R.¹, El kotli I.¹, Rouibaa F.¹, Benkirane A.¹, Seddik H.¹
Institute 1 Mohammed V Military Hospital, Rabat, Morocco
DOI 10.1055/s-0042-1744914

Aims The aim is to evaluate the differences between older and younger patients regarding the incidence of colorectal polyps, their endoscopic characteristics and the overall complication rate after resection.

Methods This is a retrospective study conducted from January 2000 to August 2021. Our patients were divided into 2 groups. The inclusion criteria were: patients with less than four polyps with a size > 3mm found during total colonoscopy with good characterization of the polyps. Descriptive and comparative study was done between the two groups using SPSS 24.0 software.

Results The mean age was 39.8 ± 8 years in group A and 64.4 ± 8.86 years in group B with no significant difference in sex ratio.

Polyps were mainly located in the left colon in both groups (49.1% and 39.1% in group A and B respectively). According to the Paris classification, there was a significant predominance of sessile polyps in group B (82.8% vs 66.7%, p=0.02).

Cold loop resection was the most common technique used in group A in 41.2% vs. 16.5% (p<0.001) while forceps resection was the most common in group B in 43.3% vs. 23.5% (p=0.014). The early complication rate, defined as the occurrence of bleeding after polypectomy, was not significantly different between the two groups (p=0.57), as well as the late complication rate after using complementary manoeuvres.

Conclusions Our study confirms that endoscopic resection of recto-colonic polyps is a safe procedure in elderly patients and that there is no difference in effectiveness compared to younger patients.

eP062 RISK FACTORS FOR COLORECTAL POLYPS

Authors Sair A.¹, Benhamdane A.¹, Addajou T.¹, Osman M.¹, Mrabti S.¹, Berrida R.¹, Sentissi S.¹, Elkoti I.¹, Rouibaa F.¹, Benkirane A.¹, Seddik H.¹
Institute 1 University of Mohamed V, Rabat, Morocco
DOI 10.1055/s-0042-1744915

Aims Colorectal polyps are the main precursor lesions of colorectal cancer (CRC). Detecting polyps is essential to reduce the incidence of CRC and the consequent morbi mortality.

In the current study, we aim to determine the prevalence and risk factors for colorectal polyps detected during colonoscopy.

Methods This retrospective, descriptive and single-center study of 1518 cases was conducted over a period from January 2018 to August 2021

Results The study included 1518 subjects. Among them, 356 (23.5%) had colorectal polyps. The mean age was 60.5 ± 12.68 years (age range: 19 – 92 years). The sex ratio (M/F) was 1.87 and 65.2% were male.

In multivariate analysis, age (OR: 0.9, 95%CI: [-0.04, -0.01], p<0.001) history of polyps (OR: 9.21; 95%CI: [1.09-3.56]; p<0.001), family history of CRC (OR: 2.27, 95%CI: [-0.34, -0.47]; p=0.007), presence of a colorectal process (OR: 0.13; 95%CI: [-2.78, -1.25]; p<0.001) and preparation (OR: 0.44; 95%CI: [-1.34, -0.28]; p=0.002) were significantly associated with the presence of colorectal polyps.

Conclusions In our study, we diagnosed polyps in 23.5% of patients. The presence of colorectal polyps was statistically significantly associated with age, history of polyps and the presence of colorectal process.

eP063 INTEREST OF COLONOSCOPY IN PATIENTS WITH CONSTIPATION: A COMPARATIVE STUDY ACCORDING TO AGE

Authors Sair A.¹, Benhamdane A.¹, Addajou T.¹, Osman M.¹, Mrabti S.¹, Berrida R.¹, Sentissi S.¹, Elkoti I.¹, Rouibaa F.¹, Benkirane A.¹, Seddik H.¹
Institute 1 University of Mohamed V, Rabat, Morocco
DOI 10.1055/s-0042-1744916

Aims Constipation is probably the most common digestive symptom. It may be the expression of an organic or functional pathology. The etiologies are multiple and must be eliminated. The aim of our study is to evaluate the inter-

est of colonoscopy in the exploration of constipation according to the age of the patient.

Methods This is a retrospective descriptive study, including 387 patients who underwent colonoscopy for constipation between January 2018 and August 2021.

Patients were divided into 2 groups: Group 1: age < 50 years and Group 2: age > 50 years

The epidemiological, clinical and endoscopic data of the patients were evaluated.

Patients with known IBD were excluded from our study. Data collection and statistical analysis were performed using SPSS 21.0 software.

Results A total of 1518 patients underwent colonoscopy, of whom 387 had constipation (25.5%).

The mean age of our patients was 57.18 ± 14.79, with a sex ratio (M/F) = 1.02. Colonoscopy was normal in 62.8% and pathological in 37.2% (G1:18.6%; G2:41.5%; $p < 0.001$). The main pathologies found were: rectal polyps in 61% (G1:46.7%; G2:69.1% $p = 0.092$), colorectal neoplastic lesions in 21.3% (G1:20%; G2:22.2% $p = 0.670$), colonic diverticulosis in 17.7% (G1:0%; G2:17.3% $p = 0.117$), appearance of colitis in 7.8% (G1:33.3%; G2:4.9% $p = 0.004$). In multivariate analysis, the factors associated with pathological colonoscopy for constipation were: age over 50 years ($p < 0.001$); male gender ($p = 0.002$); history of colorectal cancer ($p = 0.05$); and presence of associated anemia ($p = 0.01$).

Conclusions Constipation represents 25.5% of the indications for colonoscopy in our practice. Our study showed that constipation in the over 50s is an independent risk factor for pathological colonoscopy in cases of constipation. Male gender, history of CRC and anemia were also predictive factors for pathological colonoscopy in this context.

eP064 ENDOSCOPIC SUBMUCOSAL DISSECTION FOR THE TREATMENT OF GIANT COLORECTAL LESIONS. OUTCOMES FROM A PROSPECTIVE MULTICENTER REGISTRY

Authors [Santiago García J.¹](#), [De Frutos Rosa D.¹](#), [Rodríguez De Santiago E.²](#), [De María Pallares P.³](#), [Albeniz Arbizu E.⁴](#), [Marín Gabriel J.C.⁵](#), [Peñas García B.²](#), [Burgos García A.³](#), [Herreros de Tejada Echanojauregui A.¹](#)

Institutes 1 Puerta de Hierro University Hospital, Gastroenterology, Majadahonda, Spain; 2 Ramon y Cajal University Hospital, Gastroenterology, Madrid, Spain; 3 La Paz University Hospital, Gastroenterology, Madrid, Spain; 4 Complejo Hospitalario de Navarra, Gastroenterology, Pamplona, Spain; 5 Doce de Octubre University Hospital, Gastroenterology, Madrid, Spain
DOI 10.1055/s-0042-1744917

Aims To evaluate the outcomes of endoscopic submucosal dissection (ESD) for the treatment of giant (≥ 10 cm) colorectal lesions (CRL).

Methods Consecutive prospective registry of all CRL intentionally treated by ESD in 4 Spanish tertiary centers between January-2013 and November-2021. Lesions ≥ 10 cm according to the anatomopathological report were included for analysis.

Results 16 lesions in 16 patients were included. Lesions most frequently appeared in women (62.5%), mean age 67 (SD16). Main location was rectum (50%) followed by sigmoid colon (37.5%) and right-colon (12.5%). Mean size was 124.8mm (SD23.7). Predominant morphology was LST granular-mixed type (87.5%).

Endoscopic treatment was completed in 100% cases. En-bloc resection rate was 87.5%. 2 cases were converted to piecemeal hybrid-ESD. Mean procedure time was 367min (SD161) and mean hospital stay 2.5days (SD1.5).

Complications appeared in 62.5% cases: post-electrocoagulation syndrome (31.25%), delayed bleeding (12.5%), intraprocedural perforation (6.25%), stenosis (6.25%). 1 patient (6.25%) presented a delayed perforation being the only case requiring surgical treatment.

Definitive histology was: low-grade dysplasia (25%), high-grade dysplasia (56.25%), intramucosal carcinoma (6.25%) and submucosal carcinoma (12.5%). Complete resection rate was 43.75%. Resection was non-curative in 1 case (6.25%) due to submucosal invasion by carcinoma but patient declined further treatment. 8 cases (50%) with dysplasia presented positive/non assessable margins.

All patients are under medical follow-up (median time: 15.2months, IQR11.4). 14 patients (87.5%) underwent at least one follow-up endoscopy and only one (6.7%) local recurrence was detected and successfully treated by endoscopy.

Conclusions ESD is a very effective treatment for giant CRL. Its application should be limited to highly-experienced centers due to its technical complexity.

eP065 BARRIERS AND WILLINGNESS FOR COLORECTAL CANCER SCREENING IN A MUSLIM POPULATION OF SOUTH ASIAN COUNTRY: NATIONWIDE SURVEY (INTERIM ANALYSIS)

Authors [Shaikh T.¹](#), [Kamani L.¹](#), [Yousaf M.S.²](#), [Tareen K.³](#)

Institutes 1 Liaquat National Hospital Karachi, Gastroenterology and Hepatology, Karachi, Pakistan; 2 Prime Teaching Hospital, Gastroenterology and Hepatology, Peshawar, Pakistan; 3 Shaikh Khalifa bin Zayed Hospital Quetta, Gastroenterology and Hepatology, Quetta, Pakistan
DOI 10.1055/s-0042-1744918

Aims To evaluate barriers of CRC screening in Pakistani population aged > 40 years.

Methods A cross-sectional, questionnaire-based study was conducted among the general population from all provinces of Pakistan. Data is analyzed using Statistical Package for Social Sciences (SPSS version 21.0)

Results It is an ongoing study, with 1117 participants included. Mean age of 50.70 ± 7.07 years with 56% of males. 963 (86.2%) participants were unaware of CRC disease. Infact, 689 (61.7%) did not even hear about it. 655 (58.6%) had no intention to get screened in the future. The main barriers were lack of knowledge of CRC screening test ($p = 0.035$), lack of screening test facilities availability ($p = 0.001$), cost ($p = 0.000$), unsure about the safety of colonoscopy ($p = 0.000$), the ineffectiveness of screening test ($p = 0.000$), and lack of government-funded screening program ($p = 0.001$). The unavailability of a preferred gender doctor for colonoscopy was also a significant barrier ($p = 0.000$). 642 (57.5%) participants will not opt for colonoscopy if the preferred doctor is unavailable.

Conclusions In our ongoing survey, we found multiple colorectal cancer screening barriers among the general Pakistani population. A majority of participants were unaware of CRC. Extensive government-led awareness campaign must be launched. Moreover, the availability of preferred gender endoscopists must be ensured to increase compliance

eP066 DISEASE COURSE OF SEGMENTAL COLITIS ASSOCIATED TO DIVERTICULOSIS

Authors [Sinagra E.¹](#), [Alloro R.¹](#), [Maida M.²](#), [Rossi F.¹](#), [Conoscenti G.¹](#), [Testai S.³](#), [Marasà M.³](#), [Cristofalo S.³](#), [Purpura P.³](#), [Calandra A.³](#), [Pompei G.⁴](#), [Genova R.⁴](#), [Taormina D.⁴](#), [Di Ganci S.⁵](#), [Tarantino I.⁶](#), [Raimondo D.¹](#)

Institutes 1 Fondazione Istituto G. Giglio, Gastroenterology & Endoscopy Unit, Cefalù, Italy; 2 Section of Gastroenterology, S.Elia – Raimondi Hospital, Gastroenterology Unit, Caltanissetta, Italy; 3 Fondazione Istituto G. Giglio, Radiology Unit, Cefalù, Italy; 4 Fondazione Istituto G. Giglio, Pathology Unit, Cefalù, Italy; 5 Fondazione Istituto G. Giglio, Surgery Unit, Cefalù, Italy; 6 ISMETT, Endoscopy Service, Palermo, Italy
DOI 10.1055/s-0042-1744919

Aims This study aims to provide new data about the prevalence and the disease course of segmental colitis associated with diverticulosis (SCAD)

Methods We retrospectively reviewed a prospective cohort of 10438 patients undergoing a colonoscopy at our unit from 2014 to 2020. Data were collected

and analyzed in order to evaluate prevalence and clinical course of SCAD assessed with clinical and endoscopic remission rate, incidence of complications and mortality.

Results Out of 10438 patients undergoing colonoscopy 2256 (21.6 %) had diverticular disease, and 122 (1.1 %) received a diagnosis of SCAD. Overall, 85 patients (69.7 %) were male, 99 (81 %) had comorbidities, only 33 (27 %) were asymptomatic, 40 (32.8 %) had a previous diagnosis of diverticular disease. Mean age was 64.8 ± 12 years, while mean clinical follow up was 42.5 ± 24 months. 22 patients presented an endoscopic follow up (21.6 ± 30 months). Clinical remission rate was 96.7 %. Switch to an inflammatory bowel disease was observed in 3.3 %. Access to emergency department for complicated diverticular disease were registered in 15 patients (12.3 %). Adenomatous polyps and colorectal cancer were observed in 39 (31.9 %) and 2 patients (1.6 %), respectively. Overall mortality and surgery rate were 0 and 5 %, respectively.

At the univariate analysis, no variables were associated to clinical remission. A familial history for gastrointestinal disease ($p = 0.02$), and age ($p = 0.02$) were associated to access to emergency department

Conclusions To our knowledge, this is the largest study assessing the disease course of SCAD. Forthcoming studies, with a larger sample and adequate endoscopic follow-up are needed

eP067 COLORECTAL CANCER SCREENING IN THE ELDERLY – DOES INCREASED PREVALENCE NECESSITATE TIGHTER SURVEILLANCE?

Authors Suki M.¹, Abu-baker F.¹, Beshara A.¹, Ovadia B.¹, Gal O.¹, Kopelman Y.¹

Institute 1 Hillel Yaffe Medical Center, Affiliated with the Ruth and Rapaport Faculty of Medicine, the Technion, Gastroenterology and Hepatology Institute, Hadera, Israel

DOI 10.1055/s-0042-1744920

Aims With age, colon cancer (CRC) prevalence rises along with an increase in the yield from screening colonoscopy and a greater risk of complications. The elderly (> 75), and even more so, the very elderly (> 85), are especially vulnerable. We aimed to compare CRC findings in colonoscopies that were performed following a positive Fecal Immunochemical Test/Fecal Occult Blood Test (FIT/FOBT) in both elderly and very elderly age groups with those of younger subjects.

Methods We identified colonoscopies carried out in the years 1998-2019 following positive stool test for occult blood, as a screening tool for CRC in asymptomatic individuals. A finding of malignancy was compared between two patient groups – above and below the age of 75. Furthermore, a sub-analysis was performed, for malignancy findings in FOBT/FIT positives among patients older than 85 in comparison to younger than 75.

Results The colonoscopy findings in 10,472 subjects, 40-75-year-olds ($n = 10,146$) were compared with those of 76-110-year-olds ($n = 326$). There was no significant difference in prevalence of CRC detection rate in the two groups following positive FIT/FOBT (2.1 % vs 2.7 %, $p = 0.47$). Similar results for non-significant difference were obtained in the sub-analysis comparison of malignancy detection rate in the very elderly 0 % ($n = 0$) versus 2.1 % for < 75-years-old ($n = 18$), $p = 0.59$.

► Table 1

FOBT + for age group > 75, $n = 4,064$

Age			P value
40-75 ($n = 3841$)	76-85 ($n = 205$)	> 85 ($n = 18$)	
61.3 ± 7.4	78.55 ± 2.5	90.6 ± 6.4	
80 (2.1 %)	6 (2.9 %)	0	$p = 0.59$

Conclusions Although the prevalence of CRC increases with age, no significant increase in the detection rate of CRC by FOBT was found in both the elderly and very elderly age groups. Screening colonoscopy in elderly patients should be performed only after careful consideration of potential benefits, risks, and patient preferences.

eP068 TREATMENT OF A IATROGENIC PERFORATION OF A COLORECTAL ANASTOMOTIC STRICTURE USING A LUMEN APPOSING METAL STENT (LAMS) RELEASED WITHOUT EUS

Authors Togliani T.¹, Pilati S.¹

Institute 1 Hospital of Mantova, Gastroenterology Unit, Mantova, Italy

DOI 10.1055/s-0042-1744921

Aims LAMS are generally applied under EUS guide to treat pancreatic fluid collections, to drain the gallbladder or the common bile duct, to create gastro-entero anastomoses. The aim of this case report was to assess the possibility to release a LAMS during colonoscopy, without the EUS guide, in case of a iatrogenic perforation after a balloon dilation of a stenotic colorectal anastomosis.

Methods A 51-year-old woman underwent left hemicolectomy with colorectal anastomosis and temporary ileostomy due to a sigmoid diverticular abscess. One month later colonoscopy showed a complete stenosis of the colorectal anastomosis; a guide wire was barely passed through, a 6mm balloon dilation was done but the occurrence of a small perforation was confirmed by the injection of a water-soluble contrast. To treat both the perforation and the stenosis we chose a 15mm LAMS. Using the same large channel gastroscope we passed the guide wire through the stricture and the catheter of the LAMS over it; finally, we released its distal flange above the stricture under fluoroscopic control and the proximal flange below the stricture under endoscopic view. After the stent deployment, additional gastrograffin was injected in the colic lumen, without external spread.

Results No early or late adverse events occurred and after two months the LAMS was removed; the anastomosis appeared wide, without endoscopic or radiologic signs of perforation; the day after the ileostomy was closed.

Conclusions The EUS-less deployment of a LAMS during colonoscopy was technically and clinically successful as a rescue therapy for a iatrogenic perforation of an anastomotic stricture.

eP069 TREATMENT OF RECURRENCES AFTER ENDOSCOPIC MUCOSAL RESECTION OF LARGE NON-PEDUNCULATED COLORECTAL POLYPS IN DAILY CLINICAL PRACTICE IS CHALLENGING

Authors Turan A.S.¹, Antonius E.¹, Terhaar sive Droste J.², Schrauwen R.W.³, Schreuder R.-M.⁴, Straathof J.W.⁵, Pijnenborg N.², Siersema P.D.¹, Van Geenen E.J.¹

Institutes 1 Radboudumc, Nijmegen, Netherlands; 2 Jeroen Bosch Hospital, 's Hertogenbosch, Netherlands; 3 Bernhoven Hospital, Uden, Netherlands; 4 Catharina Hospital, Eindhoven, Netherlands; 5 Maxisima Medical Centre, Veldhoven, Netherlands

DOI 10.1055/s-0042-1744922

Aims Recurrence during surveillance after endoscopic mucosal resection (EMR) of non-pedunculated colorectal polyps ≥ 20mm occurs in approximately 20 % and endoscopic resection of recurrences is not always successful. We evaluated recurrence rates after colorectal EMR of polyps ≥ 20 mm in daily clinical practice and the success of treatment of recurrent adenoma.

Methods In this retrospective multicentre cohort study, patients who underwent colorectal EMR for ≥ 1 non-pedunculated colorectal polyps ≥ 20 mm between 2014-2020 were included. Primary endpoints were adenoma recurrence during surveillance colonoscopy 6 months after EMR, resection technique of

recurrences, and adenoma re-recurrences at 18 months after initial EMR. Secondary endpoints were predictive factors for (re-)recurrences.

Results EMR was performed for 1,284 large colorectal non-pedunculated polyps, and ≥ 1 surveillance colonoscopy was performed after 1,013 EMR procedures. Recurrence during the first surveillance colonoscopy at 6 months after EMR was seen in 263 polyps (26.0%), but recurrence rates decreased during 2014–2019 from 33.8% to 4.3%. Treatment of choice for recurrence was EMR (49.4%), followed by cold snare resection (16.7%) or an avulsion technique (8.0%). A re-recurrence was seen in 33.5% (52/155) of polyps.

Conclusions Recurrence at 6–18 months after colorectal EMR of large non-pedunculated polyps in daily clinical practice is substantial but recurrence rates were found to decrease over time. Treatment of recurrences is challenging and was not successful in two-third of polyps, highlighting the need for further improvement.

eP070 CAP-SUCTION UNDERWATER ENDOSCOPIC MUCOSAL RESECTION (CAP-UERM) AS AN EASY-TO-USE AND EFFICIENT TECHNIQUE FOR TREATING FLAT COMPLEX COLORECTAL LESIONS: A PROOF OF CONCEPT PILOT STUDY

Authors Uchima H.^{1,2}, Calm A.¹, Marín I.¹, Colán-Hernández J.¹, Caballero N.¹, Iborra I.¹, Puig M.¹, Fortuny M.¹, Ortega A.², Turro R.², Da Costa M.², Temiño R.², Rosinach M.², Mata A.², Domenech E.¹, Moreno V.¹, Espinos J.², Pellisé M.³

Institutes 1 Hospital Universitari Germans Trias i Pujol, Gastroenterology, Badalona, Spain; 2 Teknon Medical Center, Gastrointestinal Endoscopy, Barcelona, Spain; 3 Hospital Clinic de Barcelona, Barcelona, Spain
DOI 10.1055/s-0042-1744923

Aims To evaluate the safety, utility and technical success of Cap-suction underwater EMR (CAP-UERM) for the treatment of complex colorectal lesions.

Methods Prospective cohort study including non-pedunculated colorectal lesions with the following characteristics: flat-depressed, partially resected with flat residual lesion, previous attempted non-lifting lesions, or involvement of the appendiceal orifice (AO) or ileocecal valve (ICV) between September 2020 and November 2021 in two centers and a single endoscopist with experience in "classic" UERM (as described by Binmoeller). All cases were performed by CAP-UERM that consists in using a conic-shaped cap to apply underwater suction of the lesion until the target area shows underwater infolding (Figure 1) making snaring easier. Technical success was defined as macroscopically complete resection in the first session.

Results 76 resections in 56 patients (mean age 66.25 years, 54% men) were performed.

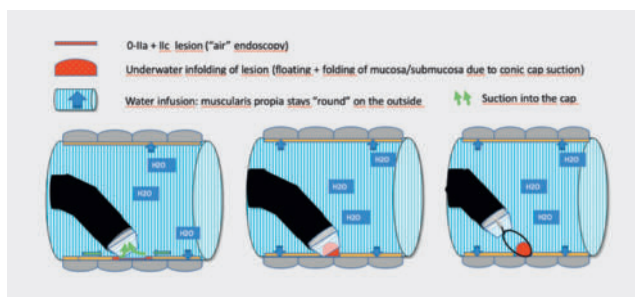
Characteristics of lesions and final histology are shown in Table 1.

There were 3 intraoperative bleeding that were controlled with tip of snare soft-coagulation and 1 delayed bleeding in a patient under anticoagulants that required blood transfusion and was treated with endoscopic clipping. There were no other complications including no perforations nor deep mural thermal damage in the defect. Technical success was 100%, en-bloc resection 55.3% (80% for lesions <20mm).

No recurrences were detected (median follow-up 177 days in 37 lesions/29 patients).

► Table 1

Characteristics of the lesions and Histology		
Size mm (IQR)	23.26 (15 – 28.75)	
Location, n (%)	AO	11 (14.5%)
	ICV	7 (9.2%)
	Cecum	15 (19.7%)
	Right Colon	9 (11.8%)
	Hepatic Flexure	13 (17.1%)
	Transverse	9 (11.8%)
	Splenic flexure	1 (1.3%)
	Left colon	1 (1.3%)
	Sigmoid	6 (7.9%)
	Rectosigmoid junction	2 (2.6%)
	Rectum	2 (2.6%)
Paris, n (%)	0-IIa	35 (46.1%)
	0-IIa + Is	23 (30.2%)
	0-IIa + Ilc	18 (23.7%)
Final histology, n (%)	LGD	30 (39.5%)
	HGD	10 (13.2%)
	Non-dysplastic SSL	17 (22.4%)
	Dysplastic SSL	17 (22.4%)
	Others	2 (2.6%)



► Fig. 1

Conclusions CAP-UERM is an easy-to-apply and safe technique that has the potential of being a efficient alternative for the management of flat, non lifting or difficult location complex colorectal lesions.

eP071 CLINICOPATHOLOGIC PROFILES, ENDOSCOPIC FEATURES AND OUTCOMES OF PATIENTS WITH YOUNG-ONSET COLORECTAL CANCER AT THE UNIVERSITY OF THE PHILIPPINES – PHILIPPINE GENERAL HOSPITAL

Authors Velasco M.D.¹, Sacdalan D.B.¹, Sacdalan D.¹, Zano F.¹

Institute 1 University of the Philippines – Philippine General Hospital, Manila, Philippines

DOI 10.1055/s-0042-1744924

Aims This study aims to describe endoscopic findings in young CRC patients (in addition to the clinical, pathologic features and outcomes).

Methods This was a cross-sectional, retrospective study. Identification of cases was done through review of the Section of Gastroenterology and Section of Medical Oncology's patient census from the period January 2013 – August 2017. All patients 19 – 49 years of age diagnosed with colon or rectal cancer who underwent colonoscopy at PGH and then subsequently admitted, with

complete medical records, were included in this study. Clinical data, endoscopic and histopathologic findings, as well as outcomes were noted.

Results A total of 80 cases of colonic or rectal masses on colonoscopy were identified. Fifty-five percent were male, with average age at diagnosis of 39 years old. Hematochezia was the most common symptom, with an average of 8 months from symptom onset to initial consult. Majority of the lesions were in the rectum and sigmoid. Only two patients presented with synchronous malignant lesions. Fifteen percent had concomitant colonic polyps. Twenty lesions (25%) were noted to significantly obstruct the lumen. Sixty-five patients (81%) were found to have an adenocarcinoma on histopathology. Thirty patients (37.5%) presented with Stage IV cancer.

Conclusions Young-onset CRC in Filipino patients presents almost equally in both sexes, and is not associated with a personal or family history of predisposing conditions. A delay in diagnosis could explain the advanced stage at presentation. Further studies focusing on genetic profiles can determine the genotypic and phenotypic presentation of these patients.

eP072 CLINICAL CHARACTERIZATION AND MUTATION SPECTRUM IN CRETAN PATIENTS WITH HEREDITARY POLYPOSIS SYNDROMES

Authors Velegaki M.¹, Fostira F.², Saloustros E.³, Strehle A.⁴, Agiannitopoulos K.⁵, Mavroudis D.⁶, Paspatis G.¹

Institutes 1 Venizeleio General Hospital, Department of Gastroenterology, Heraklion, Greece; 2 National Center of Scientific Research Demokritos, Molecular Diagnostics Laboratory, Athens, Greece; 3 University Hospital of Larissa, Department of Oncology, Larissa, Greece; 4 Venizeleio General Hospital, Department of General Surgery, Heraklion, Greece; 5 Genekor Medical S.A, Athens, Greece; 6 University Hospital of Heraklion, Department of Oncology, Heraklion, Greece

DOI 10.1055/s-0042-1744925

Aims Hereditary polyposis syndromes are associated with an increased risk of colorectal cancer (CRC). Adenomatous polyps are present in familial adenomatous polyposis (FAP), *MUTYH*-associated polyposis (MAP) and *NTHL1*-associated syndrome. Hamartomatous polyps are developed in Peutz-Jeghers and juvenile polyposis syndrome. The aim of this study was to investigate the phenotype and mutation spectrum of these syndromes among Cretan population.

Methods All Cretan patients who underwent colonoscopy at Venizeleio General Hospital between 1998 and 2021 with a diagnosis of ≥ 10 adenomas or ≥ 2 Peutz-Jeghers polyps or ≥ 5 juvenile polyps were retrospectively reviewed. Genetic testing included a next-generation sequencing gene panel (Herediti-GENE).

Results Overall, 70 apparently unrelated probands were analyzed. Genetic testing revealed 5 *APC* mutations (c.730_731delAG, c.4653_4656delAGAG, Q1045X, c.3829delT, c.847C>T), 4 *MUTYH* mutations in 5 probands (c.1012C>T, c.1187G>A, c.734G>A, c.1227_1228dup), one *NTHL1* mutation in 2 probands (c.268C>T), one *BMPRIA* (c.68-2A>G) and one *STK11* mutation (c.842_843insC). MAP was diagnosed during screening colonoscopy in 60% of MAP patients (3/5) while 2/5 were diagnosed with CRC, both of whom carriers of the c.1012C>T variant. Two probands carrying the *NTHL1* c.268C>T variant were diagnosed with > 50 colonic adenomas and one was diagnosed with CRC twice at ages 31 and 65.

Conclusions The genetic investigation of Cretan population revealed that every FAP family tested carried a different mutation. *MUTYH* mutation carriers presented variations in phenotype while the c.1012C>T variant was associated with a more severe phenotype. *NTHL1* mutations resembled *APC*- and *MUTYH*-associated polyposis, in terms of polyp number present at diagnosis.

eP074 PREDICTIVE FACTORS OF COMPLICATIONS IN COLORECTAL SUBMUCOSAL DISSECTION, A FRENCH TERTIARY CENTER EXPERIENCE

Authors Vinson M.¹, Chevaux J.-B.², Schaefer M.², Albuissou E.³, Belle A.², Gauchotte G.⁴, Germain A.⁵

Institutes 1 CHRU NANCY, Department of Hepatogastroenterology, Nancy, France; 2 Nancy University Hospital, Department of Hepatogastroenterology, Nancy, France; 3 Nancy University Hospital, Unit of methodology, data management and statistic, Nancy, France; 4 Nancy University Hospital, Department of Pathology, Nancy, France; 5 Nancy University Hospital, Department of Digestive Surgery, Nancy, France

DOI 10.1055/s-0042-1744927

Aims Colorectal endoscopic submucosal dissection (ESD) is an innovative technique from Japan to resect superficial tumors without any size limit and avoid a complete monobloc resection. Colorectal ESD main complications are perforation, delayed bleeding and post electrocoagulation syndrome (PECS), appearing approximately in 10% of cases. This study aim was to define the incidence of colorectal ESD related complications and identify predictive factors of complications in a French tertiary center.

Methods All the colorectal ESD procedures performed in Nancy's university hospital were retrospectively identified. Endoscopic, clinical and biological data were collected and analyzed.

Results 180 ESD were performed between June 2016 and November 2020. The characteristics of the patients, the lesions and the histological outcomes are shown in Table 1. Perforation rate was 6,6%, delayed bleeding rate was 5% and post-ESD electrocoagulation syndrome rate was 10%. No death occurred. Univariate analysis identified female gender ($p=0,026$) and median procedure time ($p=0,016$) as predictive factors for perforation. Arterial hypertension ($p=0,037$), rectal location ($p=0,02$), use of anticoagulant agents ($p=0,045$), median procedure time ($p=0,005$), and tumor size ($p=0,035$) were predictive factors for delayed bleeding. Median procedure time ($p=0,003$), tumor size ($p=0,004$) and temperature measured the afternoon after ESD ($p=0,0001$), were identified as predictive factors for post-ESD electrocoagulation syndrome. In our study, multivariate analysis did not identify any significative predictive factors.

► Table 1

Patients, tumor and procedure characteristics (n = 180)	n (%)
Median age (IQR)	68 (61-75,75)
Use of Anticoagulant agents	27 (15)
Maximal diameter mm (IQR)	50 (35-66,75)
R0 endoscopic resection	165 (91,7)

Conclusions In this tertiary university care center study, ESD appears to be a safe and effective procedure. Few risk factors for complications were identified in univariate analysis but none in multivariate analysis

eP075 SEX SPECIFIC DIFFERENCES IN COLORECTAL CANCER MORTALITY AFTER SCREENING COLONOSCOPY

Authors Waldmann E.^{1,2}, Jiricka L.³, Zessner-Spitzenberg J.^{1,2}, Majcher B.^{1,2}, Rockenbauer L.-M.^{1,2}, Penz D.², Trauner M.^{1,2}, Ferlitsch M.^{1,2}

Institutes 1 Medical University of Vienna, Div. of Gastroenterology and Hepatology, Dept. for Internal Medicine III, Vienna, Austria; 2 Quality Assurance Working Group, Austrian Society for Gastroenterology and Hepatology, Vienna, Austria; 3 Dept. of Clinical Biometrics, Vienna, Austria

DOI 10.1055/s-0042-1744928

Aims The prevalence and number needed to screen of colorectal adenomas are comparable between men aged 45 to 49 years and women aged 55 to 59 years. The aim of this study was to determine sex specific differences in colorectal cancer mortality and estimate the association with adenomas and high-risk polyps at screening colonoscopy.

Methods We analyzed 338,908 individuals who underwent colonoscopy within a national colorectal cancer screening program in Austria between 01/2007 and 12/2020.

Results Mean age (60 years [IQR 54-68]) and sex distribution in all age groups was nearly identical. Men had significantly higher odds to have adenomas, high-risk polyps, or colorectal cancer detected at colonoscopy than women (1.83 [1.80-1.86], 1.66 [1.62-1.70], and 1.82 [1.67-1.97], respectively). Strikingly, male sex, when compared to female sex, was associated with a 2-fold [HR 2.045] increased in risk to die from colorectal cancer when an adenoma was detected, and an 8-fold [8.643] increased risk when an advanced polyp was found at the screening colonoscopy.

Conclusions Men with an adenoma or high-risk polyp detected at screening colonoscopy were at significantly higher risk to die of colorectal cancer compared to women.

eP076 COLONOSCOPY IN THE VERY ELDERLY: SHOULD WE JUST UTILISE THE CT SCANNER?

Authors Williams S.¹, Bergbaum C.¹, Norton B.¹, Hung A.¹, Baskind S.¹, Besherdas K.¹

Institute 1 Royal Free NHS Foundation Trust, London, United Kingdom
DOI 10.1055/s-0042-1744929

Aims Lower gastrointestinal symptoms are common in the very elderly; however, colonoscopy is not always appropriate due to choice, fitness and/or periprocedural risk. In a cohort where the vast majority already undergo cross-sectional imaging, computed tomographic colonography (CTC) could become the first-line test. We analysed a very elderly cohort undergoing colonoscopy to assess the diagnostic yield and eventual treatment.

Methods We performed a retrospective analysis of 122 elderly patients aged ≥ 85 , who underwent colonoscopy in 2020 at Chase Farm Hospital, London. Patient demographics, indication, diagnosis and management were determined from endoscopy databases.

Results The average age was 87(85-100) with 57 % having ≥ 3 major comorbidities. Colorectal cancer (CRC) was found in 22(18 %) patients and polyps ≥ 6 mm in 38(31 %). Among those with CRC eight underwent curative surgery, three declined, three had chemo/radiotherapy and eight received best supportive care. All cause one-year mortality was 7.4 %. CT was completed in 64 % before endoscopy. Of the 36 % who did not undergo imaging two were diagnosed with cancer and ten had polyps ≥ 6 mm.

Conclusions There was a high prevalence of CRC and large polyps, but minimal patients underwent definitive treatment. In addition, in a cohort with a 7.4 % 1-year mortality the risk/benefit of removing diminutive polyps unlikely to develop into clinically significant tumours needs to be questioned. We should consider a CTC-first approach in this age group to enable better risk stratification and discussion about colonoscopic intervention to prevent unnecessary, high-risk procedures, which would have prevented over a quarter of colonoscopies in our cohort

eP077 ACETIC ACID WITH NBI/BLI FOR PIT PATTERN DIAGNOSIS OF THE COLORECTAL POLYPS

Authors Yamamoto S.¹, Ishida H.¹, Mita E.¹

Institute 1 National Hospital Organization Osaka National Hospital, Gastroenterology and Hepatology, Osaka, Japan
DOI 10.1055/s-0042-1744930

Aims Kudo's pit pattern classification has been used for endoscopic evaluation of colorectal polyps. Our aim is to analyze the feasibility of acetic acid together

with NBI or BLI (aceto-electrical chromoendoscopy; AEC) for inspecting the pit pattern.

Methods This is a retrospective analysis of a prospectively maintained database between April 2020 and July 2021. Lesions with apparent appearance of advanced cancer were excluded. We used 1.5 % acetic acid spraying directly through endoscopic channel. We evaluated the polyps with white light and Japan NBI Expert Team (JNET) classification followed by pit pattern using AEC.

Results We performed AEC in 34 lesions. Endoscopic treatment was performed in 25, and surgery performed in 9. Numbers in each JNET type (1/2A/2B/3) were 3/16/10/5. Numbers in each pit pattern (II/IIIL/IIIs/VI/VI-Low irregularity (L)/VI-High irregularity (H)/V_N) were 4/4/3/5/6/9/3. In comparison with histology, 1 hyperplastic polyp, 1 adenoma and 2 SSL were included in lesions with type-II pit. All 7 lesions with type-III pit and 4 with type-IV pit were adenoma. Tis cancer was seen in lesions with type-IV/VI-L/VI-H as 1/3/3. T1 cancer was seen in lesions with type-VI-H/V_N as 4/2. Two T2 cancer was seen in type-VI-H and in type-V_N. We determined the indication of treatment based on these evaluations, and there was no under or over estimation of the treatment.

Conclusions AEC was feasible for evaluating the pit pattern of the colorectal polyps and may be useful for appropriately indicating endoscopic treatment or surgery for these lesions.

eP078 ANALYZING EFFECTIVENESS AND SAFETY OF BOWEL PREPARATION USING SAME-DAY PICOSOLUTION AND BISACODYL

Authors Yoon J.Y.¹, Kim E.S.¹, Chun H.J.¹, Jeon Y.T.¹, Keum B.¹, Choi H.S.¹

Institute 1 Korea University College of Medicine, Seoul, Korea, Republic of
DOI 10.1055/s-0042-1744931

Aims Since PS/MC and BIS/PEG has lesser volume to intake, the patient's compliance is high and the usage rate is increasing. Concerning about electrolyte imbalance, usually a split-dose regimen was used, in which whichever preparation was taken in the evening of the previous day and in the morning of the procedure. However, the patients' quality of sleep decrease, nowadays the idea of same day-PS/MC and same day-BIS/PEG is emerging as alternative method.

Methods This single center study recruited patients who had total colonoscopy between January 2020 and April 2021. Before the patients underwent total colonoscopy, the indication of endoscopy had been documented. Underlying diseases and medications of the patients related to constipation had been checked. During the endoscopy, Boston Bowel Preparation Scale (BBPS) and HCS score were evaluated by a single performer. In addition, cecal intubation success and time of procedure and withdrawal were also recorded. Since the bowel prep can cause electrolyte imbalance, serum levels before and after patients' bowel preparations about above mentioned were measured.

Results 300 cases were enrolled to this study. Based on BBPS and HCS score, the bowel preparation at right colon was not inferior in same-day group than split-day group. Procedural time was compared and there was no significant difference between two groups. Patient satisfaction level was also higher on same-day PS/MC group than split-day group. Electrolyte imbalance were not significantly different.

Conclusions Total colonoscopy is a procedure which patients often express unwillingness due to bowel preparation. Since quality of life is considered to be more and more important these days, ease of bowel preparation with same quality of result would be meaningful.

eP079 RECURRENCE AFTER ILEOCOLIC RESECTION IN CROHN'S DISEASE: THE PERFORMANCE OF RUTGEERTS SCORE

Authors Zaoua S.¹, Zakhama M.¹, Zine El Abidine F.¹, Guediche A.¹, Abdelwahed M.¹, Baklouti R.¹, Bouhlel W.¹, Ben Chaabane N.¹, Safer L.¹

Institute 1 Fattouma Bourguiba Hospital, Gastroenterology, Monastir, Tunisia
DOI 10.1055/s-0042-1744932

Aims The aim of this study was to evaluate the performance of Rutgeerts score for predicting disease recurrence and treatment adjustment in CD patients.

Methods We conducted a retrospective and analytical study including all patients with Crohn's disease who underwent ileocaecal resection. Colonoscopy was performed 6 to 24 months on post-surgery.

Results Our study included 42 patients (28 men and 14 women). The mean age of our patients was 43 years. Twelve patients were smokers (28%). The phenotype of CD was stricture in 59% of cases and penetrating in 38% of cases, with the presence of anoperineal manifestations in 7 cases (16%). The indication of surgery was urgent in 35% of cases. All patients were regularly followed and 31 patients (74%) were placed on postoperative medical treatment before colonoscopy. These included 5ASA in 4 patients, Azathioprine in 25, and Anti TNF α in 2 patients. Therapeutic abstention was decided in 11 patients (26%). The Rutgeerts score was <I2 in 13 patients (31%), and \geq I2 in 29 cases (69%).

Thirty one patients needed escalation of CD-related medications: Azathioprine indicated in 34% of our patients and Anti-TNF alpha was indicated in 66% of our patients. Clinical recurrence was significantly associated with endoscopic recurrence ($p = 0.0001$).

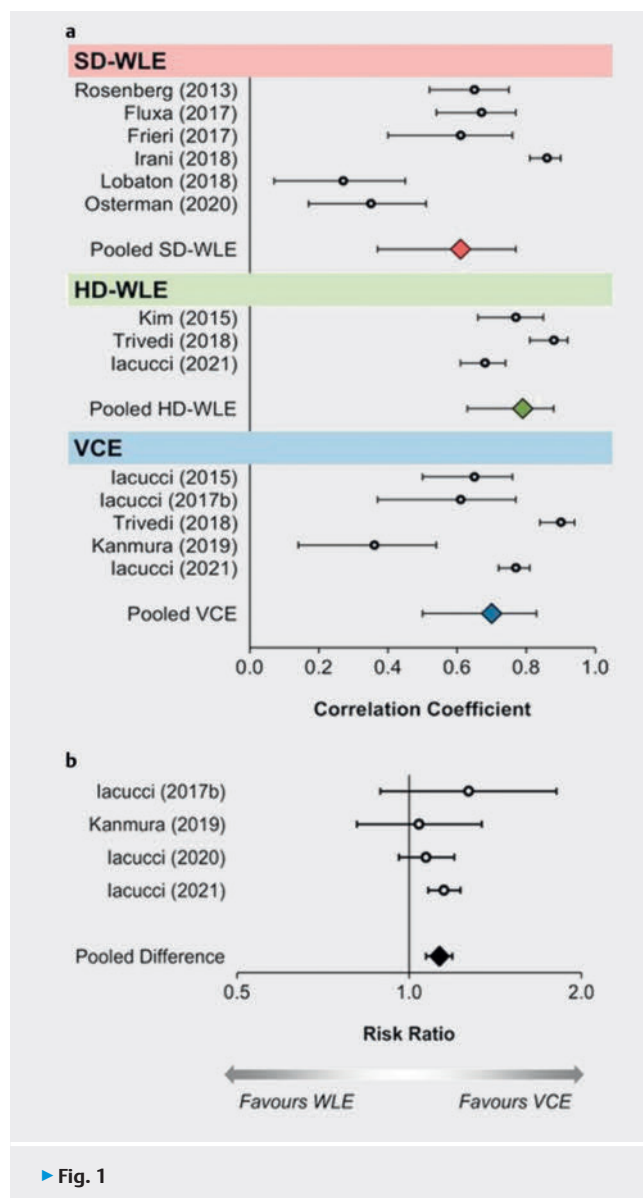
Conclusions Rutgeerts score is considered a useful decision-making tool for monitoring disease after ileocecal resection. It allows to avoid clinical recurrence and to prevent complications.

eP080 ADVANCED TECHNOLOGY FOR ASSESSMENT OF ENDOSCOPIC AND HISTOLOGICAL REMISSION IN ULCERATIVE COLITIS: A SYSTEMATIC REVIEW AND META-ANALYSIS

Authors [Nardone O.M.¹](#), [Snir Y.^{2,3}](#), [Hodson J.⁴](#), [Cannatelli R.¹](#), [Labarile N.¹](#), [Siau K.^{5,6}](#), [Hassan C.⁷](#), [Yanai H.^{2,3}](#), [Dotan I.^{2,3}](#), [Ghosh S.^{1,8,9,10}](#), [Iacucci M.^{1,8,9}](#)

Institutes 1 University of Birmingham, Institute of Immunology and Immunotherapy, Birmingham, United Kingdom; 2 Tel Aviv University, Sackler Faculty of Medicine, Tel Aviv, Israel; 3 Rabin Medical Center, Beilinson Campus, Division of Gastroenterology, Petach-Tikva, Israel; 4 University Hospitals Birmingham NHS Foundation Trust, Department of Health Informatics, Birmingham, United Kingdom; 5 Queen Elizabeth Hospital, UHBFT, Institute for Translational Medicine, Birmingham, United Kingdom; 6 Royal Cornwall Hospitals NHS Trust, Department of Gastroenterology, Truro, United Kingdom; 7 Nuovo Regina Margherita Hospital, Department of Gastroenterology, Rome, Italy; 8 University Hospitals Birmingham NHS Trust, NIHR Wellcome Trust Clinical Research Facilities, Birmingham, United Kingdom; 9 University of Birmingham and University Hospitals Birmingham NHS Foundation Trust, NIHR Biomedical Research Centre, Birmingham, United Kingdom; 10 University College Cork, APC Microbiome Ireland, College of Medicine and Health, Cork, United Kingdom
DOI 10.1055/s-0042-1744933

Aims Advanced endoscopic technologies led to significant progress in the definition of endoscopic remission of ulcerative colitis (UC), and correlate better with histological changes, compared to standard endoscopy. However, whilst studies have assessed the diagnostic accuracy of endoscope technologies individually, there is current limited data comparing between technologies. As such, the aim of this systematic review was to compare the correlations between endoscopy and histology disease activity scores across endoscope technologies



► Fig. 1

Methods We searched PubMed and Embase in January 2021 for eligible studies reporting the correlation between endoscopy and histology activity scores in UC. Studies were grouped by endoscope technology as standard-definition white light (SD-WLE), high-definition white light (HD-WLE), or electronic virtual chromoendoscopy (VCE), and comparisons made between these groups

Results A total of N = 27 studies were identified, of which N = 12 were included in a meta-analysis of correlations between endoscopic and histological activity scores. Combining these returned a pooled correlation coefficient (rho) for the SD-WLE group of 0.61, which did not differ significantly from HD-WLE (rho: 0.79, $p = 0.140$) or VCE (rho: 0.70, $p = 0.471$). In addition, N = 4 studies reported the accuracy of endoscopic activity scores on WLE and VCE to diagnose histological remission. Pooling these found significantly higher accuracy for VCE, compared to WLE (risk ratio: 1.13, 95% CI: 1.07-1.19, $p < 0.001$)

Conclusions Activity scores assessed using endoscopy are strongly correlated with activity on histology. VCE appears to have better accuracy for the diagnosis of histological remission in UC, compared to WLE.

eP081 POST-COLONOSCOPY COLORECTAL CANCER: INCIDENCE, CHARACTERISTICS AND PREDICTIVE FACTORS

Authors Baile-Maxía S.¹, Mangas-Sanjuan C.², Alustiza M.², Medina-Prado L.², Murcia O.², Traversi N.², Zapater P.³, De Vera F.⁴, García G.⁵, Picó M.D.⁶, Belda G.⁷, García-Herola A.⁸, Poveda M.J.⁹, Penalva J.C.¹, Jover R.²

Institutes 1 Gastroenterology department, Hospital Universitario del Vinalopó, Alicante, Spain; 2 Gastroenterology department, Hospital General Universitario de Alicante, Instituto de Investigación Sanitaria y Biomédica de Alicante (ISABIAL), Alicante, Spain; 3 Clinical Pharmacy department, Hospital General Universitario de Alicante, Alicante, Spain; 4 Gastroenterology department, Hospital General Universitario de Elda, Alicante, Spain; 5 Gastroenterology department, Hospital Universitario de San Juan de Alicante, Alicante, Spain; 6 Gastroenterology department, Hospital General Universitario de Elche, Alicante, Spain; 7 Gastroenterology department, Hospital Universitario Vega Baja, Alicante, Spain; 8 Gastroenterology department, Hospital Universitario Marina Baixa, Alicante, Spain; 9 Gastroenterology department, Hospital Virgen de los Lirios, Alicante, Spain
DOI 10.1055/s-0042-1744934

Aims Post-colonoscopy CRC (PCCRC) has become an important quality indicator. Our aim was to determine its rate, characteristics, and associated factors.
Methods Multicenter, observational, retrospective study between 2015 and 2018 in 8 centers in the region of Alicante. We considered as PCCRC those developing up to 10 years after colonoscopy. The causes of PCCRC were categorized according to the World Endoscopy Organization (WEO) algorithm.

Results PCCRC was detected in 107 patients (mean age 72 years, 66 % male), out of 101,524 colonoscopies (0.11 %) and 2,508 CRC (4.27 %), which resulted in a 1-year PC-CRC rate of 1.25 %, 3-year rate 2.79 %, 5-year rate 3.24 %, 10-year rate of 4.01 %. The PCCRCs were in right (42.4 %), left (41.4 %) and transverse (16.4 %) colon with a mean size of 36mm, with 31.5 % with stage I, 24.7 % stage II, 32.6 % stage III, 11.2 % stage IV. According to WEO, 22.8 % of PCCRCs were classified as incomplete resection, 7.9 % as unresected detected lesions, 44.6 % as missed lesions with adequate colonoscopy, and 24.8 % as missed lesions with inadequate colonoscopy. Mean time between PCCRC diagnosis and previous colonoscopy was 42 months. Inadequate colonic cleansing and previous fragmented polypectomy were associated with the occurrence of PCCRC in the multivariate analysis ($p < 0.005$).

Conclusions In our population, 4.27 % of the diagnosed CRCs were PCCRC and, therefore, potentially preventable. Most of these lesions were in advanced stages and almost half were attributable to lesions not visualized despite adequate colonic cleansing. Inadequate colonic cleansing and previous fragmented polypectomy were independently associated with the occurrence of PCCRC.

eP082 COLONIC ENDOSCOPIC SUBMUCOSAL DISSECTION USING A NOVEL ROBOTIC SYSTEM

Authors Kim S.¹, Keum B.¹, Choi H.S.¹, Kim E.S.¹, Jeon Y.T.¹, Chun H.J.¹, Lee J.M.¹, Lee H.S.¹

Institute 1 Korea University College of Medicine, Department of Internal Medicine, Seoul, Korea, Republic of
DOI 10.1055/s-0042-1744935

Aims Appropriate tissue tension and clear visibility of the dissection area using traction are essential for effective and safe endoscopic submucosal dissection (ESD). We developed a robotic assistive traction device for colonoscopy. This is a preclinical animal study to evaluate the performance of colorectal ESD using novel robotic system.

Methods Experienced endoscopist performed ESD on ex vivo porcine colon ten times using a robot and ten times by the conventional method. The outcome measures were operating time (from starting incision to finishing dissection), completeness of resection, procedure-related adverse events, and limitations of arm manipulation in a narrow working space as assessed by counting

the frequency of blind cutting. We also conducted an in vivo feasibility study on live pig.

Results Total of twenty colonic lesions were resected from ex vivo porcine colon. The submucosal dissection speed was significantly faster in robotic ESD than in conventional ESD ($P = 0.002$). Adverse events such as perforation were also significantly higher in the conventional group. In the in vivo feasibility study, robot was attached to the colonoscope and inserted into the proximal colon. ESD was performed successfully.

Conclusions When the robot was assisting in the ESD procedure, the dissection speed improved significantly. Our robotic device can thus provide simple, effective, and safe multidirectional traction during colonic ESD.

eP083 EVALUATION OF ULCERATIVE COLITIS ENDOSCOPIC MAYO SCORE WITH ARTIFICIAL INTELLIGENCE

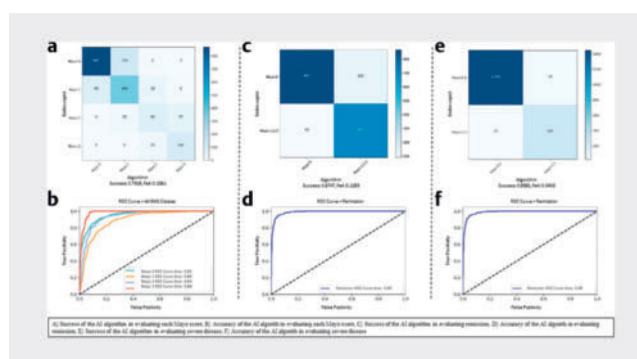
Authors Kani H.T.¹, Ergenc I.¹, Polat G.², Ozen Alahdab Y.¹, Temizel A.², Atug O.¹

Institutes 1 Marmara University, School of Medicine, Department of Gastroenterology, Istanbul, Turkey; 2 Middle East Technical University, Institute of Informatics, Ankara, Turkey
DOI 10.1055/s-0042-1744936

Aims Multilayer artificial neural networks are artificial intelligence (AI) algorithms with high predictive power that allow processing large volumes of data sets. Ulcerative colitis (UC) Endoscopic Mayo Score (EMS) is a subjective assessment that varies between the endoscopists (1, 2). Our aim was to develop an AI algorithm to evaluate endoscopist-independent EMS with high accuracy and minimize the subjectivity.

Methods We enrolled the images of UC patients who were evaluated with colonoscopy between December 2011 and July 2019. EMS evaluation was performed individually and blindly for each image by three different experienced gastroenterologists. Artificial intelligence algorithm developed in Python programming language and by using the PyTorch library. Seventy percent of the data set was defined as training set, 15 % as the validation set, and 15 % as test set. Artificial intelligence was trained by ResNet152 model.

Results A total of 19537 images were evaluated. Images with artifact, terminal ileum and ileo-anal pouch images were excluded. A total of 11276 images were included to the data set [EMS 0: 6105 (54.1 %), EMS 1: 3052 (27.1 %), EMS 2: 1254 (9.9 %) and EMS 3: 865 (7.7 %)]. Success rate was 79.2 % for differentiation of each EMS classes (Mayo 0,1,2,3) (specificity: 0.92; sensitivity: 0.73; AUC: 0.94). Success rate was 87.25 % for the evaluation of remission (Mayo 0 vs Mayo 1,2,3) and success rate was 95.9 % for the differentiation of severe disease (Mayo-0.1 vs Mayo-2,3) (Fig.1).



► Fig. 1

Conclusions Our artificial intelligence algorithm developed with the ResNet152 model evaluated the EMS with a very high accuracy and 100 % consistency from endoscopic images.

eP084V HPV16 INDUCED LARGE VENTRAL AIN3 IN A 29 YEAR OLD YOUNG LADY. SUCCESSFUL REMOVAL BY ESD

Author Hochberger J.¹

Institute 1 Vivantes Klinikum im Friedrichshain, Gastroenterology, Berlin, Germany

DOI 10.1055/s-0042-1744937

A 29 year old young woman was referred because of a AIN grade 3 (intramucosal carcinoma) reaching from the anus 10 cm into the ventral rectum in projection of the dorsal wall of the vagina. Interdisciplinary tumor board discussion favored an attempt of ESD as alternative to radio-chemo therapy. Surgery was discouraged because of a high risk of a definitive terminal colostoma and risk of injury of the vagina. Meticulous preparation of the lesion resulted in successful removal (AIN3;R0). Follow-up after 1 year is shown.

eP085 PREDICTIVE FACTORS FOR THERAPEUTIC ENDOSCOPIC RETROGRADE CHOLANGIOPANCREATOGRAPHY-RELATED COMPLICATIONS IN THE TREATMENT OF CHOLEDOCHOLITHIASIS

Authors Addajou T.¹, Rokhsi S.¹, Mrabti S.¹, Benhamdane A.¹, Touibi A.¹, Guelleh M.O.¹, Sair A.¹, Berrida R.¹, Elkoti I.¹, Rouibaa F.¹, Benkirane A.¹, Seddik H.¹

Institute 1 Military Hospital Mohammed V, Rabat, Morocco

DOI 10.1055/s-0042-1744938

Aims Endoscopic retrograde cholangiopancreatography (ERCP) is now the exclusive endoscopic therapeutic modality for biliary as well as pancreatic diseases.

The aim of our study is to evaluate the complication rate of ERCP in the treatment of choledocholithiasis and to assess the factors related to their occurrence.

Methods This is a retrospective descriptive and analytical study including 1048 patients who underwent ERCP for choledocholithiasis between January 2007 and August 2021.

The factors associated with the occurrence of post-ERCP complications were studied by logistic regression analysis.

Results Among the patients studied, 60.5 % had a solitary stone, 27.6 % had multiple choledochal stones and 11.9 % had large stones (> 15mm).

Clinically, 18.7 % of the patients presented with cholangitis and 9.4 % with acute pancreatitis.

A periampullary diverticulum was found in 9.4 % of cases.

A common bile duct stenosis was present in 6.5 % of patients.

The primary vacuity rate after ERCP was 77.3 %. However, additional maneuvers were used in 20.5 % of cases.

Complications were reported in 5.8 % of cases, including haemorrhage in 4.5 %, pancreatitis in 0.8 %, cholangitis in 0.2 %, perforation in 0.1 % and dormia impaction in 0.2 %. No deaths was reported due to our procedures.

In a multivariate analysis following adjustment of confounding factors, only the presence of a large stone (OR = 5.9, CI (1.460- 23.875), p = 0.013) and female gender (OR = 1.867, CI (1.012-3.444), p = 0.046) increased the risk of complications during ERCP.

Conclusions Our study suggests that female gender and the presence of a large gallstone are associated with a high risk of post-ERCP complications.

eP086 THE CONTRIBUTION OF ENDOSCOPIC ULTRASONOGRAPHY IN BILIARY DUCT DILATATION WITHOUT VISIBLE IMAGING OBSTRUCTION

Authors Addajou T.¹, Mrabti S.¹, Rokhsi S.¹, Benhamdane A.¹, Sair A.¹, Touibi A.¹, Guelleh M.O.¹, Berrida R.¹, Elkoti I.¹, Rouibaa F.¹, Benkirane A.¹, Seddik H.¹

Institute 1 Military Hospital Mohammed V, Rabat, Morocco

DOI 10.1055/s-0042-1744939

Aims Endoscopic ultrasonography (EUS) is an effective and primordial procedure for exploring the biliopancreatic junction abnormalities. However, its results depend of the operator expertise, and its availability is currently insufficient in our regions.

The aim of this study is to determine the role of endoscopic ultrasonography in assessment of etiological diagnosis of bile ducts dilatation when conventional imaging is inconclusive.

Methods This is a retrospective descriptive study conducted from January 2008 to May 2021, including 51 patients with intra-and/or extra-hepatic bile duct dilatation without visible obstacle on imaging. TODANI classification was considered for common bile duct (CBD) cystic dilatations.

Results We enrolled 51 patients responding to inclusion criteria, which represented 11 % of all indications of EUS. The mean age of our patients was 60 ± 12, 10 years, with a female predominance.

EUS showed a dilated CBD in 56,9 % of cases with a double duct sign in 5,9 % of cases. The main diagnoses revealed were a cystic dilatation of CBD in 43,1 %, predominated by type Ia and Ib in 38,1 % and 4 % respectively, a choledocholithiasis in 5,9 % of the cases, an ampulloma in 3,9 % of cases, and papillomatosis of the bile ducts in 2 % of cases. The pancreatic head cancer was suspected during echo-endoscopy and then confirmed histologically in 2 % of patients. However, echo-endoscopy allowed us to exclude biliary ducts dilatation in 43,1 % of our patients.

Conclusions Our study confirms the prominent place of EUS in etiological profile of bile ducts dilatations when imaging is inconclusive.

eP087 GASTROINTESTINAL MANIFESTATIONS IN COVID-19: A PROSPECTIVE STUDY

Authors Addajou T.¹, Rokhsi S.¹, Mrabti S.¹, Benhamdane A.¹, Guelleh M.O.¹, Touibi A.¹, Sair A.¹, Berrida R.¹, Elkoti I.¹, Rouibaa F.¹, Benkirane A.¹, Seddik H.¹

Institute 1 Military Hospital Mohammed V, Rabat, Morocco

DOI 10.1055/s-0042-1744940

Aims Gastrointestinal manifestations are common during coronavirus disease (COVID-19) infection. They can occur before respiratory symptoms, resulting in a diagnostic delay and an increased risk of disease transmission. The current study reports major gastrointestinal manifestations as initial symptoms of COVID-19.

Methods This prospective, descriptive, cross-sectional, and single-center study of 713 cases was conducted in a field hospital over a 5-week period from June 21 to July 25, 2020.

Results The average age of our patients was 31.95 years. Clinically, on admission, anorexia was the main symptom, present in 32.3 % of patients. Gastrointestinal manifestations were present in 14.9 % of patients, including watery diarrhea in 8.6 % of cases, nausea and/or vomiting in 4.6 % of cases, and abdominal pain in 1.6 % of cases.

Six hundred thirty-two patients were treated in accordance with one of the two therapeutic protocols recommended by the National Ministry of Health. The treatment-related effects that occurred in 61.4 % of patients were primarily digestive in 55.3 % of cases.

In multivariate analysis, following adjustment of the studied parameters, only the presence of gastrointestinal manifestations (OR: 1.478 confidence 95 % CI:

1.286–1.698; $p < 0.001$) and treatment side effects (OR = 1.069, CI: 1.020–1.119, $p = 0.005$) altered the rate of negative polymerase chain reaction (PCR) tests on day 10.

Conclusions Gastrointestinal manifestations are common during COVID-19 and seem to be linked to a longer duration of disease. SARS-CoV-2 can persist in the digestive tract, with the possibility of fecal–oral transmission. Therefore, strict precautions when performing gastrointestinal endoscopy and handling stools from infected patients.

eP088 QUALITY INDICATORS FOR COLONOSCOPY IN EGYPT: A PROSPECTIVE MULTICENTER STUDY

Authors Afify S.¹, Tag-Adeen M.², Abu-Elfath A.³, Eid A.⁴, Nageh A.⁵, Alzamzamy A.⁶, El-Raey F.⁷, Basiony A.⁸, Abdelghani M.³, Abdeltawab D.³, Ahmed R.M.⁹, Nasr H.⁹, Alkady M.N.¹⁰, Ibrahim W.¹¹, Elshaarawy O.¹², Amer H.¹³, Thoufeeq M.¹⁴, Alborae M.¹⁵

Institutes 1 National Hepatology and Tropical Medicine Research Institute, Gastroenterology, Cairo, Egypt; 2 Qena Faculty of Medicine, Department of Internal Medicine, Qena, Egypt; 3 Assiut University, Tropical Medicine and Gastroenterology, Assiut, Egypt; 4 Al-Azhar University, Hepatogastroenterology and Infectious disease, Cairo, Egypt; 5 Alexandria Hepatology, GIT and Fever Hospital, Gastroenterology and Endoscopy, Alexandria, Egypt; 6 Maadi Armed Forces Medical Complex, Gastroenterology and Hepatology, Cairo, Egypt; 7 Al-Azhar University, Hepatogastroenterology and Infectious diseases, Damiatta, Egypt; 8 Ain Shams University, Tropical Medicine, Cairo, Egypt; 9 Assiut University, Internal Medicine, Assiut, Egypt; 10 Kasr Alaini Faculty of Medicine, Cairo University, Internal Medicine, Cairo, Egypt; 11 Nasser Institute for Research and Treatment, Gastroenterology and Hepatology, Cairo, Egypt; 12 National Liver Institute, Menoufia University, Hepatology and Gastroenterology, Menoufia, Egypt; 13 Suad Kafafy University Hospital, General Medicine, Giza, Egypt; 14 Sheffield Teaching Hospitals, Endoscopy, Sheffield, United Kingdom; 15 Al-Azhar University, Internal Medicine, Cairo, Egypt

DOI 10.1055/s-0042-1744941

Aims Colonoscopy is the gold standard colorectal cancer screening method. Despite widely available in Egypt, no sufficient data about quality performance exists. We studied 13 quality indicators in 8 centres aiming to attain a representative image about quality of colonoscopy in Egypt.

Methods This is a Multicenter prospective study done between July–December 2020. The studied indicators included; indications, pre-procedure assessment, informed consent, colon preparation, sedation, caecal intubation rate (CIR), withdrawal time, adenoma detection rate (ADR), complication rate, photographic documentation, automated sterilization, infection control check and equipped recovery room.

Results A total of 1006 colonoscopies were performed along the study duration in the included centers. Four indicators were fulfilled in all centers including; appropriate indications, pre-procedure assessment, informed consent and automated sterilization. However, photographic documentation and equipped recovery room were fulfilled only in 57 %. Adequate colon preparation was achieved in 61 % of procedures, 81 % of procedures were performed under sedation, CIR was achieved in 95.4 % and ADR reached 15 %. Mean withdrawal time was 11 minutes and overall complications rate was 0.1 %. Statistically significant factors affecting CIR were age > 40 years, high definition endoscope, previous colon intervention and rectal bleeding while those affecting ADR were age > 40, image enhancement, previous colon intervention, rectal bleeding, use of water pump, and withdrawal time > 9 minutes.

Conclusions Our study revealed the quality aspects of colonoscopy practice in Egypt. Colonoscopies achieved high CIR and low complication rate and ADR that met the international standards while the quality of bowel cleansing and infection control measures should be improved.

eP089 COLORECTAL CANCER DIAGNOSTIC CIRCUIT PERFORMANCE AND ITS IMPACT BY THE COVID19 PANDEMIC AT THE GIRONA REFERRAL HOSPITAL

Authors Albert M.¹, Guarner E.¹, Espin G.¹, Hombrados M.¹, Busquets D.¹, Pardo L.¹, Torrealba L.¹, Oliveras B.¹, Huertas C.¹, Lopez C.¹

Institute 1 Hospital Universitari de Girona Doctor Josep Trueta, Gastroenterology, Girona, Spain

DOI 10.1055/s-0042-1744942

Aims Colorectal Cancer (CRC) Diagnostic Circuit (CDR) is designed to provide comprehensive care for suspected CRC. The suspension of endoscopic and healthcare activity due to COVID-19 could have affected the CDR performance. Analyze the CDR performance in detecting CRC or clinically relevant lesions (CRL) and assess the impact of activity limitations due to covid-19.

Methods Comparative analysis of CDR referrals to our center from January-2019 to May-2021, made before 03/13/2020 (Pre-pandemic) Vs. after (Post-pandemic onset). Clinical data (age, sex, history, symptoms), laboratory data (FOBT, Hb), endoscopic diagnosis, morbidity and mortality are collected. Endoscopic findings are classified into clinically relevant (CRL) or non-relevant (CNRL) lesions based on the SEED-AEG document.

Use of t-student test for statistical analysis.

Results:

► Table 1

	TOTAL	Before PANDEMIC	After PANDEMIC start
CDR n(%)	417	246 (58.99)	171 (41.01)
Timing CDR-Colonoscopy (days)	22.42 ± 15.64	28.8 ± 18.79	17.59 ± 10.49
CRL: CRC n(%)	40 (16.06)	19 (16.81)	21 (15.44)
Mortality n(%)	38 (9.11)	29 (11.79)	9 (5.26)

Conclusions Prioritization after restarting endoscopic activity allowed a shorter delay in performing CDR colonoscopies in our center (28.8 vs 17.6 days), this difference being statistically significant. The proportion of CRC diagnosed in CDR was similar in both periods.

eP090 IMPACT OF A LOW-RESIDUE DIET (LRD) ON BOWEL CLEANSING QUALITY (BCQ) BEFORE COLONOSCOPY: A PROSPECTIVE SINGLE BLINDED RANDOMIZED CONTROLLED TRIAL

Authors Amalou K.¹, Rekab R.¹, Belloula A.¹, Aïtmohammed T.¹, Hacini N.¹, Benzemrane N.¹, Ghediri M.¹, Guelmami S.¹, Bouhouche N.¹, Fadel S.¹, Kecili N.¹, Kordjani S.¹, Medkour M.T.¹, Kezoula D.¹, Belghanem F.¹, Bella B.¹, Chetroub H.¹, Lalili S.¹

Institute 1 Algiers, Gastroenterology, Central Army Hospital, Algiers, Algeria

DOI 10.1055/s-0042-1744943

Aims The optimal LRD duration is still controversial. We have compared the effect of different LRD regimens in a Mediterranean diet population on the quality of bowel preparation and patient tolerance.

Methods Consecutive patients scheduled for outpatient colonoscopy were randomized to the 1-day, 3-days, 5-days or without LRD (control group) groups. All patients received PEG-ES for bowel preparation (BP). The primary outcome was BCQ as evaluated using the Boston Bowel Preparation Scale (BBPS). Secondary outcomes were polyp/adenoma detection, rate adherence to and level

of satisfaction with the LRD, difficulty following the dietary recommendations, and willingness to repeat the same LRD in the future.

Results 400 patients (100 per group) were included. There was a significant difference in BP quality between 3-daysLRD and 5-daysLRD vs 1-dayLRD and control group. The 5-daysLRD group had a BBPS of 7.38 ± 1.43 points, 3-daysLRD; 6.87 ± 1.81 , while the 1-dayLRD group had a score of 5.12 ± 1.36 , control group; 5.08 ± 1.26 ($P < 0.001$). There was no significant difference between 3-days vs 5-daysLRD or 1-dayLRD vs control group.

The groups reported similar polyp/adenoma detection rates and patient tolerance scores. The numbers of patients who reported that compliance as easy were 83 (83 %) in the 3-days group vs 58 (58 %) in the 5 days group ($p < 0.05$) and the numbers who were willing to use the diet again were 91 (91 %) vs 61 (61 %); ($p < 0.05$).

Conclusions 5-daysLRD did not offer advantages over 3-daysLRD in preparation for colonoscopy. Patients in the 3-day group had higher tolerance and satisfaction levels than patients in the 5-dayLRD group. However, BP quality was higher with the 3-days group than with the 1-dayLRD or control group

eP091 SINGLE-USE DUODENOSCOPES IN COMPLEX PROCEDURES

Authors Valerii G.¹, Longo S.², Nunziata R.³, Cellini C.¹, Barbera C.¹

Institutes 1 G. Mazzini Hospital, Gastroenterology Unit, Teramo, Italy;

2 University of L'Aquila, Gastroenterology Unit, L'Aquila, Italy; 3 San Giovanni di Dio e Ruggi D'Aragona University Hospital, Gastroenterology Unit, Salerno, Italy

DOI 10.1055/s-0042-1744944

Aims The duodenoscope is a complex instrument with unique mechanical features incorporated at the distal tip that creates hard-to-reach areas that make optimal mechanical cleaning and disinfection difficult.

Persistent bacterial growth in duodenoscopes allows the development of biofilm considered to be an important impediment to the effective cleaning and disinfection of scopes. A single-use duodenoscope should reduce or eliminate transmission of infection from the endoscopic instrument, but if the functionality is suboptimal, it may simply create a trade-off to reduce one complication while increasing others. We investigate the feasibility, safety and performance of disposable duodenoscope during complex procedures such as cholangioscopy with biliary tract biopsies to evaluate indeterminate strictures and to manage of difficult biliary stones.

Methods We performed, from June 2020 through October 2021, cholangiopancreatography with single-use duodenoscope (EXALT Model D Boston Scientific Corporation, Marlborough, Massachusetts, USA) in patients with symptomatic pancreatic-biliary disorders and multidrug-resistant infections by carbapenem-resistant *Klebsiella* and *Pseudomonas aeruginosa*

Results Ten cholangiopancreatography were completed with single-use duodenoscope in multidrug-resistant infections by carbapenem-resistant pathogens. The indications of procedure are: 7 indeterminate biliary obstructions, 3 common bile duct difficult stones. We performed 3 complete common bile duct stone clearance, 7 optimal self-expandable metal stents. In 7 patients we achieved a definitive histological diagnosis of malignancy through single operator cholangioscopy. Serious adverse events did not occur.

Conclusions All procedures were successfully performed by single single-use duodenoscopes without serious adverse events. We achieved the goal with definitive diagnosis, clearance of indeterminate biliary obstructions and bile duct stone. Further data are required

eP092 COVID SCREENING IN THE ENDOSCOPY UNIT OF ELCHE UNIVERSITY HOSPITAL (SPAIN)

Authors Barragán Martínez J.¹, Ojeda Gómez A.¹, Brotons Brotons A.¹, Íñigo Chaves A.M.¹, Uceda Porta F.E.¹, Gutiérrez Alonso M.¹, Cañizares Molina V.¹, Vílchez Vílchez M.¹, Esteve Martínez M.D.¹, Boix Macia M.¹, Aniorte Blasco R.¹, García Soria A.¹, Sáez Fuster J.¹, García Sepulcre M.F.¹, Sola-Vera Sánchez F.J.¹

Institute 1 Elche University Hospital, Elche, Spain

DOI 10.1055/s-0042-1744945

Aims Due to COVID-19 pandemic, the Endoscopy Unit of Elche University Hospital decided to do clinical, epidemiological and microbiological screening prior to any endoscopic procedure, in addition to the use personal protective equipment. The aim of this study is to assess the impact of these actions on COVID-19 transmission among the patients and the staff; and also to identify when microbiological screening is not necessary.

Methods A clinical-epidemiological questionnaire as well as a PCR test were performed to all patients undergoing an endoscopic procedure from January 2021 to March 2021.

Results The total number of patients who underwent an endoscopic procedure during this period was 542. 2.7 % of them had a pre-endoscopy PCR positive result and only 20 % of these infected patients were symptomatic. Of the non-infected patients, 3.5 % had symptoms. The highest positivity rates occurred during the second week of January 2021 and the third week of February 2021, when the cumulative incidence (CI) was respectively 458 and 648 cases per 100000 inhabitants. However, when the CI was higher (from third week of January 2021 to second week of February 2021) the positivity rates were the lowest (just one case). None of the Endoscopy Unit staff were infected at work.

Conclusions The actions taken were effective in preventing infection and outbreaks in the Endoscopy Unit. However, the data obtained did not allow us to use only the clinical-epidemiological questionnaire as screening. The PCR test continued to be used regardless of the presence of symptoms or the CI at endoscopy time.

eP093 LOW POWER FORCED COAGULATION OF LARGER VESSELS WITH ESD KNIFE REDUCES HEMOSTATIC FORCEPS USE DURING ENDOSCOPIC SUBMUCOSAL DISSECTION (ESD) AND PERORAL ENDOSCOPIC MYOTOMY (POEM)

Authors Baršić N.¹, Budimir I.¹, Hrabar D.¹

Institute 1 University of Zagreb School of medicine, Department of Gastroenterology, Sestre Milosrdnice University Hospital, Zagreb, Croatia

DOI 10.1055/s-0042-1744946

Aims Precoagulation of larger vessels is important in preventing bleeding and reducing operative time of third-space endoscopy procedures. Coagulation forceps is traditionally used for that purpose, requiring repeated device exchange. Precoagulation method using low power forced coagulation with ESD knife has been described by Japanese authors. Our study evaluated efficacy of 1-10 forced precoagulation during ESD and POEM procedures and its influence on coagulation forceps use.

Methods We prospectively included 28 consecutive patients that underwent ESD or POEM in our institution. Large vessels that normally require precoagulation with hemostatic forceps were selected for 1-10 knife precoagulation, except for very large vessels where this technique seemed unfeasible. Vessel was hooked from both directions with opened ESD knife (DualKnife, Olympus, Japan) and coagulated using forced coagulation effect 1, 10W on VIO200D electrosurgical unit (ERBE Elektromedizin, Germany). Successful vessel coagulation and cutting was recorded, as well as failures requiring a switch to coagulation forceps.

Results 17 patients undergoing ESD and 11 patients undergoing POEM were included, with 61 vessels attempted for 1-10 knife precoagulation. Success rate of 1-10 knife precoagulation was 92 % (56/61). Only 5/61 vessels required a

switch to coagulation forceps, due to bleeding. There was no difference in efficacy regarding procedure type (ESD vs. POEM, 91 % vs 93 %, $p = 1$). Use of 1-10 knife precoagulation obliterated the need for coagulating forceps use completely in 11/28 patients (39 %, 6/17 in ESD and 5/11 in POEM group).

Conclusions Vessel precoagulation with knife using 1-10 forced coagulation method is effective in reducing operational time and costs during ESD/POEM.

eP094 SYSTEMATIC TRACEABILITY MONITORING IN DIGESTIVE ENDOSCOPY : A QUALITY STANDARD ?

Authors Belkhir S.¹, Gerard M.², Ambrocio W.¹, Eisendrath P.¹

Institutes 1 Saint-Pierre University Hospital, Université Libre de Bruxelles, Hepato-gastro enterologie, Brussels, Belgium; 2 Saint-Pierre University Hospital, Université Libre de Bruxelles, Infection Prevention and control team, Brussels, Belgium

DOI 10.1055/s-0042-1744947

Aims Traceability of reprocessing process in digestive endoscopy is essential to ensure retrospective investigation in case of contamination accident. Regular evaluation of facilities, including disinfection procedures, is recommended by ESGE in their Quality improvement initiative program. Therefore, traceability adequacy should be considered as a quality indicator. We report here the development of an automated traceability monitoring system, based on an electronic documentation system.

Methods An automated electronic system records the scope's passage at each stage: endoscopic procedure, reprocessing (washer disinfectant) and storage in the drying cabinet. Human intervention may be required to complete recording procedures in case of failure of the automatic recognition. Human or electronic mistakes may lead to missing data in the traceability process.

We created a query in the database to assess the number of endoscopic procedures for which the serial number of the scope is missing. The data is available daily with retrospective study period of 180 days.

Results About 7000 endoscopic procedures are performed at Saint Pierre Hospital each year. We analysed data for period ended on December 6 2021; 3215 procedures were recorded among which 1,64 % (53) had no recorded scopes.

Conclusions This is to our knowledge the first initiative to assess adequacy of traceability using an automated monitoring in digestive endoscopy. Coupled with automatic warning, this may help to correct inefficient traceability and avoid issues in case of contamination accident.

The implementation of systematic traceability monitoring could become one of the quality standards. Adequate and reasonable targets for traceability should be proposed based on similar initiatives.

eP095 HOW TO PREVENT MUSCLES INJURIES IN ENDOSCOPISTES ?

Authors Ben Farhat F.¹, Ghanem M.¹, Bizid S.¹, Ben Abdallah H.¹, Bouali R.¹, Abdelli N.¹

Institute 1 Military Hospital of Tunis, Gastroenterology, Tunis, Tunisia

DOI 10.1055/s-0042-1744948

Aims We aim to identify the risk factors associated with the different locations of muscle pain and how to prevent them.

Methods A questionnaire including the following elements was sent to endoscopists of all ages: sex, age, weight, height, number of years of endoscopy, number of colonoscopies and fibroscopies per week, use of an optical endoscope, realization of interventional gestures, practice of a sports activity, presence of muscle pain as well as its location, the diagnosis chosen and the different therapeutic and ergonomic strategies.

Results One hundred and twelve endoscopists responded to the questionnaire. The mean age was 40.7 years [27-69]. The average number of years in practice was between 10 and 15 years. Muscle pain was noted in 85 % of gastroenterologists. The most frequent locations were the back (74 %), followed by the neck

(55 %) and shoulder (49 %). Neck pains were associated with female gender ($p = 0.05$). Back pains were associated with years of practice > 10 ($p = 0.05$), number of colonoscopies greater than 5 ($p = 0.03$) and the use of optical endoscope ($p = 0.04$). Shoulder pains were associated with years of practice > 10 ($p = 0.01$), number of colonoscopies greater than 5 ($p = 0.01$), number of upper endoscopy > 15 ($p = 0.03$) and doing therapeutic endoscopy ($p = 0.03$). The factors associated with relief of pain at any location were muscle strengthening ($p = 0.02$) and adoption of ergonomic strategies ($p < 0.001$): adjusting monitor location and distance ($p = 0.03$), adjusting bed height ($p = 0.02$) and break time between procedures ($p = 0.04$).

Conclusions Ergonomic design in the workplace is shown to be paramount in the prevention of muscles injuries in endoscopists.

eP096 IMPACT OF LOW FIBER DIET ON BOWEL PREPARATION FOR COLONOSCOPY

Authors Ben Farhat F.¹, Ghanem M.¹, Bizid S.¹, Ben Abdallah H.¹, Bouali R.¹, Abdelli N.¹

Institute 1 Military Hospital of Tunis, Gastroenterology, Tunis, Tunisia

DOI 10.1055/s-0042-1744949

Aims The aim of our study was to study the effect of lower fiber diet on bowel preparation and to determine the required duration of the diet in Tunisian patients.

Methods We performed an analytic, observational, and prospective study. We included all outpatients scheduled for colonoscopy in our endoscopy unit between March and April 2021. Patients were educated to control diet from 5 days before colonoscopy with information regarding an unacceptable foods list. Boston scale was used for the assessment of bowel cleaning.

Results We enrolled 54 patients in our study. The mean age was 54 [18-72] and the sex Ratio (M/W) was 2.37. The most frequent indication for colonoscopy was recent transit disorders such as constipation and diarrhea in 35.18 % of cases. All participants received 4 L of polyethylene glycol or sodium picosulphate in a split-dose regimen. Of the 54 patients included, 30 patients (55.5 %) followed the diet instructions. Twenty five patients followed the low fiber diet for 5 days, 5 patients for 3 days and 24 for less than 3 days. The mean Boston score was 6/9. Inadequate bowel preparation was 42.6 %. The difference in mean Boston score between the 2 groups: Low Fiber diet respected for at least 3 days or not was significant ($p = 0.009$). Participants in both groups were similar in baseline characteristics.

Conclusions According to our study, in consideration of high impact but low compliance of diet restrictions, diet education should be emphasized more and we propose a diet of 3 days in Mediterranean regions.

eP097 RISK FACTORS PREDICTIVE OF POSITIVE FINDINGS AT COLONOSCOPY

Authors Benhamdane A.¹, Sair A.¹, Touibi A.¹, Addajou T.¹, Rokhs S.¹, Mrabti S.¹, Berraïda R.¹, El Koti I.¹, Rouibaa F.¹, Benkirane A.¹, Seddik H.¹

Institute 1 Military Hospital Mohamed V, Gastroenterology II, Rabat, Morocco

DOI 10.1055/s-0042-1744950

Aims The objective of our study is to evaluate the pertinence of indication of a pathological colonoscopy and its associated factors.

Methods A retrospective descriptive and analytical study was conducted during January 2018 to August 2021, including all patients who underwent colonoscopy. Patients with chronic inflammatory bowel disease (IBD) were excluded from our study.

Results The study included 1518 colonoscopies. Among them, 655 (44.6 %) were pathological.

The mean age was 57.6 \pm 14.98 years (12 to 92 years). The sex ratio (M/F) was 1.59.

The most common indications for pathological colonoscopy were: rectal bleeding in 31 % (n = 203), diarrhea in 22 % (n = 144), constipation in 21.8 % (n = 143), iron deficiency anemia in 15.3 % (n = 100) and melena in 3.4 % of cases (n = 22). The principal diagnoses found were: colorectal polyps in 55.6 % (n = 356), colitis in 19.7 % (n = 126), colorectal process in 13.4 % (n = 86), colic diverticulosis in 11.9 % (n = 76) and colic angiodysplasia in 9.7 % of cases (n = 62).

After multivariate analysis, age > 50 years (OR: 1.9, CI95 %: 1.4- 2.5, p < 0.001); male sex (OR: 1.7, CI95 %: 1.3-2.3, p < 0.001), a history of colorectal polyps (OR: 3.8, CI95 %: 2-7, p < 0.001), good preparation (OR: 1.4, CI95 %: 1- 1.9; p = 0.015), presence of iron deficiency anemia (OR: 0.7, CI95 %: 0.5-0.8; p = 0.007), constipation (OR: 0.7, CI95 %: 0.5-0.9; p = 0.037); and rectal bleeding (OR: 1.3, CI95 %: 1-1.8; p = 0.038) were significant associated factors with a pathological colonoscopy.

Conclusions In present study, rectal bleeding was the most common indication for colonoscopy. Factors associated with pathological colonoscopy were age, gender, good preparation, presence of rectal bleeding, constipation, and diarrhea.

eP098 LOW RISK OF HYPOKALEMIA IN ADULTS TREATED WITH 1 LITER POLYETHYLENE GLYCOL (PEG)-BASED BOWEL PREPARATION NER1006: POOLED ANALYSIS OF 2 RANDOMIZED PHASE 3 TRIALS

Authors Cash B.¹, Oneto C.², Allen C.³, Poppers D.⁴, Bisschops R.⁵

Institutes 1 University of Texas Health Science Center at Houston, Houston, United States; 2 Vanguard Gastroenterology, New York, United States; 3 Salix Pharmaceuticals, Bridgewater, United States; 4 NYU Langone Health, New York, United States; 5 University Hospitals Leuven, Department of Gastroenterology and Hepatology, Leuven, Belgium
DOI 10.1055/s-0042-1744951

Aims Data suggest a risk of hypokalemia in patients taking PEG-based bowel preparations. The current aim was to evaluate the incidence of hypokalemia in patients who received the 1L PEG-based bowel preparation NER1006 compared with other bowel preparations.

Methods A pooled post hoc analysis was conducted of two phase 3 trials of adults randomly assigned to receive NER1006 administered as an evening/morning (PM/AM) or morning/morning (AM/AM) split-dose regimen, oral sulfate solution (OSS), or 2L PEG plus ascorbate solution (2L PEG + ASC) (1,2). Serum potassium concentrations were assessed at screening, day of colonoscopy, and 7 days post-colonoscopy. Multiple logistic regression analysis was conducted to assess whether certain variables (e.g., patient demographics, bowel prep used, certain medication use) were risk factors for hypokalemia development.

Results Incidence of hypokalemia was low for all arms on both the day of colonoscopy (1.0 % [5/493] PM/AM; 0 % [0/243] AM/AM; 2.4 % [6/251] OSS; 2.9 % [7/242] 2L PEG + ASC) and 7 days post-colonoscopy (1.0 % [5/493] PM/AM; 0.8 % [2/243] AM/AM; 0.8 % [2/251] OSS, 0.4 % [1/242] 2L PEG + ASC). NER1006 was not found to be a risk factor for the development of hypokalemia on either the day of colonoscopy (regression coefficient [SE], -1.5 [0.62]; P = 0.02) or 7 days post-colonoscopy (0.68 [0.75]; P = 0.36).

Conclusions The incidence of hypokalemia after administration of NER1006 bowel preparation was low. Neither NER1006 nor other factors evaluated were found to be risk factors for the development of hypokalemia.

References:

1. Bisschops R, et al. *Endoscopy*. 2019;51(1):60-72.
2. DeMicco M, et al. *Gastrointest Endosc*. 2018;87(3):677-687.

eP099 1 LITER PEG + ASC BOWEL PREPARATION NER1006 IS AN INDEPENDENT PREDICTOR OF ADEQUATE AND HIGH-QUALITY CLEANSING SUCCESS: A POOLED ANALYSIS OF 2 RANDOMIZED PHASE 3 TRIALS

Authors Epstein M.¹, Shah E.², Allen C.³, Bisschops R.⁴

Institutes 1 Investigative Clinical Research, Annapolis, United States; 2 Dartmouth-Hitchcock Health, Lebanon, United States; 3 Salix Pharmaceuticals, Bridgewater, United States; 4 University Hospitals Leuven, Department of Gastroenterology and Hepatology, Leuven, Belgium
DOI 10.1055/s-0042-1744952

Aims Adequacy of bowel preparation for colonoscopy is critical for maximizing the therapeutic benefits of colonoscopy. High-quality cleansing has been shown to improve adenoma detection rates for individual patients. This analysis aimed to use optimized regression models to elucidate predictors of both adequate and high-quality colon cleansing success.

Methods A pooled post hoc analysis of two published phase 3 trials was conducted; included in the study were adults randomly assigned to receive the 1L polyethylene glycol (PEG)-based bowel prep NER1006, oral sulfate solution, or 2L PEG plus ascorbate solution, administered as an evening/morning split-dose regimen (1,2). The Boston Bowel Preparation Scale was used to define overall adequate colon cleansing success (total score ≥ 6, with a score ≥ 2 in each of 3 colonic segments) and overall high-quality colon cleansing success (total score 7-9, with a score of ≥ 2 for each segment). Multivariate logistic regression was performed, and odds ratios with 95 % confidence intervals were determined.

Results The overall population included 1018 patients (50.3 % male; NER1006 treatment, n = 510; comparator, n = 508). Four variables were significantly associated with the achievement of overall adequate cleansing success: age, time lapse, participation in the NOCT trial, and NER1006 use. Two variables were significantly associated with achievement of overall high-quality colon cleansing success: time lapse and NER1006 use (Table 1).

► **Table 1** Linear Regression and Odds Ratio Analysis to Identify Variables Impacting High-Quality Colon Cleansing Success *

	High-Quality Colon Cleansing		
Dependent Variable	Regression Coefficient (SE)	OR (95 % CI)	P-value
NER1006 use	0.28 (0.14)	1.32 (1.01, 1.73)	0.04
Time lapse, h	-0.09 (0.04)	0.92 (0.85, 0.99)	0.02

* Boston Bowel Preparation Scale total score ≥ 6, with score ≥ 2 in each of 3 colonic segments.
OR = odds ratio.

Conclusions NER1006 was the only independent, positive predictor of both adequate and high-quality colon cleansing success in patients undergoing colonoscopy.

References

1. Bisschops R, et al. *Endoscopy*. 2019;51(1):60-72.
2. DeMicco M, et al. *Gastrointest Endosc*. 2018;87(3):677-687.

eP100 BLEEDING RISK AFTER ENDOSONOGRAPHIC (EUS)- GUIDED PUNCTURE ACCORDING TO USE OF ANTITHROMBOTIC AND ANTICOAGULANT AGENTS

Authors Bota S.¹, Razpotnik M.¹, Kutilek M.², Urak C.¹, Essler G.¹, Weber-Eibel J.¹, Maieron A.², Peck-Radosavljevic M.¹

Institutes 1 Klinikum Klagenfurt am Wörthersee, Department of Internal Medicine and Gastroenterology (IMuG), Hepatology, Endocrinology, Rheumatology and Nephrology and Emergency Medicine (ZAE) with Centralized Endoscopy Service, Klagenfurt, Austria; 2 University Hospital St. Pölten, Internal Medicine 2, St. Pölten, Austria

DOI 10.1055/s-0042-1744953

Aims To compare the bleeding rate after EUS fine-needle aspiration (FNA) or biopsy (FNB) in different tumors according to the use of antithrombotic and anticoagulant agents.

Methods Our bicentric retrospective study included EUS-FNA/FNBs performed between 01/2016-10/2021 in Klagenfurt and 11/2018-04/2021 in St. Pölten. Minor bleeding was defined as an event with a duration of more than one minute, no need for intervention, a large coagulum on the puncture site, or a decrease in hemoglobin ≥ 1.5 g/dL (but less than < 2 g/dL). Major bleeding was defined as a reduction in hemoglobin level ≥ 2 g/dL, need of a transfusion, or interventional hemostasis.

According to newly updated ESGE guidelines, acetylsalicylic acid can be continued in the case of EUS-FNA/FNB, while clopidogrel should be discontinued seven days for procedure, warfarin five days, and DOACs three days before the intervention. Medication discontinued fewer days than recommended was classified as "ongoing".

Results 618 EUS-FNA/FNB were assessed (Klagenfurt – 423 and St. Pölten – 195). FNB was performed in 47.4 % of cases.

EUS-FNA/FNB was performed for the following indications: solid pancreatic masses – 53.1 %, pancreatic cysts – 21.1 %, subepithelial gastrointestinal tumors – 12.1 %, and other indications – 13.7 %.

Bleeding occurred in 41 cases (6.6 %) : 3 cases with major bleeding (0.5 %) – immediate endoscopic treated without hemodynamic instability, and 6.1 % minor bleedings.

The use of antithrombotic and anticoagulants was not associated with an increased bleeding risk regardless of the tumor type or use of FNB needles (Table 1)

► Table 1

	All patients with antithrombotic and anticoagulant medication (n = 161)	Ongoing medication (n = 105)	Discontinued medication (n = 56)	No medication (n = 457)
Overall bleeding rate	6.8 %	8.5 %	5.3 %	6.5 %
Solid pancreatic tumors	9.9 %	12.1 %	9.1 %	8.1 %
Pancreatic cysts	2.6 %	3.7 %	0 %	1.1 %
FNB needle	7.9 %	9.1 %	6.2 %	6.9 %

Conclusions The bleeding risk after EUS-FNA/FNB was similar in patients with or without antithrombotic and anticoagulant agents.

eP101 EVALUATION OF COLONOSCOPY SATISFACTION AND SAFETY INDICATORS WITH THE COLONOSCOPY SATISFACTION AND SAFETY QUESTIONNAIRE BASED ON PATIENT EXPERIENCE (CSSQP)

Authors Brotons A.¹, Mangas-Sanjuan C.², Ojeda A.¹, Cubiella J.³, Cid-Gómez L.⁴, Díez-Redondo P.⁵, Seoane A.⁶, García-Mateo S.⁷, Suárez A.⁸, Nicolás-Pérez D.⁹, Lumbreras B.¹⁰, Mira J.J.¹¹, Sola-Vera J.¹, Jover R.²

Institutes 1 Hospital General Universitario de Elche, Department of Gastroenterology, Elche, Spain; 2 Hospital General Universitario de Alicante, Instituto de Investigación Sanitaria y Biomédica de Alicante (ISABIAL), Universidad Miguel Hernández, Department of Gastroenterology, Alicante, Spain; 3 Complejo Hospitalario de Ourense, Instituto de Investigación Sanitaria Galicia Sur, Centro de Investigación Biomédica en Red de Enfermedades Hepáticas y Digestivas (CIBERehd), Department of Gastroenterology, Ourense, Spain; 4 Complejo Hospitalario Universitario de Vigo, Instituto de Investigación Biomédica, Xerencia Integrada de Vigo, Department of Gastroenterology, Vigo, Spain; 5 Hospital Universitario Río Hortega, Endoscopy Unit, Valladolid, Spain; 6 Parc de Salut Mar, Hospital del Mar, Department of Gastroenterology, Barcelona, Spain; 7 Hospital Clínico Universitario Lozano Blesa, Aragon Health Research Institute, Department of Gastroenterology, Zaragoza, Spain; 8 Hospital Universitario Central de Asturias, Department of Gastroenterology, Oviedo, Spain; 9 Hospital Universitario de Canarias, Department of Gastroenterology, Santa Cruz de Tenerife, Spain; 10 Miguel Hernández University, Department of Public Health, CIBER in Epidemiology and Public Health, Elche, Spain; 11 Miguel Hernández University, Elche, Department of Health Psychology, Elche, Spain

DOI 10.1055/s-0042-1744954

Aims Recommendations for improving the quality of colonoscopy include collecting data on patient experience with validated questionnaires. The Colonoscopy Satisfaction and Safety Questionnaire based on Patient experience (CSSQP) was recently developed and validated within the Spanish Bowel Cancer Screening Program. The present multicenter study aimed to apply the CSSQP to identify factors related to patient experiences, including all the indication for colonoscopy.

Methods This prospective multicenter study included 2200 consecutive patients that had undergone a colonoscopy between February 2019 and June 2020 in nine Spanish hospitals. Patients completed the CSSQP after the colonoscopy. Factors related to patient experiences were analyzed.

Results Of 2200 patients, 1753 filled out the questionnaire (response rate 79.7 %, sample error 2 %). Patients were more likely to respond when the indication for colonoscopy was a positive fecal immunochemical test result ($P < 0.001$). Women were less likely to be satisfied than men (OR: 0.77, 95 % CI: 0.62-0.94). In addition, patients whose colonoscopy indication was a primary colorectal cancer screening (OR: 1.68, 95 % CI: 1.15-2.44 $p = 0.007$) reported higher overall satisfaction than patients whose colonoscopy indication was gastrointestinal symptoms. Significant differences were observed in the majority of CSSQP items between centers. Safety incidents were reported by 35 (1.6 %) patients, and 176 (8 %) patients reported that they received insufficient information.

Conclusions Overall, the colonoscopy experience was positive. The CSSQP can be applied for all colonoscopy indications. A comparison of the different centers indicated significant variability in patient satisfaction.

eP102 INFORMED CONSENT IN ENDOSCOPY: READ, UNDERSTOOD OR MERELY SIGNED

Authors [Carvalho A.C.¹](#), [Cardoso R.¹](#), [Pires F.¹](#), [Ventura S.¹](#), [Rodrigues C.¹](#), [Domingues Â.¹](#), [Pinho J.¹](#), [Martins D.¹](#), [Sousa P.¹](#), [Araújo R.¹](#), [Cancela E.¹](#), [Castanheira A.¹](#), [Ministro P.¹](#), [Vieira M.²](#), [Silva A.¹](#)

Institutes 1 Centro Hospitalar Tondela-Viseu, Gastroenterology, Viseu, Portugal; 2 Unidade de Saúde Pública, ACES Porto Ocidental, Public Health, Porto, Portugal

DOI 10.1055/s-0042-1744955

Aims While informed consent is a requirement for all invasive procedures such as those in gastrointestinal endoscopy, its standardization is a challenge. Recently, our national digestive endoscopy society developed proposals for informed consent forms and information leaflets for esophagogastroduodenoscopy and colonoscopy.

The main objective was to evaluate if patients read and understood these documents.

Methods Adult patients proposed for elective esophagogastroduodenoscopy and colonoscopy and who were able to give their informed consent were included. Informed consent forms and information leaflets were sent to patients, with a small text instruction added to the body of the informed consent form. Prior to endoscopy it was assessed whether patients adequately read the informed consent form, based on 3 criteria: patient signature, table questionnaire completion and performance of the text instruction.

Results In total, 184 patients were included: 80 women and 104 men with a mean age of 63.6 ± 12.4 years. Most had only basic education (77.2%) and had previously undergone an endoscopy (91.8%). 157 patients stated they had read the form (85.3%), while 27 (14.7%) did not. While most signed the form (141, 76.6%), only 46 patients (25.0%) met all 3 criteria for adequate reading and comprehension.

No statistically significant association between informed consent form adequate reading and any of the assessed variables was found.

Conclusions Most patients do not adequately read informed consent forms. Infographic strategies can direct patients' attention and may improve these results, but they are no substitute of an effective doctor-patient relationship in obtaining informed consent.

eP103V CRONKHITE-CANADA SYNDROME FOLLOWING COVID-19 INFECTION

Authors [Chatzidakis A.¹](#), [Rizos E.¹](#), [Lazaridis L.-D.¹](#), [Koukouloti E.¹](#), [Stamou A.¹](#), [Papanikolaou I.S.¹](#), [Polymeros D.¹](#), [Triantafyllou K.¹](#)

Institute 1 National and Kapodistrian University of Athens, "Attikon" University General Hospital, Hepatogastroenterology Unit, 2nd Department of Internal Medicine-Propaedeutic, Athens, Greece

DOI 10.1055/s-0042-1744956

A 68 year-old woman presented with chronic diarrhea, mild abdominal pain, weight loss, skin pigmentation (palms and face), brittle nails, dysgeusia and hypoalbuminemia. One month earlier she was infected with COVID-19 presenting with gastrointestinal symptoms and low grade fever. Upper GI endoscopy showed multiple large inflammatory polyps in the stomach and mucosal edema and villous blunting in the duodenum. Similarly, colonoscopy showed multiple polypoid lesions and petechiae throughout the colon, while VCE showed that most of the small intestine had similar lesions. Biopsies were supportive of Cronkhite-Canada syndrome (CCS). Thus, we may speculate that this case of CCS has been triggered by COVID-19.

eP104 EVALUATION OF UPPER GI BLEEDING BY THE ROCKALL SCORE

Authors [Cherkaoui Malki M.¹](#), [ElBacha H.¹](#), [Mechhor S.¹](#), [Bouibaouen B.¹](#), [Gharbi T.¹](#), [Benzoubeir N.¹](#), [Errabih I.¹](#)

Institute 1 Ibn Sina Hospital, Mohamed V University, Gastro-Enterology-hepatology and Proctology Unit « Médecine B », Rabat, Morocco

DOI 10.1055/s-0042-1744957

Aims Rockall score (RS) is a tool developed by an English team in 1996 to establish the prognosis of hemorrhagic recurrence in patients in order to allow an early return home. We illustrate through this work our experience with the application of this score in practice in patients with upper GI bleeding, evaluate rebleeding rate and its predictive factors.

Methods It's a descriptive and analytical prospective study conducted in our department, over a period of one year from July 2020 to November 2021, the evaluation of patients after the bleeding episode was done during hospitalization and remotely by phone calls. Data were collected then analyzed using SPSS for 20.0.

Results The study included 100 patients, mean RS was 4.48 ± 1.56 . Hemorrhagic recurrence was seen in 37.6% of patients. Comparison between Group 1 (who did not recur) and group 2 (who recurred) showed a superiority of the RS in group 2 which was 5.39 ± 1.64 and 3.48 ± 1.23 respectively with $p < 0.001$. There was a correlation RS and rebleeding with $r = 0.6$, $p = 0.006$. The predictive factors for hemorrhagic recurrence were the presence of signs of shock and the presence of endoscopic signs of recent bleeding with (OR = 1.76 – IC 95% (1.048-3.679), $p < 0.001$) and (OR = 1.56 – CI 95% (1.031-3.983), $p = 0.005$) respectively.

Conclusions Recurrence bleeding is frequent according to our study, Rockall score is effective and correlated to recurrence and its application allows adequate selection of patients most at risk of rebleeding in order to give a tight follow-up for patients with a higher score.

eP105 IMPROVING OGD STANDARDS- A STEP IN THE RIGHT DIRECTION

Authors [Coleman E.¹](#), [Mourad A.¹](#), [Chedgy F.¹](#)

Institute 1 Royal Sussex County Hospital, University Hospitals Sussex NHS Foundation Trust, Gastroenterology Department, Brighton, United Kingdom
DOI 10.1055/s-0042-1744958

Aims The British Society of Gastroenterology (BSG) has developed quality standards for endoscopy including photo-documentation of 8 anatomical sites during oesophago-gastro-duodenoscopy (OGD). These standards have been established to improve early cancer recognition. It has also been shown that the use of pre-medication prior to endoscopy improves mucosal visibility which might improve diagnostic yield. The pre-gastroscopy drink used in our endoscopy department is simethicone and N-acetylcysteine. At Royal Sussex County Hospital, we assessed administration of a pre-gastroscopy drink prior to diagnostic OGD and compliance with BSG photo-documentation guidelines in era of digital image capture.

Methods The audit has run over several years in 2019, 2020 and 2021. All elective diagnostic OGDs occurring over the period of one week in each year were reviewed. Data was collected using endoscopy reports in patient notes, as well as Solus Endoscopy software. Data collected included whether pre-endoscopy drink was given, as well as number and anatomical location of the sites captured.

Results In 2021, the pre-gastroscopy drink was given in 65% of cases, compared to 16% in 2020 and 0% in 2019. In 2021, between 7-8 of the recommended anatomical sites were captured in 41% of cases, compared to 14% in 2020 and 4% in 2019.

Conclusions Results showed a significant improvement over the years in the use of the pre-gastroscopy drink prior to diagnostic OGD and a trend in improvement in photo-documentation of the recommended anatomical sites. These improvements can be attributed to ongoing departmental education, as well as the use of visual prompts in the endoscopy unit.

eP106 THE ECONOMIC IMPACT OF THE REDUCTION IN THE NUMBER OF COLONOSCOPES PERFORMED IN BRAZIL DURING THE COVID-19 PANDEMIC

Author [Correa T.¹](#)

Institute 1 Federal University of Pelotas, Faculty of Medicine, Pelotas, Brazil

DOI 10.1055/s-0042-1744959

Aims During the COVID-19 pandemic, health systems can become overwhelmed and the lack of resources is a special concern in low- and middle-income countries. The number of colonoscopies performed may be reduced by the health system oversaturation and its financial resources can be redistributed to other areas. The aim of this study was to evaluate the number of colonoscopies performed in Brazil during the COVID-19 pandemic and its economic impact.

Methods Observational study which compared the number of colonoscopies performed in the Brazilian National Health System in the years 2019 and 2020 and evaluated its economic impact. Data were obtained using the national database (DATASUS – Department of Informatics of the Unified Health System). Monetary values were converted from Brazilian Reais to United States Dollar (5.54 Reais = 1\$). Pearson's chi-squared test was performed and $p < 0.05$ was considered statistically significant.

Results During this time period, there was a total of 586,781 colonoscopies performed in the Brazilian National Health System, being 347,159 (59.2%) in 2019 and 239,622 (40.8%) in 2020. From 2019 to 2020, there was a reduction of approximately 31% in the number of colonoscopies performed in Brazil ($p < 0.001$). There was a reduction of 18.4% in the money expended by the Brazilian government on colonoscopies from 2019 (\$7,345,756) to 2020 (\$5,060,018).

Conclusions From 2019 to 2020, there was a significant reduction in the number of colonoscopies performed and in the money expended on the procedure in Brazil. This finding may be related to the health system oversaturation by the COVID-19 pandemic.

eP107 ANALYSIS OF THE NUMBER OF ENDOSCOPIC ESOPHAGEAL DILATIONS PERFORMED IN BRAZIL DURING THE COVID-19 PANDEMIC

Author [Correa T.¹](#)

Institute 1 Federal University of Pelotas, Faculty of Medicine, Pelotas, Brazil

DOI 10.1055/s-0042-1744960

Aims Considering the high transmissibility of COVID-19, health systems can become overwhelmed and the lack of resources is a major concern in low- and middle-income countries including Brazil. Endoscopic esophageal dilation is a procedure performed for symptomatic relief of esophageal strictures and may be impacted by the health system oversaturation due to COVID-19. The aim of this study was to evaluate the number of endoscopic esophageal dilations performed in Brazil during the COVID-19 pandemic.

Methods Observational study which compared the number of endoscopic esophageal dilations performed in the Brazilian National Health System in the years 2019 and 2020. The number of endoscopic esophageal dilations was evaluated using the national database (DATASUS – Department of Informatics of the Unified Health System). Pearson's chi-squared test was performed and $p < 0.05$ was considered statistically significant.

Results During this time period, there was a total of 15,473 endoscopic esophageal dilations performed in the Brazilian National Health System, being 8,909 (57.6%) in 2019 and 6,564 (42.4%) in 2020. From 2019 to 2020, there

was a reduction of 26.3% in the number of endoscopic esophageal dilations performed in Brazil ($p < 0.001$).

Conclusions There was a significant reduction in the number of endoscopic esophageal dilations performed in the Brazilian National Health System from 2019 to 2020. This finding may be related to the health system oversaturation by the COVID-19 pandemic.

eP108 REDUCTION IN THE NUMBER OF ENDOSCOPIC RETROGRADE CHOLANGIOPANCREATOGRAPHIES PERFORMED IN BRAZIL DURING THE COVID-19 PANDEMIC

Author [Correa T.¹](#)

Institute 1 Federal University of Pelotas, Faculty of Medicine, Pelotas, Brazil

DOI 10.1055/s-0042-1744961

Aims Considering the high transmissibility of COVID-19, health systems can become overwhelmed and the lack of resources is a major concern in low- and middle-income countries including Brazil. The number of endoscopic retrograde cholangiopancreatographies (ERCPs) performed may be impacted by the health system oversaturation due to COVID-19. The aim of this study was to evaluate the number of ERCPs performed in Brazil during the COVID-19 pandemic.

Methods Observational study which compared the number of ERCPs performed in the Brazilian National Health System in the years 2019 and 2020. The number of ERCPs was evaluated using the national database (DATASUS – Department of Informatics of the Unified Health System). Pearson's chi-squared test was performed and $p < 0.05$ was considered statistically significant.

Results During this time period, there was a total of 16,647 ERCPs performed in the Brazilian National Health System, being 10,342 (62.1%) in 2019 and 6,305 (37.9%) in 2020. From 2019 to 2020, there was a reduction of approximately 39% in the number of ERCPs performed in Brazil ($p < 0.001$).

Conclusions There was a significant reduction in the number of ERCPs performed in the Brazilian National Health System from 2019 to 2020. This finding may be related to the health system oversaturation by the COVID-19 pandemic.

eP109 COLORECTAL CANCER SCREENING INTERRUPTION DURING COVID-19: EXPERIENCE FROM AN ITALIAN ENDOSCOPY CENTRE

Authors [Crispino F.¹](#), [Bascone F.²](#), [Pecoraro G.²](#), [Valenza M.²](#), [Crapanzano L.¹](#), [Rosselli M.²](#)

Institutes 1 Gastroenterology & Hepatology Section, PROMISE, University of Palermo, Italy; 2 Digestive Endoscopy Unit, Ingrassia Hospital, Palermo, Italy

DOI 10.1055/s-0042-1744962

Aims The ongoing pandemic has resulted in profound disruptions of various aspects of healthcare. During the emergency phase of COVID-19, the fecal immunochemical test (FIT) of the ColoRectal Cancer Screening (CRCS) program has been interrupted in Italy, raising concerns of increased delays in colorectal cancer detection rates.

Methods We carried out a retrospective study to compare data of the CRCS colonoscopies of the pandemic period (March 2020-2021) with those of the same period of 2019-2020. The cumulative delay and the estimate of the fewer identified malignant and pre-malignant lesions were calculated. The 'standard months' of delay, namely the number of months that would be needed to catch up the cumulative delay if endoscopy volumes were similar to the pre-pandemic period, was also assessed.

Results The cumulative delay assessed during the pandemic period was 440 colonoscopies (56.4%, 344 vs 784). The estimate of the fewer identified malignant and pre-malignant lesions was 0.48 (IC 95% 0.44-0.57) and 2.5 (IC 95% 2.3-2.6), respectively. The standard months of delay were 6.7. Being aware of these data, our Endoscopy Unit has approved a plan focused on staff recruit-

ment and connections to other medical institutions to catch up on the delay accumulated during the last year.

Cumulative delay (colonoscopies 03/2019-20 vs 03/2020-21)	CRC detection rate CRC (x1.000) (IC95%)	Estimate of the fewer identified malignant lesions - CRC (IC95%)
440 (56.4%)	1.1 (1.0-1.3)	0.48 (0.44-0.57)
Cumulative delay (colonoscopies 03/2019-20 vs 03/2020-21)	Advanced adenoma detection rate Advanced adenoma (x1.000) (IC95%)	Estimate of the fewer identified pre-malignant lesions - Advanced adenoma (IC95%)
440 (56.4%)	5.7 (5.4-6.0)	2.5 (2.3-2.6)

► Fig. 1

Conclusions The COVID-19 pandemic has resulted in decreased FIT and endoscopic testing for colorectal cancer. CRSC programs are slowly resuming and therefore more structured and solid ones are needed. As an example of this, our Endoscopy Unit seized the opportunity presented by the COVID-19 crisis to enhance and support CRCS activities.

eP110 THE COST OF INADEQUATE BOWEL PREPARATION

Authors Cudmore J.^{1,2}, Zhang N.², Taylor J.², Murphy C.L.¹

Institutes 1 Mater Misericordiae University Hospital, Gastroenterology, Dublin, Ireland; 2 Universtiy College Dublin, School of Medicine, Dublin, Ireland

DOI 10.1055/s-0042-1744963

Aims Adequate bowel preparation is essential for successful, high-quality colonoscopy. Inadequate preparation for colonoscopy can necessitate repeat procedures or alternative investigations such as CT colonography. Inpatient status is one of a number of factors associated with poor preparation.

The aim was to examine the cost associated with the need for repeat colonoscopy or CT colon in those patients with inadequate preparation on index colonoscopy.

Methods The bowel preparation quality for patients who underwent full colonoscopy over an 18-month period was determined using Endoraad. Inadequate preparation was defined as either "poor" or "failed due to poor prep". Electronic patient records were used to determine if further investigations were required on the basis of the initial colonoscopy result.

Results 3,665 full colonoscopies were performed from January 2020 to June 2021. 161 (4.5%) were inpatient procedures. 28.5% of inpatient colonoscopies had inadequate preparation compared to 12.1% of outpatient procedures. Of those with inadequate preparation 49 patients underwent CT colon and 139 had repeat full colonoscopy. Based on a unit cost of €550 per CT colon and €818 per colonoscopy the total cost of repeat investigations was estimated to be €140,652.

Conclusions The cost of poor preparation for colonoscopy was a striking €140,652 over an 18 month period. Inpatients had nearly double the rate of poor preparation when compared to outpatients, supporting the policy that colonoscopy should be done in an outpatient setting where possible. Interventions such as patient education and adequate pre-assessment could be used to attempt to decrease the rate of poor preparation.

eP111 THE IMPACT OF SMARTPHONE APPLICATION ON THE QUALITY OF BOWEL PREPARATION FOR COLONOSCOPY IN VIETNAM

Authors Dao V.H.^{1,2,3}, Dao V.Q.⁴, Lam N.H.², Dao L.V.²

Institutes 1 Hanoi Medical University Hospital, Endoscopic Centre, Hanoi, Vietnam; 2 Institute of Gastroenterology and Hepatology, Hanoi, Vietnam; 3 Hanoi Medical University, Internal Medicine Faculty, Hanoi, Vietnam; 4 Hanoi Medical University hospital, Endoscopic Centre, Hanoi, Vietnam
DOI 10.1055/s-0042-1744964

Aims The development and feasibility of smartphone apps in limited resources countries is not yet clear. This study is aimed to evaluate the impact of smartphone apps on the quality of bowel preparation compared to conventional protocol.

Methods A smart phone app was developed by the Institute of Gastroenterology and Hepatology. A clinical intervention, endoscopist-blind, with a control group was performed in Hanoi Medical University hospital. The cleansing level of colonoscopy was evaluated by BBPS score.

Results 432 patients (235 in control group and 197 in intervention group) were recruited. The proportion of compliance with instructions for bowel preparation was high with no statistically significant difference in both groups: taking prescribed laxatives (97%) and water (94.2%); compliance with walking (92.1%) and massaging abdomen (67.8%) while taking laxatives. 72.1% of patients spent 2-3 hours on taking laxatives and water, in which, the percentage of the intervention group (75.5%) was higher than the control group (69.2%), $p = 0.033$. The proportion of eligible patients undergoing colonoscopy in the intervention group (95.9%) was lower than the control group (98.7%), $p > 0.05$. The level of colonic cleanliness self-assessed by patients at the last defecation that reached the standard in the control group (92.3%) was lower than the intervention group (95.4%), $p = 0.009$. The BBPS scores in the right and left colon of the intervention group were higher than the control group with significant difference ($p < 0.05$) while there was no difference in the total scores.

Conclusions The smartphone app is a novel educational with high applicability and efficiency improvement for bowel preparation.

eP112 COMPLICATIONS OF ENDOSCOPIC RETROGRADE CHOLANGIO-PANCREATOGRAPHY(ERCP): A PROSPECTIVE COHORT STUDY

Authors Das K.¹, Sharma A.¹, Chowdhury S.²

Institutes 1 Institute of Postgraduate Medical Education and Reserach, SDLD, Kolkata, India; 2 AMRI, Gastroenterology, Kolkata, India
DOI 10.1055/s-0042-1744965

Aims To assess Adverse Event(AE) of ERCP in India.

Methods Prospective observational cohort study. Consecutive patients with native papilla referred for ERCP in two tertiary-care centers, one academic-public and other private, between August, 2018 to July, 2019, in Kolkata, India were enrolled, if they satisfied the inclusion and exclusion criteria, after informed consent. ERCP was done in prone position under conscious sedation with Propofol according to standard indications. The pre-ERCP and peri-procedural details were recorded in a structured Proforma. The definition of AEs and Incidents were according to ASGE Quality Task Force Recommendations 2010. Post-ERCP all patients were followed for 30-days, either physically or on telephone or by contacting the treating physician. Institutional Ethical Clearance was obtained. Standard statistical analysis was performed. A two-tailed p -value < 0.05 was considered significant.

Results 795/929(86%) had follow-up for AE assessment. At baseline: age(mean \pm SD) 47.8 \pm 15.7; Males 252(32%); Outpatients 613(77%); academic-hospital 578(73%); ASA grade I/II 738(93%); ASGE grade of procedural complexity I/II 610(77%); ERCP for Choledocholithiasis 610(77%); target duct for intervention CBD 779(98%); advanced endoscopist(> 2000 procedures performed in past) 612(77%). 93(11.7%) patients had 97 post-ERCP Incidents;

single 89 and double 4 (Table 1). 149(18.7 %) patients developed 159 AEs; single 141, double 6 and triple in 2; Mild:Moderate:Severe::74:47:14. They were: Cholangitis 42(5.3 %); Pain, not pancreatitis/perforation 31(3.9 %); Post-ERCP Pancreatitis[PEP] 25(3.2 %); Perforation 12(1.5 %); Bleed 12(1.5 %); Cholecystitis 15(1.9 %); Others 20(2.5 %). 7 AEs developed between 14-30d time-frame. 21(2.6 %) with AE died (Cholangitis = 11; PEP = 2; perforation = 2; Sudden Cardiac Death[SCD] = 2; suspected air-embolism = 1; Bleed = 1; Infected WON = 1; Unknown = 1).

► Table 1

	Intra-procedure	Post-procedure, i.e., ≤ 14 days	Late, i.e., > 14 days	Adjunct Therapy received
Pain (N = 39)	1	36	2	26
Bleed (N = 35)	35	0	0	5
Hypoxia (N = 10)	10	0	0	0
Others (N = 13)	1	12	0	5

Conclusions Post-ERCP AE profile may vary according to geography. CTRI/2019/01/017161.

eP113 EVALUATION OF THE EFFECT OF GASTRIC TARGETED BIOPSY SAMPLING WITH I-SCAN OE TECHNOLOGY ON THE DIAGNOSTIC YIELD OF THE CLO TEST OF H. PYLORI INFECTION

Author [Dawod H.¹](#)

Institute 1 Zagazig University, Zagazig, Egypt

DOI 10.1055/s-0042-1744966

Aims to determine if the diagnostic yield of the CLO test could be improved by using endoscopic I-scan OE technology for targeted gastric biopsy sampling
Methods A prospective study recruited 112 Adult patients with active H.pylori infection diagnosed by UBT and/or histology. The patients underwent a careful examination by non-magnifying upper endoscopy and i-scan OE 3 moods, then randomly allocated into group A: non-targeted random double biopsies from the antrum and mid corpus, group B: I-scan OE directed targeted biopsy from abnormal mucosal patterns, the biopsy specimens were inoculated into CLO test kits, The reading time of the positive results was at 1, 4 and 24 hours.

Results Group B had a 92.8 % positive CLO test compared to 89.3 in group A ($p > 0.05$). One-hour CLO test was positive in 78.5 % of the patients in group B compared to 60.7 % in group A ($p < 0.05$), while group A had a significantly more positive CLO test at 24 hours.

Conclusions: sampling a targeted gastric biopsy with the aid of I-scan -OE for CLO test hastens significantly the reading time with a high total test sensitivity

eP114 COMPARATIVE STUDY ON THE SAFETY OF NON-ANESTHESIOLOGIST ADMINISTERED PROPOFOL SEDATION IN COLORECTAL CANCER SCREENING COLONOSCOPY

Authors [De Castro L.¹](#), [Martínez-Turnes A.¹](#), [Cid L.¹](#), [Fernández N.¹](#), [Romero B.¹](#), [Rodríguez D'Jesús A.¹](#), [Germade A.¹](#), [Hernández V.¹](#), [Rodríguez-Prada I.¹](#)

Institute 1 Hospital Alvaro Cunqueiro, Gastroenterology, Vigo, Spain

DOI 10.1055/s-0042-1744967

Aims Non-anesthesiologist administered Propofol (NAAP) sedation in endoscopy has dramatically increased. However, NAAP safety must be assessed for each endoscopic procedure, as their characteristics are not comparable. We aimed to assess the safety of NAAP sedation in screening colonoscopy, a high-quality procedure, of higher complexity than standard colonoscopy.

Methods Prospective cohort study comparing midazolam, Propofol and combined sedation in colonoscopy screening performed in 2018 and 2019. We used ASA and Ramsay scales for comorbidities and sedation level. Cardiopulmonary adverse events (CPAE) were defined as systolic blood pressure < 90 mmHg, oxygen saturation < 90 % or arrhythmia.

Results We analysed 3200 screening colonoscopies (58.1 % men), ASA-1 51.2 %, ASA-2 39.6 %, ASA-3-4 9.2 %. Prior to sedation, 63 subjects (2 %) showed cardiopulmonary abnormalities that would have been considered as CPAE (0.3 % hypotension, 0.2 % hypoxia, 1.5 % bradycardia). Midazolam was used in 569 (17.8 %), 1108 Propofol (34.6 %) and 1525 combined (47.6 %). Midazolam group showed higher opioid doses and lower Ramsay scores ($p = 0.000$). 227 CPAEs were registered in 205 colonoscopies (6.4 %): hypotension (3.5 %), hypoxia (1.4 %), arrhythmia (2.2 %). Midazolam sedation group showed fewer CPAE ($p = 0.000$). Propofol group showed more hypotension and bradycardia than combined ($p = 0.000$). All CPAE were mild and resolved satisfactorily with simple manoeuvres (Table 1). Logistic regression model associated probability of no CPAE with midazolam sedation ($p = 0.000$) and a short duration of colonoscopy ($p = 0.006$).

► Table 1

Hypotension TAS < 90mmHg N = 111	No intervention 15 (13.5 %)	Saline solution 73 (65.7 %)	Perfusion decrease 17 (15.3 %)	Both 6 (5.4 %)
Hypoxia Sat < 90 % N = 46	No intervention 0	Chin-For-head manoeuvre 37 (80.4 %)	Perfusion decrease 8 (17.4 %)	Ambu Ventilation 1 (2.2 %)
Bradycardia FC < 50-lpm N = 70	No intervention 49 (70 %)	Atropine 4 (5.7 %)	Perfusion decrease 17 (24.3 %)	Both 0

Conclusions The development of CPAE in screening colonoscopy seems to be associated to Propofol sedation and long duration procedures. CPAE severity is mild, and in most cases endoscopic team management can be considered satisfactory.

eP115 OUTCOMES AND RISK FACTORS ASSOCIATED WITH GASTROINTESTINAL BLEEDING AMONG PATIENTS WITH SEVERE COVID-19

Authors [de Oliveira G.H.P.¹](#), [de Moura D.T.H.¹](#), [McCarty T.R.²](#), [Proença I.M.¹](#), [Rocha R.S.d.P.¹](#), [Kum A.S.T.¹](#), [Moll C.F.¹](#), [Luz G.d.O.¹](#), [Cheng S.¹](#), [dos Santos M.E.L.¹](#), [de Moura E.G.H.¹](#)

Institutes 1 Hospital das Clínicas, University of São Paulo School of Medicine, Gastroenterology, São Paulo, Brazil; 2 Brigham and Women's Hospital – Harvard Medical School, Gastroenterology, Hepatology and Endoscopy, Boston, United States

DOI 10.1055/s-0042-1744968

Aims The coronavirus disease 2019 (COVID-19) caused by the novel coronavirus (SARS-CoV-2), most commonly associated with being a respiratory illness may manifest with multi-organ involvement, including the gastrointestinal (GI) system. Given the ongoing pandemic, there is an urgent need to understand the impact of GIB among a population of patients with COVID-19. Therefore,

we sought to evaluate patients with severe COVID-19 and assess outcomes and risk factors associated with GIB.

Methods This was a single-center cohort study of a quaternary hospital in São Paulo, Brazil. Following the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) Statement, we retrospectively analyzed a cohort of hospitalized patients with severe COVID-19 who were admitted to the ICU from March 2020 to May 2021. Comparison of demographics, symptoms, laboratory data, and clinical outcomes were compared between GIB vs non-GIB groups. Multivariable regression analyses were performed to evaluate risk factors related to GIB and critical care outcomes, including in-hospital mortality.

Results A total of 285 critically ill patients with COVID-19 were evaluated [29.82% with GIB vs 70.18% without GIB]. Patients with GIB were found to have increased in-hospital mortality (65.88% vs 37.00%; $p = 0.0001$) and length of hospitalization (37.44 ± 30.02 vs 19.88 ± 11.60 days; $p < 0.0001$). On multivariable regression, obesity was a significant risk factor for GIB [OR 66.09 (95% CI 3.80-1151.00); $p = 0.004$] (Table 1).

► Table 1

Logistic Regression for Gastrointestinal Bleeding	Odds Ratio	95% Confidence Interval	P Value
Male Gender	1,13	0.47 to 2.70	0.780
Obesity	66,09	3.80 to 1151.00	0.004
Chronic Kidney Disease	0,47	0.16 to 1.39	0.174
Gastrointestinal Symptoms	1,49	0.56 to 3.96	0.425

Conclusions In conclusion, patients with severe COVID-19 and GIB had a significantly longer duration of hospitalization and increased mortality compared to patients without GIB. Notably, obesity was found to vastly increase the risk of GIB.

eP116 DEVELOPMENT AND VALIDATION OF A NOVEL SCORE FOR THE COMPLETENESS OF CAECAL INTUBATION – THE CCIS (COMPLETENESS OF CAECAL INTUBATION SCORE)

Authors Crapé L.¹, Debels L.¹, Schoonjans C.², Anderson J.³, Valori R.⁴, Desomer L.⁵, Tate D.¹

Institutes 1 Universitair Ziekenhuis Gent, Gent, Belgium; 2 AZ St Jan, Brugge, Belgium; 3 Cheltenham General Hospital, Cheltenham, United Kingdom; 4 Gloucestershire Royal Hospital, Gloucestershire, United Kingdom; 5 AZ Delta, Roeselare, Belgium

DOI 10.1055/s-0042-1744969

Aims 5-10% of colorectal cancers (CRC) are post-colonoscopy CRC. Potential causes include incomplete caecal visualisation. We created and validated the Completeness of Caecal Intubation Score (CCIS) as a potential new colonoscopy key performance indicator (KPI).

Methods The 8-point CCIS was developed by author consensus. CCIS includes determination of the appendiceal orifice (AO), three sides of the tri-radiate fold (TF1-3) and the four outer caecal quadrants (OQ1-4).

Endoscopists of varying experience were contacted using a survey to score the same 20 caecal image-sets using CCIS after an instructional video. Accuracy was determined compared to author opinion derived at a consensus meeting. Inter-rater reliability was calculated using the interclass correlation coefficient (ICC).

Results 79 endoscopists completed the survey. 69.6% were independently practising.

	Results (95% confidence interval unless stated)
CCIS (first impression complete) vs CCIS (first impression incomplete)	median 8/8 (IQR 0) vs 4/8 (IQR 4) $p < 0.001$
CCIS % caecum visualised ($< 90\%$ vs $\geq 90\%$)	Correlation coefficient 0.83 $p < 0.001$
Accuracy CCIS (score only) vs author-consensus	82.3% (81.7-83.0%)
ICC for CCIS	0.53 (0.39-0.71) (moderate agreement)
ICC for Boston Bowel Preparation Score	0.56 (0.42-0.73) (moderate agreement)
Accuracy all areas correct(*) vs author-consensus	69.1% (68.3-70.0%)

► Fig. 1

CCIS was significantly higher in the images that were classified as completely visualised during first-impression evaluation (8/8 (IQR 0) vs 4/8 (IQR 4), $p < 0.001$) and had a strongly positive correlation with the subjective stated percentage of the caecum visualised (correlation coefficient 0.83, $p < 0.001$). The overall accuracy of CCIS as compared to author-consensus was 82.3%, (95% confidence interval (95%CI) 81.7-83.0%). The overall inter-rater agreement for CCIS was moderate 0.53 (95%CI 0.39-0.71).

When considering exactly which caecal areas were visualised, accuracy was lower – 69.1% (95%CI 68.3-70.0%).

Conclusions Endoscopists of varying experience accurately determined CCIS with high accuracy and moderate inter-rater agreement. This score has the potential to be used as a retrospective key performance indicator and driver of best practice in colonoscopy.

eP117 SMALL BOWEL EXPLORATION WITH CAPSULE ENDOSCOPY, DOES THE INDICATION FIT THE CLINICAL PRACTICE GUIDELINES?

Authors Díaz Alcázar M.M.¹, García Robles A.¹

Institute 1 Hospital Universitario Clínico San Cecilio, Granada, Spain

DOI 10.1055/s-0042-1744970

Aims To assess if the indications of the capsule endoscopy made in our center adjust to the recommendations of the clinical practice guidelines (ESGE, 2015).

Methods A retrospective descriptive study of the last 50 procedures with capsule endoscopy carried out in our hospital.

Results The indication for capsule endoscopy was anemia in 35 patients (74%), obscure gastrointestinal bleeding (OGIB) 10 (20%), suspicion of Crohn's disease 4 (8%), and polyposis syndromes 1 (2%).

Of the explorations requested for anemia, 6 of 35 patients (17%) did not have a complete previous evaluation (medical history including hematological and gynecological evaluation in premenopausal women, response to empirical iron trial, oesophagogastroduodenoscopy, and ileocolonoscopy). Of the patients who had undergone oesophagogastroduodenoscopy, 5 (15%) had gastric and duodenal biopsies.

Of the procedures requested for OGIB, all were performed during the bleeding episode, finding the cause of bleeding in 80%.

Conclusions

1. It is important a full evaluation before indicating a capsule endoscopy due to iron-deficiency anemia. In our series, gastric and duodenal biopsies were only taken in 15% of patients.

2. The capsule performed during the bleeding episode increases its diagnostic usefulness. In our series, lesions that justify the bleeding were found in 80 % of patients.
3. In our center, the capsule endoscopy is underused in patients with Crohn's disease and it is a fundamental procedure for the complete evaluation of these patients.
4. It is important that the indications for capsule endoscopy fit the clinical practice guidelines to increase its benefit, reduce costs and prevent unnecessary examinations with potential risk of complications.

eP118 INTESTINAL PREPARATION FOR CAPSULE ENDOSCOPY, DOES IT IMPROVE WITH SIMETHICONE?

Author Díaz Alcázar M.M.¹

Institute 1 Hospital Universitario Clínico San Cecilio, Granada, Spain

DOI 10.1055/s-0042-1744971

Aims To evaluate if simethicone improves the intestinal preparation for capsule endoscopy.

Methods A retrospective descriptive study. Review of 30 procedures. In 15 the preparation was only 8-hour fast. In another 15 the patients also received 100mg of oral simethicone. Solid intake is restarted after 4 hours. The preparation is categorized as adequate or inadequate according to the adequacy assessment of Brotz.

Results Of the 15 patients in whom the preparation was only fasting, in seven (47 %) it was inadequate due to detritus and sparkling content. In the five patients taking oral iron, the cleansing was adequate.

Of the 15 that received simethicone, in nine (60 %) the preparation was inadequate due to detritus, but foam was not objectified in any. Of these nine patients, one did not respect 4-hour fast after capsule ingestion and another had gastroparesis. Six patients were taking iron, and only two (33 %) had adequate cleansing.

Conclusions

1. There are no standardized scales that assess the adequacy of bowel cleansing, so its evaluation is based on subjective judgments.
2. Simethicone has a positive impact on the small bowel cleansing and decreases the presence of bubbles and foam, as subjectively described in our series.
3. Despite the simethicone, 60 % of patients have subjectively inadequate preparation. Stopping treatment with iron, optimizing the diet the previous day and longer fasting after capsule ingestion (7 hours for solids) could improve it.
4. Further studies are needed to assess the indication of purgatives, the doses, and the time for their intake.

eP119 DOES ARTIFICIAL INTELLIGENCE ASSIST ENDOSCOPISTS TO EASIER DIAGNOSE GASTRIC PRECANCEROUS LESIONS AND HELICOBACTER-PYLORI INFECTION? A SYSTEMATIC-REVIEW AND META-ANALYSIS

Authors Dilaghi E.¹, Lahner E.¹, Annibale B.¹, Esposito G.¹

Institute 1 Sapienza University of Rome, Sant'Andrea Hospital, Department of Medical and Surgical Sciences and Translational Medicine, Rome, Italy

DOI 10.1055/s-0042-1744972

Aims The endoscopic diagnosis of *Helicobacter-pylori*(Hp) infection and gastric precancerous lesions(GPL), namely atrophic gastritis and intestinal metaplasia, remains still challenging. Artificial intelligence(AI) may represent a powerful resource for endoscopists, making the endoscopic recognition of these conditions easier. Our study aimed to explore the diagnostic-performance of AI in

the endoscopic diagnosis of GPL and Hp infection using AI processed endoscopic images.

Methods A systematic-review of literature, according to PRISMA, was performed searching core databases up to September-2021. Inclusion criteria were studies on the diagnostic-performance of AI-system in the diagnosis of GPL and Hp infection. A meta-analysis was performed on the pooled diagnostic accuracy of all included studies.

Results Overall, 128 studies were found, and four(patients, n = 1891) and nine(patients, n = 2430) studies exploring AI-system outcomes in GPL and Hp infection, respectively, were finally included. The pooled-accuracy (random effects model) was 89.1 %(95%CI 85.7-92.1) and 79.64 %(95%CI 66.7-90.0) for detecting GPL and Hp infection, respectively. Heterogeneity among studies, for both GPL and Hp infection, was significant [$I^2 = 69.9 \%$ (95 %CI 13.6-89.5); $I^2 = 97.9 \%$ (97.2-98.5), respectively]. The Begg's-test was significant($p = 0.0371$), indicating publication-bias among studies on the diagnosis of Hp infection, but not in those on GPL. Considering only those studies which used CNN-model($n = 5$ studies) for the diagnosis of Hp infection, the pooled-accuracy (random effects model) did not substantially change: 74.1 %[(95 %CI 51.6-91.4); $I^2 = 98.9 \%$ (95 %CI 98.5-99.3)], Begg's test($p = 0.1416$).

Conclusions AI-system seems to be a good resource to easier diagnose GPL and Hp infection showing a pooled diagnostic accuracy of 90 % and 80 %, respectively. Considering the high heterogeneity between studies, these promising data need external-validation by randomized-control-trials and prospective real-time studies.

eP120 SMALL BOWEL CAPSULE ENDOSCOPY IN OBSCURE GASTROINTESTINAL BLEEDING: A MATCHED COHORT COMPARISON OF PATIENTS WITH NORMAL VS SURGICALLY-ALTERED GASTRIC ANATOMY

Authors Dray X.¹, Rahmi G.², Riccioni M.E.³, Vanbiervliet G.^{4,5}, Wurm Johansson G.⁶, Leandri C.⁷, Baltes P.⁸, Duburque C.⁹, Cholet F.¹⁰, Koulaouzidis A.¹¹, Quénéhervé L.¹⁰

Institutes 1 Sorbonne University, Hôpital Saint-Antoine, APHP, Centre for Digestive Endoscopy, Paris, France; 2 Hôpital Européen Georges Pompidou, Gastroenterology, Paris, France; 3 Fondazione Policlinico A.Gemelli-IRCCS, Roma, Italy; 4 CHU, Hôpital L'Archet 2, Gastroenterology, Nice, France; 5 CHU Nice, Hôpital L'Archet, Gastroenterology, Nice, France; 6 Skåne University Hospital, Lund University, Gastroenterology, Malmö, Sweden; 7 Cochin University Hospital, Gastroenterology, Paris, France; 8 Agaplesion Bethesda Krankenhaus Bergedorf, Innere Medizi, Hamburg, Germany; 9 Groupement des Hôpitaux de l'Institut Catholique de Lille, Hôpital Saint Philibert, Gastroenterology, Lomme, France; 10 Brest University Hospital, Gastroenterology, Brest, France; 11 Pomeranian Medical University, Social Medicine & Public Health, Szczecin, Poland

DOI 10.1055/s-0042-1744973

Aims Little is known about small bowel capsule endoscopy (SBCE) outcomes in patients with surgically altered anatomy. We aimed to assess the feasibility and diagnostic yield of orally ingested SBCE to investigate obscure gastrointestinal bleeding (OGIB) in patients with surgically altered gastric anatomy, compared to native gastric anatomy.

Methods 207 patients with OGIB were selected from an open, multicenter, retrospective cohort (SAGA study) and match-paired according to age, gender and bleeding type (overt/occult) to 207 control patients from a randomized controlled trial (PREPINTTEST).

Primary outcomes were the diagnostic yield (P1 or P2 findings), completion rate (CR), adverse events rate AER, and small bowel transit time (SBTT).

Results The diagnostic yield was not statistically different between groups (44.9 % in SAGA vs 42.5 % in control patients).

Inflammatory and ulcerated lesions were significantly more frequent in patients with SAGA (43.0 % vs 29.3 %). The median SBTT was significantly longer in the

SAGA group than in control patients (283 vs 206 minutes), with a significantly lower CR (82.6% vs 89.9%); Adverse events were scarce (0.2%).

► Table 1

	Surgically altered gastric anatomy SAGA cohort (n = 207)	Normal gastric anatomy PREPINTEST control patients (n = 207)	p
P1 or P2 lesions, n (%)	93 (44.9%)	88 (42.5%)	0.24
SB transit time, median [IQR]	283 min [230 ; 378]	206 min [87 ; 254]	<0.00001
Complete SB examination, n (%)	171 (82.6%)	186 (89.9%)	0.03
Adverse events, n (%)	1 (0.5%)	0 (0.0%)	>0.99

Conclusions Patients with surgically altered gastric anatomy should benefit from SBCE investigation for OGIB as much as non-operated patients.

eP121 LOW COST REAL-TIME COLONOSCOPY PROCESSING WITH DEEP LEARNING

Authors Drug V.¹, Ciobanu A.², Luca M.², Vulpoi R.¹, Olteanu A.¹, Barboi O.¹

Institutes 1 "Gr. T. Popa" University of Medicine and Pharmacy, Iași, Romania, Institute of Gastroenterology and Hepatology, "Sf. Spiridon" Emergency Hospital, Iași, Romania, Iași, Romania; 2 Institute of Computer Science, Romanian Academy, Iași, Romania

DOI 10.1055/s-0042-1744974

Aims Developing a low cost microsystem that can automatically identify in real-time different entities during a colonoscopy. It is based on a pre-trained deep learning neural network retrained on 700 annotated frames. The trained network works on a Jetson Xavier NX microsystem from NVIDIA.

Methods Starting with a database of colonoscopies, 300,000 frames were extracted. After several selections we ended up with 70 images for each of the 10 classes: sessile and pedunculated polyps, lipoma, diverticulum, bleeding, vascular tissue, water jet, tool head, forceps and snare. These frames were annotated by qualified colonoscopists. A pretrained Mobilenet neural network was retrained on our microsystem to detect entities pertaining to the selected classes. The resulted neural network was exported in the .onnx format.

Results On the same microsystem, several video files were processed in real-time and the results were very good for some classes (e.g. bleeding, tool heads) and at least satisfactory for others (e.g. small sessile polyps). One important result is that a Jetson Xavier NX microsystem has the computer power capacity to process real-time colonoscopies, i.e. to detect and mark important entities in frames, and also to save these results as a new video file.

Conclusions We developed a microsystem capable of processing in real-time video colonoscopy files. A database of 700 frames were used to retrain a deep learning neural network. Ten classes of entities were detected with good accuracy. A low cost Jetson Xavier NX microsystem from NVIDIA was used and it proved to have enough computer power for this complex task.

eP122 INCORPORATING ESGE GUIDANCE INTO LIVE ENDOSCOPY EDUCATION – LESSONS FOR THE PERI AND POST-COVID ERA

Authors El Menabawey T.¹, Graham D.¹, Phillpotts S.¹, Webster G.¹

Institute 1 University College London Hospitals, London, United Kingdom
DOI 10.1055/s-0042-1744975

Aims Live Endoscopy Events (LEEs) are used to disseminate expert practice. However, there is minimal evidence to support the format and learning objectives are rarely explicit. Social distancing has forced a rethink of how LEEs are delivered online and ESGE have published an updated position statement in 2021. Recommendations include the use of pre-recorded cases and publishing learning objectives written with Bloom's Taxonomy (to describe the cognitive processes by which learners engage with knowledge).

Methods We designed a 2-day LEE (London Live Endoscopy) based on the updated position statement. Learning outcomes were constructed using Bloom's taxonomy and addressed with 54 short, pre-recorded cases and live facilitated discussion with faculty. Delegates were able to ask questions through the host platform (GastroLearning) and could access cases "on-demand" throughout.

Participants were asked to complete a post-course evaluation survey after each session and at the conclusion of the course.

Results 1191 delegates registered and 709 accessed the event. There were 12 hepatobiliary, 13 upper and 11 lower gastrointestinal learning outcomes. 83% of 154 respondents agreed learning outcomes had been achieved. 100% of 119 delegates found clear description of learning outcomes useful. 94% of 114 found the pre-recorded format superior to traditional LEEs for achieving learning outcomes.

Conclusions This is the first published LEE run in line with ESGE guidance, the recommendations of which are supported by our findings. We have demonstrated participants believe the use of learning objectives using Bloom's taxonomy and pre-recorded cases with live discussion may be superior to the traditional LEE model.

eP123 STENTFIX OTSC FOR PREVENTING FULLY COVERED SELF-EXPANDABLE METAL STENTS MIGRATION IN THE GASTROINTESTINAL TRACT

Authors Elmo C.¹, Manta R.¹, Conio M.², Zullo A.³

Institutes 1 A.O. Perugia, Perugia, Italy; 2 General Hospital, Sanremo, Italy; 3 Nuovo Regina Margherita Hospital, Roma, Italy
DOI 10.1055/s-0042-1744976

Aims To evaluate clinical outcomes of patients treated with Stentfix device.

Methods 31 consecutive patients (median age: 58 years; males, 80%), with diseases of different etiology and localization (upper or lower GI tract) were enrolled. For each patient, OTSC device was placed to prevent FCSEMS migration. All patients received longitudinal follow-up.

Results Technical and clinical success was achieved in all patients. In one patient the distal edge of the stent has turned over as it passed from the duodenal bulb to the gastric body.

Conclusions The Stentfix OTSC System appears to be a long term useful and safe device to prevent FCSEMS migration in a variety of clinical scenarios.

eP124 PRE-ENDOSCOPIC SARS-COV-2 SCREENING IN ASYMPTOMATIC PATIENTS DURING THE FIRST YEAR AFTER RESTARTING ENDOSCOPIC SCREENING: A RETROSPECTIVE STUDY IN A TERTIARY CENTER

Authors Fortuny M.¹, Gutierrez-Rios L.¹, Calm A.¹, Marin I.¹, Caballero N.¹, Colan-Hernandez J.¹, Uchima H.¹, Moreno de Vega V.¹, Domenech E.¹, Iborra I.¹

Institute 1 Hospital Universitari Germans Trias i Pujol, Badalona, Spain
DOI 10.1055/s-0042-1744977

Aims To describe the results of pre-endoscopic screening with Sars-CoV-2 RT-PCR performed in asymptomatic patients scheduled for elective endoscopy in our center in the 2nd, 3rd and 4th epidemic surges.

To analyze the correlation between those tested positive with the epidemiological data published by the Catalan Health Department (CHD).

Methods We conducted an observational retrospective study of our screening spanning 22/6/2020-20/6/2021. We collected the effective potential growth (EPG, an index measuring outbreak risk) weekly and the cumulative incidence (CI) at 7/14 days. Epidemiological data were collected from the CHD and trended with our results.

Results We performed 5.808 tests yielding 125 positive results (2.15%). The highest positive rate was recorded in January-2021 (9.26%). All positive results were obtained in weeks considered of high or very high risk (EPG > 100). We found a strong correlation ($Rho = 0.796$; $p < 0.001$) between weekly positive rate and EPG. The number of positive results was significantly lower on weeks with $EPG < 100$ compared with $EPG > 100$. Taking the EPG value from one and two weeks before to plan the screening, up to 876 tests could be avoided with only one positive result to account.

Conclusions Pre-endoscopic screening identifies a significant number of asymptomatic patients corresponding to more than 9% in high-risk weeks. Epidemiological data (EPG/7-CI/14-CI) for up to 2 weeks prior show a significant correlation with our screening results. EPG of up to 2 weeks prior identifies the weeks with least risk and could be useful to plan pre-endoscopic screening and adequate material and human resources.

eP125 EFFICACY AND SAFETY OF A 1-LITRE LOW VOLUME PREP IN A BOWEL CANCER SCREENING COHORT

Authors Gandhi A.¹, Cramb L.¹, Condren K.-A.¹, Moore R.¹, Bentley B.¹, Dunn K.¹, John S.¹

Institute 1 Gold Coast University Hospital, Department of Digestive Health, Gold Coast, Australia

DOI 10.1055/s-0042-1744978

Aims Adequacy of bowel prep is essential for high quality colonoscopy, for early detection of neoplasia and to reduce adenoma missed rates. Standard prep regimes are difficult to tolerate and patient compliance is poor. A novel low volume (1L) bowel prep with macrogol 3350, Sodium Ascorbate, Ascorbic acid and electrolytes is now available. We aimed to assess its efficacy and safety.

Methods Data was collected prospectively in a single center between July 2020 and November 2021. A cohort of patients undergoing screening colonoscopy after a positive faecal immunohistochemical test were given 1-litre prep and the proceduralist was blinded. The Boston Bowel Preparation Scale (BBPS) was used to record the quality of bowel prep; score of 6 or more was defined as adequate cleansing. Procedural outcomes were analyzed through electronic medical records.

Results 682 patients, aged 50-75 years, underwent colonoscopy with the novel 1-litre prep. Adequate bowel cleansing was achieved in 663 patients (96%). Of these, excellent bowel cleansing was achieved in 480 (70%, BBPS 8-9) and good prep (BBPS 6-7) in 183 patients. No serious adverse effects were reported. Intolerance to prep or minor side effects was reported by less than 5% of our cohort.

Conclusions Low volume bowel prep is better tolerated and can achieve the efficacy of standard prep regimes. In our cohort of screening colonoscopy patients, a novel 1-litre prep achieved high efficacy and was well tolerated and safe. Furthermore, the majority of patients achieved excellent cleansing.

eP126 FIRST IN VIVO COMPUTER-AIDED DIAGNOSIS OF COLORECTAL POLYPS USING WHITE LIGHT ENDOSCOPY

Authors García-Rodríguez A.¹, Tudela Y.², Córdova H.³, Carballal S.³, Ordás I.³, Moreira L.³, Vaquero E.³, Ortiz O.¹, Rivero L.³, Sánchez FJ.², Cuatrecasas M.⁴, Pellisé M.³, Bernal J.², Fernández-Esparrach G.³

Institutes 1 Endoscopy Unit. ICMDiM. Hospital Clínic of Barcelona.

University of Barcelona, Barcelona, Spain; 2 Computer Science Department. Universitat Autònoma de Barcelona and Computer Vision Center, Barcelona, Spain; 3 Endoscopy Unit. ICMDiM. IDIBAPS. CIBEREHD. Hospital Clínic of Barcelona. University of Barcelona, Barcelona, Spain; 4 Pathology Department. IDIBAPS. CIBEREHD. Hospital Clínic of Barcelona. University of Barcelona, Barcelona, Spain

DOI 10.1055/s-0042-1744979

Aims Artificial intelligence is currently able to accurately predict the histology of colorectal polyps. However, systems developed to date use complex optical technologies and have not been tested in vivo. The objective of this study was to evaluate the efficacy of a new deep learning-based optical diagnosis system, ATENEA, in a real clinical setting using only high-definition white light endoscopy and to compare its performance with endoscopists.

Methods ATENEA was prospectively tested in real life on consecutive polyps detected in colorectal cancer screening colonoscopies at Hospital Clínic. No images were discarded and only white light endoscopy was used. The in vivo ATENEA's prediction (adenoma vs non-adenoma) was compared with the prediction of four staff endoscopists without specific training in optical diagnosis for the study purposes. Endoscopists were blind to the ATENEA's output. Histology was the gold standard.

Results 90 polyps (median size: 5 mm, range: 2-25) were included of which 69 (76.6%) were adenomas. ATENEA correctly predicted the histology in 63/69 (91.3%, 95% CI: 85.4%-97.1%) adenomas and 12/21 (57.1%, 95% CI: 46.9%-67.3%) non-adenomas whilst endoscopists in 52/69 (75.3%, 95% CI: 66.4%-84.2%) and 20/21 (95.2%, 95% CI: 90.8%-99.6%), respectively. The global accuracy was 83.3% (95% CI: 75.6%-91%) and 80% (95% CI: 71.7%-88.2%) for ATENEA and endoscopists, respectively.

Conclusions ATENEA can accurately be used for in vivo characterization of colorectal polyps enabling the endoscopist to make direct decisions. ATENEA showed a similar global accuracy compared to endoscopists despite an unsatisfactory performance for non-adenomatous lesions.

eP127 QUALITY SYSTEM BASED IN ISO 9001:2015 AND THE IMPACT IN THE IMPROVEMENT OF THE INDICATORS IN A GASTROINTESTINAL ENDOSCOPY UNIT

Authors Garrido F.¹, Adán L.¹, González C.¹, Martínez-Alcalá Á.¹, Zaera C.¹, Villa J.C.¹, Buxaderas M.L.², Gimeno M.M.³, Aldeguez M.¹, Ponferrada Á.¹

Institutes 1 University Hospital Infanta Leonor, Gastroenterology.

Gastrointestinal Endoscopy Unit, Madrid, Spain; 2 University Hospital Infanta Leonor, Quality Unit., Madrid, Spain; 3 University Hospital Infanta Leonor, Pathology, Madrid, Spain

DOI 10.1055/s-0042-1744980

Aims The ISO 9001:2015 is a Quality System based in the risk evaluation and the continuous improvement of the organization, but could improve the usual indicators that we have in a Gastrointestinal Endoscopy Unit? Our objective was to evaluate the improvement of some of the most usual indicators in Gastrointestinal Endoscopy in our Unit, after to get the certification ISO 9001:2015 in March 2019. From the request of the endoscopy to the post procedure, including endoscope reprocessing, traceability, and the management of the tissue sampling.

Methods A Quality committee was formed in our Unit, with the support of the Quality Unit of our Center, University Hospital Infanta Leonor, Madrid. We

evaluate the indicators prospectively since January 2018, and we have done a descriptive analysis of our results from January 2018 to December 2020.

Results The Gastrointestinal Endoscopy process was separated in 10 sub-process, and we obtain 25 indicators that are being evaluating continuously. From those 25 indicators, we have an improvement in 13/25 (52%). That improvement was significant in the average waiting time (AWT) for the endoscopy: AWT in days for a gastroscopy from 2018 to 2020 (45.58, 38.84 and 15.67 days respectively). AWT, days for a colonoscopy (136.37, 61.14 and 15.65 respectively).

► **Table 1**

Some of the 25 Indicators that are being evaluating continuously. * Initial certification ISO 900:2015	2018	2019 *	2020
Average waiting time for gastroscopy (days).	45.58	38.84	15.67
Average waiting time for colonoscopy (days).	136.37	61.14	15.65
% Wrong request for sedation with or without Anesthesiologist.	---	4.16 %	2.46 %
Minor traceability incidents.	---	41	21

Conclusions A Quality System based in the ISO 9001:2015 could improve some of the usual indicators that we have in our Units. In our case, that improvement was in the 52 % of the indicators, particularly in the AWT for a gastroscopy and colonoscopy, with a decrease of 66 % and 88 % respectively.

eP128 EVALUATION OF 2 DIFFERENT REGIMENS OF COLON PREPARATION FOR AN ADVANCED CLEANING USING A 2LT PEG-CS WITH SIMETHICONE: A RANDOMIZED, CONTROLLED STUDY – THE ERACLES STUDY

Authors Pasquale L.¹, Grande G.², Zagari R.M.³, Pisani A.⁴, Da Massa Carrara P.⁵, Germanà B.⁶, Ciliberto E.⁷, Cengia G.⁸, Lamazza A.⁹, Laterza L.¹⁰, Stillitano C.⁷, Picascia D.¹, Conigliaro R.², Galloro G.¹¹

Institutes 1 Frangipane Hospital of A. Irpino, Gastroenterology Unit, A. Irpino, Italy; 2 Azienda Ospedaliero Universitaria di Modena, Gastroenterology and digestive endoscopy, Modena, Italy; 3 University Alma Mater Studiorum of Bologna, Department of Medical and Surgical Sciences. Gastroenterology Unit, Bologna, Italy; 4 S. De Bellis Hospital of Castellana Grotte, Gastroenterology and Digestive Endoscopy Unit, Castellana Grotte, Italy; 5 Lucca USL Toscana NORD-OVEST, Endoscopia Digestiva e Malattie dell'apparato digerente, Lucca, Italy; 6 S. Martino Hospital of Belluno, Gastroenterology Unit, Belluno, Italy; 7 S. Giovanni di Dio Hospital of Crotone, Gastroenterology Unit, Crotone, Italy; 8 Manerbio Hospital, Digestive Endoscopy Unit, Manerbio, Italy; 9 University La Sapienza of Rome, Department of Surgery P. Valdoni. Digestive Endoscopy Unit, Roma, Italy; 10 S.Orsola-Malpighi Hospital, Department of Medical and Surgical Sciences. Gastroenterology Unit, Bologna, Italy; 11 University Federico II of Naples, Department of Clinical Medicine and Surgery. Surgical Endoscopy Unit, Napoli, Italy

DOI 10.1055/s-0042-1744981

Aims Although the split dose regimen is recommended as bowel preparation in patients underwent to morning colonoscopy, its use in daily practice remains limited. Conversely, the classic day before regimen account for up to 35 % of inadequate bowel cleansing.

On this context, the Italian Society of Digestive Endoscopy(SIED) promoted a prospective multicentric randomised study to compare two different regimen of low volume(PEG/citrate/symeticone) bowel preparation in patient that undergo to early morning colonoscopy

Methods In this ad-interim analysis, 204 patient were equally randomised in group A to assume both dose of preparation from 8pm to midnight(*the day before late group*) and group B in which the second dose was taken 4 hours before the examination(*split dose group*). The primary endpoint was to evaluate bowel cleansing adopting Boston Bowel Preparation Score. Secondary endpoints were the evaluation of compliance and tolerability, safety, Intraluminal boubles score, polyp detection rate.

Results Efficacy measured using Chi-square test showed 83,9 %(CI 95 %, 74,5-90,9) good or optimal bowel cleansing for patients in group A and 94,3 %(CI 95 % 87,1-98,1) in group B (p-value0,029)

Thirteen patient in the group A and 20 in the group B referred fear of incontinence during the journey to the hospital (p value = 0.165).

Compliance, tolerability, propensity to repeat the same regime in the next colonoscopy, didn't show differences among the two groups.

Conclusions Although the split dose regimen remains the standard, in some specific setting, the use of the *day before late* represents an alternative that guarantees an adequate intestinal cleansing for early morning colonoscopy

eP129 CORONAVIRUS DISEASE TRANSMISSION PREVENTED IN AN ENDOSCOPY UNIT WITH UNIVERSAL PROTECTIVE MEASURES AND NO SYSTEMATIC PREPROCEDURAL TESTING

Authors Guilabert L.¹, Aparicio J.R.¹, Medina-Prado L.¹, Rodríguez-Díaz J.C.², Gomis M.L.¹, Chico-Sánchez P.³, Jover R.¹

Institutes 1 Hospital General Universitario de Alicante. Instituto de Investigación Biomédica ISABIAL, Servicio de Medicina Digestiva, Alicante, Spain; 2 Hospital General Universitario de Alicante. Instituto de Investigación Biomédica ISABIAL, Servicio de Microbiología, Alicante, Spain; 3 Hospital General Universitario de Alicante. Instituto de Investigación Biomédica ISABIAL, Servicio de Medicina Preventiva, Alicante, Spain
DOI 10.1055/s-0042-1744982

Aims During COVID 19 pandemic some societies recommended universal preprocedure testing for patients scheduled for an endoscopic procedure. However, some other societies recommended against and considered enough to maintain strict infection control strategies. Our aim is to evaluate the outcomes of this strategy in a tertiary endoscopy unit in a COVID-19 high prevalence area.

Methods We conducted a retrospective chart review of patients undergoing endoscopy without preprocedure COVID testing at our center from March 2020 to May 2021. PCR performed in the patients receiving an endoscopy was analyzed and patients who tested positive 14 days before and 14 days after were selected. Registry of the endoscopy unit members participating in these procedures was also analyzed.

Results 10,132 procedures were performed in the unit. Based on PCR tests, 26 patients were infected with SARS-CoV-2 PCR between 14 days before and 14 days after the procedure, and 27 endoscopy procedures were performed. 8 procedures were performed in patients with positive COVID-19 test result, and 19 were performed in patients with unknown carrier status. In 23 (88.5 %), transmission occurred through social or familial contact, and in 3 (11.5 %) cases, transmission occurred in the hospital. Four health care workers in the endoscopy unit became infected during this period with COVID-19 and none of them were related to the endoscopic procedures performed in patients with COVID-19.

Conclusions SARS-Cov-2 positive testing in asymptomatic ambulatory patients is rare and the adequate use of individual protective measures emerges as the main way to control the spread of COVID-19 infection in endoscopy centers.

eP130 CHARACTERIZATION COMPARISON BETWEEN TWO CAD SYSTEMS (COMBO CAD STUDY) IN REAL-LIFE ENDOSCOPY: AN INTERIM ANALYSIS

Authors Hassan C.¹, Spadaccini M.¹, Alfarone L.¹, Da Rio L.¹, Solitano V.¹, Ferretti S.¹, Poletti V.¹, Maselli R.¹, Carrara S.¹, Galtieri P.A.¹, Pellegatta G.¹, Fugazza A.¹, Anderloni A.¹, Terracciano L.M.², Spaggiari P.¹, Repici A.¹

Institutes 1 Humanitas Research Hospital, Department of Gastroenterology and Hepatology, Rozzano, Italy; 2 Humanitas Clinical and Research Center, Department of Pathology, Milano, Italy

DOI 10.1055/s-0042-1744983

Aims Implementation of clinical strategies based on optical diagnosis of <5 mm rectosigmoid polyps may lead to a substantial saving of economic and financial resources. Artificial intelligence(AI)has the potential to help in making the characterization process more reliable and objective. We compared the performances in rectosigmoid polyp characterization of two recently approved CADx systems(CAD-EYE,CAD A,and GI-Genius,CAD B)working in blue- and white-light.

Methods We performed an interim analysis of a prospective observational study(NCT05141409)enrolling all average-risk patients who underwent screening or surveillance colonoscopy from November 2021. All recto-sigmoid diminutive lesions(≤ 5 mm)were included and categorized as adenoma or non-adenoma by the endoscopist using both white-light and chromoendoscopy(BLI) (Endoscopist-alone performance).Then, the output automatically provided by the two AI appeared on two different screens(AI-alone performance)in white(B) and blue light(A). The final diagnosis provided by endoscopist combining the results of the first two steps were reported as AI-assisted diagnosis. Concordance and comparison between the AI-alone performance of the two CADx were assessed as primary outcome.

Results One-hundred-twenty-five diminutive rectosigmoid polyps(51adenomas,40.8%,and 74hyperplastic,59.2%)were included in the final analysis. The diagnostic sensitivity/specificity/Negative Predictive value of the CAD A was 92.2 % / 88.7 % / 97.2 %, and it was 96.1 % / 86.0 % / 97.1 % for CAD B, respectively. No difference in overall accuracy and NPV between the two systems was found(p value:0.9).The concordance rate between the systems were 92 %. The diagnostic accuracy of endoscopist before and after AI-assistance was 91.2 %and92.8 %.

Conclusions The NPV for rectosigmoid diminutive lesions was higher than the PIVI for both of the machines, irrespectively of the need of advanced imaging.

eP131 ASYMMETRICALLY DOSED 1L PEG + ASC DEMONSTRATES HIGH-QUALITY CLEANSING EFFICACY COMPARED WITH COMPARATOR SOLUTIONS ACROSS CLINICAL TRIALS

Authors Poppers D.¹, Allen C.², Sharma P.^{3, 4}, Hassan C.⁵

Institutes 1 NYU Langone Health, New York, United States; 2 Salix Pharmaceuticals, Bridgewater, United States; 3 Veterans Affairs Medical Center, Kansas City, United States; 4 University of Kansas Medical Center, Kansas City, United States; 5 Poliambulatorio Nuovo Regina Margherita, Roma, Italy

DOI 10.1055/s-0042-1744984

Aims High-quality (HQ) cleansing may be associated with more favourable colonoscopy outcomes, such as improvement in adenoma detection rate, than adequate level cleansing. In randomised trials, 1L polyethylene glycol and ascorbate (asymmetrically dosed PEG + ASC, or ner1006) showed additional efficacy in achieving HQ cleansing compared with 2L PEG + ASC, trisulphate or sodium picosulphate (1,2). The aim of this study was to indirectly compare the HQ cleansing efficacy of 1L PEG + ASC with comparators including 4L, 2L and lower volume preparations.

Methods We conducted a systematic literature search for all reported data on HQ cleansing efficacy of 1L PEG + ASC and comparator solutions. HQ cleansing success was defined as stool-free cleansing of the overall colon using a validated cleansing scale assessed (as in clinical practice) by on-site colonoscopists. Included were the Harefield Cleansing Scale, the Boston Bowel Preparation Scale and the 5-point Aronchick scale. Mixed treatment comparison (MTC) analyses were conducted in a Bayesian framework (with the Just Another Gibbs sampling algorithm), pooling both direct and indirect evidence from randomised controlled trials. Binary outcomes were analysed as odds ratios using a fixed effects model performed using the surface under the cumulative ranking curve.

Results Final MTC analysis included 20 randomised controlled trials, involving 6450 patients. 1L PEG + ASC as morning-only or split dosing achieved HQ cleansing more frequently than 2L PEG + bisacodyl (Table 1).

► Table 1

1L PEG + ASC vs comparators	Median odds ratio	95% confidence interval	
1L PEG + ASC 1D vs. 2L PEG + bisacodyl	8.403	4.558	15.568
1L PEG + ASC 1D vs. sodium phosphate	3.053	1.706	5.478
1L PEG + ASC 2D vs. 2L PEG + bisacodyl	10.622	6.129	18.536
1L PEG + ASC 2D vs. sodium phosphate	3.864	2.259	6.618

Conclusions 1L PEG + ASC consistently, and reproducibly, achieved HQ cleansing across multiple clinical trials.

References

- Repici A, et al. Dig Liver Dis. 2019;51(12):1671–1677.
- Repici A, et al. Gastrointest Endosc. 2021;94(4):823–831.e9.

eP132 CONTRAST MEDIUM INJECTION THROUGH HOT-AXIOS STENT: SMALL TRICK, GREAT SAFETY FOR ENDOSCOPIC ULTRASOUND-GUIDED GASTROENTEROSTOMY (PRELIMINARY RESULTS)

Authors Heilmaier M.¹, Schmid R.M.¹, Abdelhazef M.¹

Institute 1 Technical University Munich, Gastroenterology, München, Germany

DOI 10.1055/s-0042-1744985

Aims Endoscopic ultrasound-guided gastroenterostomy (EUS-GE) is a promising technique for management of gastric outlet obstruction. One of the major challenges regarding this technique is the loss of sonographic visualization when puncturing the gastric and intestinal wall with the electrocautery tip of the Hot-AXIOS-stent. This leads to increased risk of stent misdeployment and thus to complications like peritonitis. Injection of contrast medium through the wire-channel of the stent under fluoroscopic guidance can confirm correct positioning of the stent in the small intestine after the puncture and before it is deployed. The aim of this study was to assess the feasibility and efficacy of the technique.

Methods The data of all subjects who underwent EUS-GE with injection of contrast medium were retrospectively collected and analyzed. Stent deployment was only executed after fluoroscopic confirmation of the correct position of the stent. The primary endpoint was to assess the technical success of this technique, secondary endpoint to assess the clinical success.

Results A total of 32 patients were included in this study so far. In all procedures the injection of contrast medium through the stent and hence fluoroscopic position control was possible. The technical success rate was 100 % (n = 32). Clinical success was achieved in 90,6 % (n = 29). No major or minor complications were encountered during this study.



► Fig. 1

Conclusions Injection of contrast medium through the Hot-AXIOS stent after the puncture to confirm the correct position before deployment is a new and simple technique, making EUS-GE more effective and safe.

eP133 REAL-TIME COMPUTER-AIDED DIAGNOSIS SYSTEM FOR OPTICAL DIAGNOSIS OF DIMINUTIVE COLORECTAL POLYPS INCLUDING SESSILE SERRATED LESIONS: A PROSPECTIVE, MULTICENTER STUDY WITH BENCHMARKING AGAINST SCREENING ENDOSCOPISTS

Authors Houwen B.B.¹, Hazewinkel Y.², Giotis I.³, Vleugels J.L.⁴, Mostafavi N.S.⁴, van Putten P.⁵, Fockens P.¹, Dekker E.^{1,6}

Institutes 1 Amsterdam Gastroenterology Endocrinology Metabolism, Amsterdam University Medical Centres, location Academic Medical Center, University of Amsterdam, Gastroenterology and Hepatology, Amsterdam, Netherlands; 2 Radboud University Nijmegen Medical Centre, Radboud University of Nijmegen, Gastroenterology and Hepatology, Nijmegen, Netherlands; 3 ZiuZ Visual Intelligence, Gordeijk, Netherlands; 4 Amsterdam Gastroenterology Endocrinology Metabolism, Amsterdam University Medical Centres, location Academic Medical Center, University of Amsterdam, Department of Gastroenterology and Hepatology, subdivision statistics, Amsterdam, Netherlands; 5 Medisch Center Leeuwarden, Gastroenterology and Hepatology, Leeuwarden, Netherlands; 6 Bergman Clinics Maag & Darm Amsterdam, Amsterdam, Netherlands

DOI 10.1055/s-0042-1744986

Aims We aimed to develop and validate a robust computer-aided diagnosis (CAD) system, designed to use in real-time colonoscopy, to improve the accuracy of endoscopic characterization of diminutive polyps, including sessile serrated lesions (SSLs).

Methods We developed a CAD system (POLyp Artificial Recognition [POLAR]) to characterize diminutive colorectal polyps during live endoscopy, using a maximum of three non-magnified narrow-band imaging images. For pre-training the Microsoft-COCO dataset with a variety of object images (>300k) was used. For training, the prospectively collected data from 8 hospitals were used (2.637 images from 1,339 polyps). For clinical validation, POLAR was tested during colonoscopies in a fecal immunochemical test (FIT)-screening setting, and compared with the performance of 20 endoscopists from 8 hospitals.

Primary outcome was the accuracy of differentiating neoplastic (i.e. adenomas, SSLs) from non-neoplastic (i.e. hyperplastic polyps) diminutive polyps by POLAR, compared with the accuracy of endoscopists. Histopathology served as reference standard.

Results During clinical validation, a total of 429 diminutive polyps detected in 195 FIT-positive patients were included for analysis. POLAR differentiated neoplastic from non-neoplastic lesions with 79 % accuracy, 89 % sensitivity and 37 % specificity, while endoscopists achieved 83 % accuracy, 93 % sensitivity, and 44 % specificity. No significant difference was observed in optical diagnosis accuracy between POLAR and endoscopists ($P = .07$). Success rate for acquiring a histological prediction by POLAR was 98 %.

Conclusions We developed, validated, and benchmarked a trustworthy CAD system for optical diagnosis of diminutive polyps during real-time colonoscopy. The system differentiated neoplastic from non-neoplastic diminutive polyps with an accuracy comparable to screening endoscopists, with near-perfect technical efficacy.

eP134 'DIRECT ACCESS' ENDOSCOPY – CAN WE REDUCE OUTPATIENT BURDEN EVEN FURTHER?

Authors Hutchesson L.¹, Ainsworth L.¹, McRobbie H.¹, Patel R.¹

Institute 1 Lakes DHB, Rotorua, New Zealand

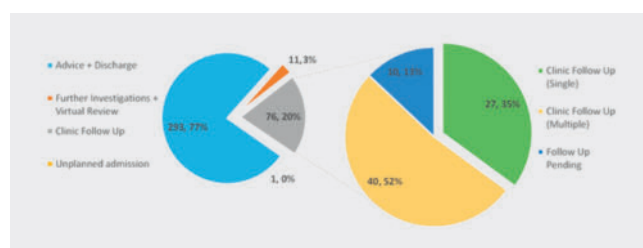
DOI 10.1055/s-0042-1744987

Aims 'Direct access' endoscopy (DAE) allows patients to be triaged straight to gastroscopy or colonoscopy prior to seeing a specialist in order to facilitate an efficient diagnosis and treatment plan. Concerns remain about DAE contributing to an increase in routine clinic review that follows procedures, and thus adding strain to an already over-burdened outpatient service. We aimed to review the outcomes of patients undergoing DAE, specifically to assess the proportion resulting in avoidable outpatient appointments.

Methods Retrospective review using a Decision Report Tool query of all DAE patients at Lakes DHB, which serves a population of around 116,000, between April 2020 and March 2021. DAE outcomes were extracted from reports and reviewed by a single author who categorised the main 'recommendation'.

Results 383 DAE patients (Median age 59 (IQR 44 – 71), 219 Female (57.2 %) included. Distribution of procedures: 258 Gastroscopy (67.4 %), 75 Flexi Sig/Colonoscopy (19.6 %), 50 Bi-directional endoscopy (13.1 %).

7.0 % of all patients undergoing DAE had a single outpatient appointment (25 in-person and 2 telephone) before being discharged to the community.



► Fig. 1

Conclusions One in five patients undergoing DAE return to clinic after the procedure indicating effectiveness of the initial triaging pathway and post-endoscopy management plans. A third of patients that have follow up are only seen once. Face to face follow ups could be reduced further to 1 in 8 patients by introducing a 'one stop shop' review at time of endoscopy and considering remote virtual consultation as an alternative.

eP135 APPLICABILITY AND EFFECTIVENESS OF ADVANCED ENDOSCOPIC BALLOON-TYPE IRREVERSIBLE ELECTROPORATION CATHETER ON THE ESOPHAGUS: PRECLINICAL ANIMAL PILOT STUDY

Authors Jeon H.J.¹, Choi H.-S.², Kim S.H.², Lee K.W.², Bang E.J.², Park G.², Park J.Y.², Sim J.Y.², Lee J.M.², Kim E.-S.², Keum B.², Jeon Y.-T.², Chun H.J.²

Institutes 1 Han Jo Jeon, Seoul, Korea, Republic of; 2 Korea University College of Medicine, Seoul, Korea, Republic of

DOI 10.1055/s-0042-1744988

Aims The irreversible electroporation (IRE) is a new destructive technique that removes the undesirable tissue by applying an electric field. Thus, the aim of the present study is to demonstrate the feasibility and applicability of tissue destruction in the esophagus by applying a newly designed endoscopic balloon-type IRE catheter.

Methods The electrical field with temperature generated during ablation at 1500V and 2000V with 40 pulses in the esophagus were simulated using COMSOL Multiphysics. A balloon catheter was manually manipulated into the esophagus along the 0.035-inch Jagwire™. The fluoroscopy with contrast medium was employed to establish deployment. Following ablation of the esophagus sequentially, Interruptions of ablations were recorded. Finally, the pigs were sacrificed 24 hours later and then histologic evaluation including H&E and TUNEL assay was performed.

Results As a result of COMSOL simulation, it is estimated that the heat, approximately 43°C was observed at the edge of the electrodes, and the other areas of electrodes were normal during ablation at 1500V with 40 pulses. Fluoroscopy and endoscopy showed that the balloon catheter was not adjacent to the heart and blocked the lumen of the esophagus. Balloon-type endoscopic IRE catheter withstood muscle contractions during ablation and delivered all electrical energy. A total of 24 ablations were performed in 6 pigs, and the success rate of balloon catheter was 91.7% (11/12). TUNEL assay represented stained brown nuclei, which defer apoptosis.

Conclusions The IRE balloon-type catheter demonstrated applicability and effectiveness in the esophagus and showed successful ablation results.

eP136 ARGON PLASMA COAGULATION: IS IT SAFE WHEN MANAGED AS A HIGH BLEEDING RISK PROCEDURE?

Authors João M.¹, Silva A.², Alves S.¹, Lopes S.², Areia M.¹, Brito D.¹, Elvas L.¹, Saraiva S.¹, Narra Figueiredo P.², Cadime A.T.¹

Institutes 1 Portuguese Oncology Institute of Coimbra, Gastroenterology, Coimbra, Portugal; 2 Centro Hospitalar e Universitário de Coimbra, Gastroenterology, Coimbra, Portugal

DOI 10.1055/s-0042-1744989

Aims Argon plasma coagulation (APC) is an ablative therapy used for a wide variety of indications throughout the gastrointestinal tract. There are no data on continued use of antithrombotics with respect to the risk of bleeding after APC. Therefore, current ESGE guideline does not provide any guidance in this regard. This study aimed to assess post-procedure bleeding risk and to identify its risk factors.

Methods Multicentre retrospective cohort study including consecutive patients submitted to APC between November/2019 and November/2021. Antithrombotic therapy was managed as a high-risk procedure. Clinically significant post-procedure bleeding: haemoglobin value fall > 2g/dL, blood transfusion or unplanned hospital admission.

Results Included 121 procedures in 99 patients [male:67 (67.8%); median age: 76 (68-80) years]. The main indications for APC were angiodysplasia (62%) and radiation proctopathy (38%) and median power used was 35 (25-40) watts. A total of 35 (36%) patients were under antithrombotic therapy (antiplatelet agents- 17%; anticoagulants- 19%). Post-APC bleeding was reported in 5 procedures (4%). Bleeding was clinically significant in 3 of the 5 cases and was

successfully treated in all events with clips with or without adrenaline. In multivariate analysis, risk factors for post-APC bleeding were anticoagulant therapy (OR: 3.5; 95% CI: 1.1-30) and power < 20 watts (OR: 12; 95% CI: 1.1-99). Antiplatelet agents use was not associated with post-APC bleeding (P=0.172).

Conclusions Post-APC bleeding was reported in 4% of cases, being higher for patients under anticoagulant therapy and lower APC power. Our results favour APC classification as a high-risk procedure for bleeding.

eP137 THE EFFECT OF ORAL SIMETHICONE IN A BOWEL PREPARATION IN A COLORECTAL CANCER SCREENING COLONOSCOPY SETTING: AN ENDOSCOPIST-BLINDED RANDOMIZED CONTROLLED TRIAL INTERIM ANALYSIS

Authors João M.¹, Alves S.¹, Areia M.¹, Elvas L.¹, Brito D.¹, Saraiva S.¹, Cadime A.T.¹

Institute 1 Portuguese Oncology Institute of Coimbra, Gastroenterology, Coimbra, Portugal

DOI 10.1055/s-0042-1744990

Aims Current ESGE guideline suggests adding oral simethicone to bowel preparation for colonoscopy. However, its effect on key quality indicators for screening colonoscopy remains unclear. The primary aim was to assess the rate of adequate bowel preparation regarding bubbles, in split-dose high-volume polyethylene glycol (PEG), with or without simethicone. Secondary aims included adenoma detection rate (ADR), caecal intubation rate (CIR), intraprocedural use of simethicone and patient's compliance.

Methods Endoscopist-blinded, randomized controlled trial, included patients scheduled for colonoscopy after a positive faecal immunochemical test. Computer-generated randomization and opaque envelope concealed allocation. Patients randomly assigned to: PEG split-dose (group A) or PEG split-dose plus 500mg oral simethicone (group B). Quality preparation assessed by a bubble scale in 5 segments (0-perfect, 15-worse). Boston Bowel Preparation Scale (BBPS), ADR, CIR, intraprocedural use of simethicone and patient's compliance were recorded.

Results We included 152 and 110 patients in groups A and B, respectively. Comparing groups A- PEG vs. Group B-PEG + Simethicone, the bubble scale score was significantly lower in group B (2 vs. 0, P<0.01) and also the intraprocedural use of simethicone (33.6% vs. 8.2%; P<0.01). No significant differences between groups were seen regarding adequate bowel preparation rate (92.7% vs. 96.4%; P=0.21), ADR (59.2% vs. 58.2%; P=0.87), CIR (94.7% vs. 98.2%, P=0.15) and patient's compliance (8 vs. 8, P=0.9).

Conclusions Adding oral simethicone to a split bowel preparation provided better visualization regarding bubbles and less intraprocedural use of simethicone with similar patient compliance but no further improvement in quality of preparation or ADR.

eP138 TRANSFERABILITY OF A CONVOLUTIONAL NEURAL NETWORK TO CHARACTERISE COLORECTAL POLYPS

Authors Kader R.^{1,2}, Mejias A.³, Shahraz I.^{1,2}, Hebbar S.³, Brandao P.³, Ahmad O.², Hussein M.², Toth D.³, Vega R.^{4,2}, Seward E.^{4,2}, Kohoutova D.⁵, Rejchrt S.⁵, Bures J.⁵, Mountney P.³, Stoyanov D.^{1,2}, Lovat L.B.^{1,2,4}

Institutes 1 University College London (UCL), Wellcome/EPSCRC Centre for Interventional and Surgical Sciences (WEISS), London, United Kingdom; 2 UCL, Division of Surgery and Interventional Sciences, London, United Kingdom; 3 Odin Vision, London, United Kingdom; 4 University College London Hospital, London, United Kingdom; 5 2nd Department of Internal Medicine-Gastroenterology, Charles University, Faculty of Medicine in Hradec Kralove, University Hospital, Sokolska, Hradec Kralove, Czech Republic; 6 The Royal Marsden Hospital NHS Foundation Trust, London, United Kingdom

DOI 10.1055/s-0042-1744991

Aims There is a lack of studies evaluating the transferability of polyp characterisation artificial intelligence systems to different populations from the institution where the training data was collected.

We aimed to train a convolutional neural network (CNN) to characterise colorectal polyps as adenoma and non-adenoma using data from two institutions (UK, Czech Republic) and to assess its transferability to a new patient population (Spain).

Methods High-quality and moderate-quality images in narrow-band imaging (NBI) and NBI-Near Focus were annotated with bounding boxes around polyps and labelled with histopathology. These were referenced as the gold standard. We developed a ResNet-101 CNN using 16,832 frames from 229 polyp videos (London, UK) and 451 still images from 266 polyps (Hradec Kralove, Czech Republic).

We assessed the CNN against two internal and one external dataset (Table 1); (1) Test-set I (London), consisted of 157 polyp videos (111 diminutive), including 14,320 video frames (Olympus 260 + 290) (2) Test-set II (Hradec Kralove) consisted of 250 polyps (125 diminutive), including 487 still frames (Olympus 180 + 190) (3) Test-set III (Basque), the publicly accessible PICCOLO dataset, consisted of 53 polyps, including 855 frames (Olympus 190).

► Table 1

Polyps	Test-set I (London, UK)	Test-set II (Hradec Kralove, Czech Republic)	Test-set III (Basque, Spain)	Total
Adenomas	95	167	35	297
Hyperplastic	35	52	17	104
Sessile serrated lesions/ Traditional serrated adenomas	27	31	1	59
Total number of polyps (frames)	157 (14,320)	250 (487)	53 (855)	460 (15,662)

Results On the per-frame analysis, the sensitivity for adenoma characterisation was 92% in test-set I and 90% in test-set II, 89% and 85% specificity, and 96% and 93% area under a curve (AUC). For the external test-set III, the CNN characterised adenomas with 86% sensitivity, 98% specificity and 99% AUC.

Conclusions A CNN trained using data from two nationalities transferred well to an external patient population.

eP139 CORRELATION OF FINDINGS OF COLITIS ON CT COMPARED TO COLONOSCOPY

Author [Kahn T.¹](#)

Institute 1 University of Cape Town, Groote Schuur Hospital, Medical Gastroenterology, Cape Town, South Africa

DOI 10.1055/s-0042-1744992

Aims Colonic wall thickening ("colitis") is often reported on CT scans and poses a dilemma on whether colonoscopy is required. Previous studies show that CT "colitis" has a correlation of 69% with abnormal colonoscopic findings. We aimed to correlate CT findings of colitis with colonoscopy findings.

Methods A retrospective review of abdominal CT scans performed during 2019 was conducted. Those with "colitis" were included. Analysis of demographics, endoscopy reports and folders was undertaken to assess correlation with endoscopy findings.

Results 69 patients had colitis on CT scan. 51% were males, mean age was 46 years (SD ± 15.7). The median time interval between imaging and colonoscopy was 5 days (IQR = 3-13). Primary indications for CT scan were abdominal pain (56.5%), diarrhoea (20.2%), looking for sepsis (11.5%) and rectal bleeding (2.9%). Most common sites of radiological disease were pancolitis (24.6%), recto-sigmoid (23.1%) and ascending colon (18.9%). 55% proceeded to colonoscopy, where colitis was noted in 63.1% of cases. The most common locations of endoscopic colitis were recto-sigmoid (41.3%) and a pancolitis (31%). There was no correlation between disease location radiologically and endoscopically ($r = 0.34$, $p = 0.065$). Similarly, there was no correlation between CT indication and endoscopic colitis ($r = 0.038$, $p = 0.891$) or time of colonoscopy ($r = 0.092$, $p = 0.500$). 26% of the cohort had Inflammatory Bowel Disease.

Conclusions Endoscopists are often faced with the dilemma of whether to proceed with colonoscopy on patients with radiological colitis. This data showed no correlation between CT indication or findings with colonoscopic findings. Therefore, although this is a small study, the need for colonoscopy should be individualized.

eP140 SINGLE BALLOON ENTEROSCOPY – FIRST TERTIARY CARE HOSPITAL EXPERIENCE IN PAKISTAN

Authors [Karim M.M.¹](#), [Ismail F.¹](#)

Institute 1 Aga Khan University Hospital, Section Gastroenterology

Department of Medicine, Karachi, Pakistan

DOI 10.1055/s-0042-1744993

Aims The aims of study to investigate the indications, safety, and clinical yield of Single Balloon Enteroscopy (SBE) and determine its effect on disease outcome.

Methods A retrospective, descriptive study was conducted at a tertiary care hospital in Karachi, Pakistan. Medical records of all patients mostly (≥ 18 years) who underwent SBE between July 2013 and August 2021 were reviewed. Data on patient demographics, enteroscopy details, hospital course, and clinical outcomes were collected.

Results 57 patients were included (54.4% male, mean age 50.0 ± 17.4 years), predominant comorbid were HTN 21 (36.8%) and DM 16 (28.1%). Obscure gastrointestinal bleed (38.6%) was the most common indication for enteroscopy, followed by chronic diarrhea (22.8%) and unexplained Anemia (12.3%). A majority of procedures were performed as an outpatient in the endoscopy suite (89.5%) under monitored anesthesia care (94.7%). The most common pathological findings were inflammation and ulcerations (45.6%), followed by vascular malformations (22.8%) and space-occupying lesion 11 (19.3%) where-as normal examination was seen in (31.6%) patients. Most procedures were diagnostic (89.5%) and were completed without any complications (98.3%). As a result of the enteroscopy procedure, 73.2% of patients had a change in diagnosis and/or management.

Conclusions SBE is a suitable modality and effective viable technique for investigating diseases in the small bowel. It is shown to be technically efficient, easy to perform, reasonably safe, and is associated with high diagnostic and therapeutic yield.

eP141 REVIEW OF A SINGLE MONTH OF COLONOSCOPIES IN A SECONDARY HOSPITAL IN THE EAST OF IRELAND

Authors [Kinsella C.¹](#), [Kahn S.¹](#), [O'Donovan N.¹](#), [Ryan C.¹](#)

Institute 1 Naas General Hospital, Gastroenterology, Co. Kildare, Ireland

DOI 10.1055/s-0042-1744994

Aims The aims of the study was to examine:

- 1) whether or not patients over 75 had poorer prep than younger patients and
- 2) how many incomplete colonoscopies were performed in a single month.

Methods A retrospective study of 100 colonoscopies was performed. Patients were identified through HIPE records. Endorad was then employed to review reports and collect the data.

Results The study involved a total of 100 colonoscopies.

51 male and 49 female.

28 patients were aged over 75 (16 female and 12 male) with a mean age 81.

9 of the 28 patients (32 %) had prep that was described as poor.

4 of the 28 patients (14 %) were inpatients. 3 of the 4 inpatients had poor prep (75 %).

3 (11 %) of the patients had incomplete colonoscopy (2 incomplete due to looping, 1 due to prep)

In comparison 72 patients were less than 75 years of age.

39 male, 33 female with a mean age 53.

14 had poor prep (19 % vs 32 % in the older age group)

1 of the poor prep cases was an inpatient.

1 patient in the less than 75 year age group had an incomplete scope (1.3 % vs 11 %). The reason for this incomplete scope was poor prep. This was an outpatient case.

Conclusions In this review colonoscopies in a single centre, patients over 75 were more likely to have poorer prep than their younger counterparts, they were more likely to get inpatient colonoscopy. Finally older patients had a higher rate of incomplete colonoscopies than their younger counterparts.

eP142 GASTROSCOPY REFERRALS IN PRIMARY CARE MEET APPROPRIATE CRITERIA IN ONLY HALF OF REFERRALS

Authors Koggel L.M.¹, Lantinga M.A.¹, Büchner F.L.², Drenth J.P.H.¹, Frankema J.³, Heeregrave E.³, Heringa M.⁴, Numans M.E.², Siersema P.D.¹

Institutes 1 Radboud University Medical Center, Gastroenterology, Nijmegen, Netherlands; 2 Leiden University Medical Center, Public Health and Primary Care, Leiden, Netherlands; 3 The Dutch National Health Care Institute, Diemen, Netherlands; 4 SIR Institute for Pharmacy Practice and Policy, Leiden, Netherlands

DOI 10.1055/s-0042-1744995

Aims Annually, high numbers of diagnostic gastroscopies are performed. It has been suggested that up to 40 % of gastroscopy referrals by general practitioners (GPs) do not meet referral criteria. In this study, we evaluated the appropriateness of gastroscopy referrals by GPs in daily clinical practice.

Methods Patients referred for gastroscopy between 2016 and 2018 were identified in a regional primary care patient database. Demographics, symptoms, and medication use were examined by reviewing GP records. Appropriateness of gastroscopy referral was determined according to the Dutch College of General Practitioners guideline 'Upper gastrointestinal symptoms'.

Results A total of 148,926 adult patients from 27 primary care practices were included. We identified 153 patients referred for gastroscopy between 2016 and 2018. Median age was 55 years (IQR 42-66) of whom 67 % were female. At time of referral, most patients (n = 141, 92 %) already used acid suppressants and more than half (n = 89, 58 %) had been tested for *Helicobacter pylori*. In more than two-third (69 % (n = 106)) duration of gastric symptoms was < 3 months. According to the guideline, endoscopy referral was inappropriate in 43 % (n = 66), with 74 % (n = 49) of patients being symptomatic for < 3 months. In 80 % (n = 70), the gastroscopy did not reveal clinically significant findings and 54 % (n = 28) of patients were subsequently referred to a gastroenterologist.

Conclusions Almost half of gastroscopy referrals were considered inappropriate. Although the majority of gastroscopies showed nonsignificant findings, still many patients were referred to a gastroenterologist afterwards. We advocate improved patient counseling to avoid inappropriate gastroscopy referrals, especially in patients with a shorter duration of symptoms.

eP143 REAL-TIME ARTIFICIAL INTELLIGENCE (AI)-AIDED ENDOSCOPY IMPROVES ADENOMA DETECTION RATES EVEN IN EXPERIENCED ENDOSCOPISTS – A COHORT STUDY IN SINGAPORE

Authors Koh F.¹, Ladlad J.¹, Lin C.-L.², Teo E.-K.^{2,3}, Foo F.-J.^{1,4}, Endoscopy Centre H SK

Institutes 1 Sengkang General Hospital, General Surgery, Singapore, Singapore; 2 Sengkang General Hospital, Gastroenterology and Hepatology, Singapore, Singapore; 3 Sengkang General Hospital, Chief Executive Officer, Singapore, Singapore; 4 Sengkang General Hospital, Endoscopy Centre, Singapore, Singapore

DOI 10.1055/s-0042-1744996

Aims Colonoscopy is a mainstay to detect premalignant neoplastic lesions in the colon. Real-time Artificial Intelligence (AI)-aided colonoscopy purportedly improves the polyp detection rate, especially for small flat lesions. The aim of this study is to evaluate the performance of real-time AI-aided colonoscopy in the detection of colonic polyps.

Methods A prospective cohort study was conducted in a single institution in Singapore. All real-time AI-aided colonoscopies performed by specialist-grade endoscopists were anonymously recorded from July – September 2021 and were reviewed by 2 independent authors (FHK, JL). Sustained detection of an area by the program was regarded as a "hit". All histology for the polypectomies were reviewed to determine adenoma detection rate (ADR). Performances by individual endoscopist with AI were compared against their performance preceding the introduction of AI endoscopy.

Results A total of 24 (82.8 %) endoscopists participated with 18 (62.1 %) performing ≥ 5 AI-aided colonoscopies. Of the 18, 72.2 % (n = 13) were surgeons and 77.8 % (n = 14) were consultant-grade. All AI-aided colonoscopies regardless of indications were included which would provide a realistic and generalisable representation of performance. During that 3-month period, 498 "hits" encountered in 298 colonoscopies. Polypectomies were performed for 83.5 % and ADR was 68.5 %. Of the adenomas excised, 14 (6.6 %) were sessile serrated adenomas. Of the 18 endoscopist who performed ≥ 5 AI-aided colonoscopies, 13 (72.2 %) had an improvement of ADR compared to their polypectomy rate before the introduction of AI.

Conclusions Real-time AI aided colonoscopy have the potential to improved ADR even for experienced endoscopists and would therefore, improve the quality of colonoscopy.

eP144 FELLOW EXPERIENCES WITH ENDOSCOPY SIMULATION BEFORE AND DURING THE COVID-19 PANDEMIC: AN INTERNATIONAL SURVEY

Authors Lee B.¹, Lin E.², Karnik N.³, Williams R.⁴, Popov V.⁴, Boskovski I.⁵, Maida M.⁶, Gkolfakis P.⁷, Arvanitakis M.⁷, Ong Ming Liang A.⁸, De Lusong M.A.⁹, Vignesh S.³

Institutes 1 New York University, New York, United States; 2 University of California Los Angeles, Los Angeles, United States; 3 SUNY Downstate Health Sciences University, New York, United States; 4 NYU, New York, United States; 5 Fondazione Policlinico Universitario Agostino Gemelli IRCCS, Rome, Italy; 6 Presidio Ospedaliero Sant Elia, Caltanissetta, Italy; 8 Hopital Erasme, Bruxelles, Belgium; 7 Duke-NUS, Singapore, Singapore; 9 University of the Philippines, Quezon City, Philippines

DOI 10.1055/s-0042-1744997

Aims We aimed to evaluate the current state of endoscopy training internationally in the wake of the pandemic as perceived by trainees.

Methods This cross-sectional study utilized a survey composed of 21 questions eliciting demographic data, COVID-19-related training experiences, and experience with SBT. This survey was distributed internationally (USA, Canada, EU, Philippines, Singapore) to gastroenterology trainees between August 2021 to October 2021.

Results The questionnaire was completed by 182 fellows, with 55 (30.2%) from the USA and 127 (69.8%) from other countries. A majority (69.2%) found endoscopy training in general to be negatively impacted. Of those who reported a negative impact from the pandemic, 75.0% attributed it to a decline in endoscopic volume. Overall, 47.2% of respondents believed COVID-19 will negatively affect their endoscopic proficiency upon fellowship completion. A total of 71 respondents (39.0%) had experienced SBT before or during fellowship, with 27 from the USA and 44 from other countries. A majority (52.1%) found SBT appropriate to their level of training. Respondents believed increased access to SBT (43.7%) and mentored training (54.9%) would improve the experience.

Questions	Number of Responses		
	USA (n = 55)	Other Countries (n = 127)	Total (n = 182)
1 Please select the year of fellowship training you are in:	55	127	182
2 Do you feel your endoscopy training has been negatively impacted since the COVID-19 outbreak?	55	127	182
3 Barriers as a result of COVID (PPE, infection control precautions) have adversely affected the quality of endoscopic instruction.	55	127	182
4 Participation in the following procedures has been reduced since the COVID-19 outbreak (select all that apply):	54	126	180
5 Based on your observation, what are the reasons for the continued negative impact on endoscopy training caused by COVID-19? Check all that apply.	55	126	181
6 COVID-19 will negatively affect my endoscopy proficiency upon completion of GI fellowship	55	127	182
7 Do you feel the impact of COVID-19 on endoscopy training will continue for the next 1-2 years (long-term)?	55	127	182
8 Have you used simulation-based training tools for endoscopy during or prior to GI fellowship training?	54	126	180
9 Which simulation-based training tool(s) have you used? Select all that apply.	27	44	71
10 Please rate how helpful the following forms of simulation-based training are to improving endoscopic proficiency	27	44	71
11 Which of the following simulation-based training tools are you most familiar with?	27	44	71
12 If there is a particular device you have used most often, please provide the name:	7	12	19
13 Was the simulator-based training mentored by a faculty member?	27	44	71
14 Did you feel the lack of a mentor limited your learning with simulator-based training?	10	10	20
15 Did you feel that your mentor was helpful in teaching and guiding you with the simulator-based training?	17	33	50
16 Please rate how helpful the simulator was in improving the following endoscopy skills:	27	44	71
17 Which of the following best characterizes how easy/difficult you found the simulator training tool to be:	27	44	71
18 Which of the following factors do you think would enhance your experience with simulator-based training? Select all that apply.	27	44	71
19 Do you feel access to a mentor on a virtual platform (e.g. Zoom, WebEx) for simulator-based training would be helpful?	27	44	71
20 In which of the following domains do you feel additional endoscopy training videos and webinars would be helpful?	55	127	182
21 Please select which of the following gastroenterology trainee groups would benefit from simulation-based training in the COVID-19 era	55	127	182

► Fig. 1

Conclusions While current data supports the use of SBT early in training, the uptake before and during the COVID-19 pandemic remained low. Fellows perceive a negative impact of COVID-19 on their training and proficiency upon graduation. Decrease in endoscopic volume was reported as the main factor negatively impacting endoscopic training. This survey highlights the potential benefit of SBT with low case volumes and further prospective evaluation of SBT in achieving endoscopic competence.

eP145 SAFETY OF INDEPENDENT DISCHARGE POST- ENDOSCOPY WITH SEDATION

Authors Ng W.k.¹, Lim E.¹, Tan Q.r.¹, Sung Yi Sim E.¹, Lim P.y.¹

Institute 1 Tan Tock seng hospital, Singapore, Singapore

DOI 10.1055/s-0042-1744998

Aims To demonstrate that it is generally safe to allow patients to go home alone after receiving sedation.

Methods A retrospective review of a tertiary endoscopy center's database from January 2017 to June 2021, showed 7558 (20.1%) out of a total of 37601 patients, went home alone after receiving sedation during endoscopies. These patients were assessed to be suitable to go home alone. After the procedure, Post-Anaesthetic Discharge Scoring (PADSS)4 will be used to assess suitability for discharge. A telephone call will be made the following day to check on their wellbeing, focusing on calling patients with medical comorbidities, received more complex procedures or sedatives use. A review will be done for symptomatic patients to determine if the symptoms were likely related to sedation or endoscopy. Patients going home alone will be advised to take public transport home and not be allowed to drive home.

Results 2077/7558 (27.5%) patients discharged home alone were contacted [Table 2]. 27/2077 (2.4%) of them reported mild symptoms which were unlikely a result of them going home alone. No patient suffered any untoward complication. There seems to be an increasing trend in the percentage of patients preferring to go home alone from 2018 to 2021 (16.6% vs 23.4%).

Year	2017	2018	2019	2020	2021	Total
Total attendance	7493	10418	8804	7183	3703	37601
Total home alone (%)	1796 (24.0%)	1734 (16.6%)	1612 (18.3%)	1549 (21.6%)	867 (23.4%)	7558 (20.1%)
Sampled patients Contacted (%)	115 (6.4%)	557 (32.1%)	650 (40.3%)	541 (34.9%)	214 (24.7%)	2077 (27.5%)
Symptomatic (%)	2 (4.9%)	6 (2.7%)	13 (3.2%)	3 (0.9%)	3 (2.2%)	27 (2.4%)

► Fig. 1

Conclusions Allowing a select group of patients to return home alone post-sedation is safe, especially if good public transportation is available in a small country like Singapore. As the demand to return home alone seems to be increasing, this can be for suitable patients to reduce hardship and inconveniences for them

eP146 DISEASE AND NON-DISEASE-RELATED RISK FACTORS FOR INADEQUATE BOWEL PREPARATION IN PATIENTS WITH INFLAMMATORY BOWEL DISEASE: SHOULD THE STRATEGY BE DIFFERENT?

Authors Lima Capela T.^{1,2}, Macedo Silva V.^{1,2}, Freitas M.^{1,2}, Sousa Magalhães R.^{1,2}, Cúrdia Gonçalves T.^{1,2}, Dias de Castro F.^{1,2}, João Moreira M.^{1,2}, Cotter J.^{1,2}

Institutes 1 Hospital da Senhora da Oliveira, Gastroenterology Department, Guimarães, Portugal; 2 School of Medicine, University of Minho, Life and Health Sciences Research Institute (ICVS), Braga/Guimarães, Portugal
DOI 10.1055/s-0042-1744999

Aims Colonoscopy is of utmost importance in the management of inflammatory bowel disease (IBD). Most studies on inadequate bowel preparation (IBP) have not specifically evaluated the impact of IBD on the quality of bowel preparation. We aimed to identify disease and non-disease related factors for IBP in patients with IBD submitted to colonoscopy.

Methods Retrospective cohort-study which included adult IBD patients submitted to colonoscopy between 2016-2021. Patients' demographic, clinical, biochemical, and colonoscopy data were recorded. IBP was defined as a final Boston Bowel Preparation Scale ≤ 5 or ≤ 1 in at least one segment. A univariable

analysis tested the association between covariables and the outcome (IBP) in general and considering Crohn's disease (CD) and ulcerative colitis (UC) patients separately. Statistically significant variables were included in multivariable logistic binary regression.

Results Of 309 patients, 51 % (n = 158) had UC and 48.9 % (n = 151) had CD. Eighty-two patients (27 %) had IBP which was not significantly different between UC and CD patients (40 vs 42, p = 0.699, respectively). The presence of diabetes mellitus (OR 13.9 [95 % CI 1.388–139.624], p < 0.05) and antidepressant use (OR 4.1 [95 % CI 1.247–13.625], p < 0.05) were independently associated with IBP in general. In contrast, only previous history of IBP (OR 3.1 [95 % CI 1.184–8.271], p < 0.05) was independently associated with IBP in UC patients. Disease-related factors such as previous surgery, steroids, immunosuppressors, biologics and endoscopic activity were not associated with IBP.

Conclusions The presence of diabetes mellitus and antidepressant use are predictors of IBP for colonoscopy in patients with IBD. Disease-related factors seem to have no influence in the quality of bowel preparation suggesting that a specific approach is unnecessary in these patients.

eP147 DETAILED MATERIAL ANALYSIS OF COMMONLY USED ENDOSCOPY INSTRUMENTS

Authors López-Muñoz P.¹, Martín-Cabezuelo R.¹, Pons-Beltrán V.¹, Vilariño G.², Betín P.A.², Tort I.², Vidaurre A.², Lorenzo-Zúñiga V.¹

Institutes 1 University and Polytechnic La Fe Hospital / IISLaFe, Endoscopy Unit, Valencia, Spain; 2 Universitat Politècnica València, Center for Biomaterials and Tissue Engineering, Valencia, Spain

DOI 10.1055/s-0042-1745000

Aims Gastrointestinal endoscopy requires considerable amount of single-use consumable instruments and supplies. Details on the material composition of these single use instruments are not publicly available. There is a need for providing details about materials involved to estimate the environmental impact of endoscopes or instruments. We aimed to analyze detailed composition of materials of three commonly used instruments: biopsy forceps, polypectomy snares and hemostatic clips.

Methods Different instruments produced by three endoscopy product companies (A, B and C) for biopsy forceps and polypectomy snares and two companies (A and B) for hemostatic clips were selected. We analyzed in detail the chemical and thermal properties of packing, tip, body, and handle of each instrument using Fourier transform infrared spectroscopy (FTIR), energy dispersive X-Ray analysis (EDX) differential scanning calorimetry (DSC) and thermogravimetric analysis (TGA). Carbon footprint was measured by using OpenLCA software.

Results The major components of commonly used single-use instruments were identified mostly as plastic polymers and medical degree alloys (48 % metal, 52 % plastic). Detailed material analysis were: biopsy forceps (63.5 ± 5.2 g, 64 % metal, 41 % plastic); polypectomy snares (57.2 ± 19.5 g, 33 % metal, 67 % plastic); and hemostatic clips (84.4 ± 1.5 g, 43 % metal, 57 % plastic) (see Table 1). Carbon footprint varies from different commonly used endoscopic instruments.

► Table 1

Total weight (g) Instrument + packaging	Forceps 63.4 ± 5.2	Snares 57.2 ± 19.5	Clips 84.4 ± 1.5
Plastic (g)	22.7 ± 5.2	38.7 ± 19.5	48.1 ± 12.1
Metal (g)	40.8 ± 5.0	18.5 ± 16.4	36.6 ± 13.6
Plastic (%)	36	67	57
Metal (%)	64	33	43

Conclusions Describing the exact composition and carbon footprint of single-use endoscopy consumables should be provided by endoscopic companies for decision making progress in endoscopy units. Novel studies evaluating the possibility of reuse, recycle and developing greener ways to dispose consumables are needed to improve sustainability.

eP148 CARBON FOOTPRINT DETERMINATION OF SINGLE-USE ENDOSCOPE

Authors López-Muñoz P.¹, Martín-Cabezuelo R.¹, Pons-Beltrán V.¹, Vilariño G.², Betín P.A.², Tort I.², Vidaurre A.², Lorenzo-Zúñiga V.¹

Institutes 1 University and Polytechnic La Fe Hospital / IISLaFe, Endoscopy Unit, Valencia, Spain; 2 Universitat Politècnica València, Center for Biomaterials and Tissue Engineering, Valencia, Spain

DOI 10.1055/s-0042-1745001

Aims The current COVID-19 crisis has forced us to increase the presence of non-reusable instruments which makes mandatory to analyze our ecological footprint. Gastrointestinal endoscopy represents one of the largest procedure volumes of single-use consumables. One-time use endoscopes and duodenoscopes already exist and are gaining presence in the GI industry. We aimed to analyze carbon footprint of these instruments to determine its environmental effect.

Methods A disposable duodenoscope was selected for analysis and comparison with reusable ones. We analyzed in detail the chemical and thermal properties of these one-use endoscopes using Fourier transform infrared spectroscopy (FTIR), energy dispersive X-Ray analysis (EDX) differential scanning calorimetry (DSC) and thermogravimetric analysis (TGA). Carbon footprint was measured by using OpenLCA software.

Results The single-use duodenoscope major components are made of polymeric materials. Packaging comprises almost 75 % of its total weight (40 % of paper and 60 % of plastic). Carbon footprint varies from different commonly used endoscopic instruments.

Conclusions Increasing awareness of infectious diseases and risk of contamination has arisen due to COVID-19 pandemic. Usage of disposable endoscopes has trended upwards to mitigate the risk of contamination, mainly in immunocompromised patients. Knowing the exact composition and carbon footprint of manufacturing process of single use endoscopes is paramount to estimate the environmental impact before complete establishment in gastrointestinal endoscopy industry.

eP149 UTILITY OF CLINICAL AND VIROLOGICAL SCREENING STRATEGY FOR SARS-COV-2 INFECTION PRIOR TO SCHEDULED AMBULATORY DIGESTIVE ENDOSCOPY

Authors López-Serrano A.^{1,2}, Algarra A.¹, Díaz R.¹, Voces A.¹, Lorente J.R.¹, Hervás J.¹, García C.¹, Valdepeñas L.¹, Machancoses A.¹, Paredes J.M.¹

Institutes 1 Hospital Universitari Dr. Peset, Gastroenterology Department, Valencia, Spain; 2 University of Valencia, Medicine Department, Valencia, Spain

DOI 10.1055/s-0042-1745002

Aims Screening for SARS-CoV-2 infection is currently recommended in patients undergoing endoscopic tests, especially in upper gastrointestinal tract. However, the scientific evidence is not high and there is no clear consensus on the method to be used (clinical and/or virological). The aim of the study was to assess the usefulness of SARS-CoV-2 screening by both clinical interview and virological study in outpatients undergoing oral digestive endoscopy.

Methods Retrospective study from prospective data including outpatients with low suspicion of COVID-19 infection after telephone clinical screening that were scheduled within 2–5 days for oral endoscopy, from February to September 2021. A nasal smear CRP test for infection by SARS-CoV-2 was requested in the previous 48 hours from all participants.

Results A total of 1203 patients were invited. 98 patients (8.1 %) did not attend virological screening. Finally, 1105 patients were included: 76 % men, mean age 71 years (minimum-maximum: 6-99 years). CRP was positive in 12 patients (1.1 %): 11 patients with cycle threshold (Ct) > 30 (including 4 patients affected from COVID19 in > 2 previous months). Two other patients with negative CRP reported possible recent contact with a COVID19 patient. Endoscopy was delayed in all of them, with negative CRP one month later and with trivial endoscopic findings.

Conclusions Clinical screening for SARS-CoV-2 infection prior to ambulatory scheduled endoscopic exploration may be an effective strategy and could prevent universal virological screening in asymptomatic patients undergoing gastrointestinal endoscopy.

eP150 SMALL BOWEL CLEANSING ASSESSMENT AND REPORT (SB-CLEAR): STANDARDIZING THE REPORT OF BOWEL PREPARATION'S QUALITY IN CAPSULE ENDOSCOPY

Authors Macedo Silva V.^{1,2,3}, Lima Capela T.^{1,2,3}, Freitas M.^{1,2,3}, Sousa Magalhães R.^{1,2,3}, Arieira C.^{1,2,3}, Xavier S.^{1,2,3}, Boal Carvalho P.^{1,2,3}, Rosa B.^{1,2,3}, Moreira M.J.^{1,2,2}, Cotter J.^{1,2,3}

Institutes 1 Hospital Senhora da Oliveira, Gastroenterology Department, Guimarães, Portugal; 2 School of Medicine, University of Minho, Life and Health Sciences Research Institute (ICVS), Braga, Portugal; 3 ICVS/3B's, PT Government Associate Laboratory, Braga / Guimarães, Portugal

DOI 10.1055/s-0042-1745003

Aims Small-bowel (SB) cleansing is crucial to assess reliability of capsule endoscopy (CE) findings. However, the existence of multiple grading scales for SB preparation in CE hampers their appliance in clinical practice. In 2020, Colon Cleansing Assessment and Report (CC-CLEAR) was created. We sought to validate an adapted version for evaluation of SB cleansing, aiming to standardize CE reporting regarding quality of preparation.

Methods For SB Cleansing Assessment and Report (SB-CLEAR), SB was divided into 3 tertiles, each being scored according to estimation of the percentage of visualized mucosa (0- < 50 %; 1- 50-75 %; 2- > 75 %; 3- > 90 %). Overall classification was a sum of each segment score, graded between excellent (8-9), good (6-7), and inadequate (0-5). Any segment scoring ≤ 1 resulted in inadequate overall classification. CE videos were prospectively evaluated and scored by 2 experienced CE readers blinded to each other. Interobserver agreement was assessed.

Results We included 52 CEs. Overall, SB-CLEAR classifications were: reader A – 30(57.7 %) excellent; 9(17.3 %) good; 13(25.0 %) inadequate; reader B – 33(63.5 %) excellent; 6(11.5 %) good; 13(25.0 %) inadequate. SB-CLEAR inter-observer agreement was very strong for each tertile (first tertile $r = 0.863$; second tertile $r = 0.865$; third tertile $r = 0.861$; $p < 0.001$), which resulted in overall excellent correlation when considering all tertiles ($r = 0.940$; $p < 0.001$). By applying final classifications of “inadequate”, “good” and “excellent”, correlation was still very strong ($r = 0.857$; $p < 0.001$).

Conclusions SB-CLEAR is an innovative and reproducible scale for evaluation of SB preparation quality in CE, with overall excellent inter-observer agreement. With CC-CLEAR, it may become a valuable tool to uniformize reporting of bowel preparation quality in CE.

eP151 FEASIBILITY OF UNRESTRICTED DIET VERSUS A 3-DAY LOW-RESIDUE DIET PRE-COLONOSCOPY AND IT IMPACT ON THE QUALITY OF THE BOWEL PREPARATION

Authors Machlab S.¹, Martínez-Bauer E.¹, López P.², Puig-Diví V.¹, Lira A.¹, Junquera F.¹, Ruiz P.³, Pujals M.d.M.³, Hernández L.¹, Selva A.², García B.¹, López B.¹, Vives J.¹, Frisancho E.¹, Fernández-Bañares F.³, Calvet X.¹, Campo R.¹

Institutes 1 Parc Taulí Hospital Universitari. Institut d'Investigació i Innovació Parc Taulí (I3PT). Facultat de Medicina. Universidad Autónoma de Barcelona, Digestive Endoscopy Unit, Sabadell, Spain; 2 Parc Taulí Hospital Universitari. Institut d'Investigació i Innovació Parc Taulí (I3PT). Facultat de Medicina. Universidad Autónoma de Barcelona, Clinical Epidemiology and Cancer Screening, Sabadell, Spain; 3 Hospital Universitari Mutua Terrassa, Gastroenterology Department, Terrassa, Spain

DOI 10.1055/s-0042-1745004

Aims To compare the effect of unrestricted diet versus a 3-day low-residue diet pre-colonoscopy in the quality of the bowel preparation

Methods A randomized, multicenter, researcher-blinded and parallel-group feasibility trial was performed to compare an unrestricted diet versus a 3-day low residue diet for colonoscopy preparation in individuals with positive fecal immunochemical test aged between 50 and 69 years, who participated in an organized colorectal cancer screening program, and without factors associated with poor bowel cleansing. The efficacy of the colon preparation was assessed using the Boston Bowel Preparation Scale during intubation and withdrawal. Secondary outcomes were: bowel exploration time, adenoma and polyp detection rates and preparation and diet tolerability.

Results A total of 102 individuals were randomized, with a mean age of 59.3 ± 5.5 years, 40,1 % were women. All participants in both groups had adequate preparations (Boston scores ≥ 2 in each segment). Adherence to the preparation was complete in most participants in both groups. No significant differences between groups were observed in withdrawal or cecal intubation times nor adenoma detection rate. The unrestricted diet was significantly better tolerated than the 3-day low residue diet ($p < 0.01$). Preparation assessed during intubation was adequate in 82.5 % in the free diet group and 90.3 % in 3-day low residue diet group ($p = 0.24$).

Conclusions Unrestricted diet is preferred by the patients. Dietary restriction may be unnecessary to achieve adequate bowel preparation

eP152 AN EVALUATION OF A NOVEL BOWEL PREPARATION REGIMEN AND ITS EFFECT ON THE UTILITY OF COLON CAPSULE ENDOSCOPY

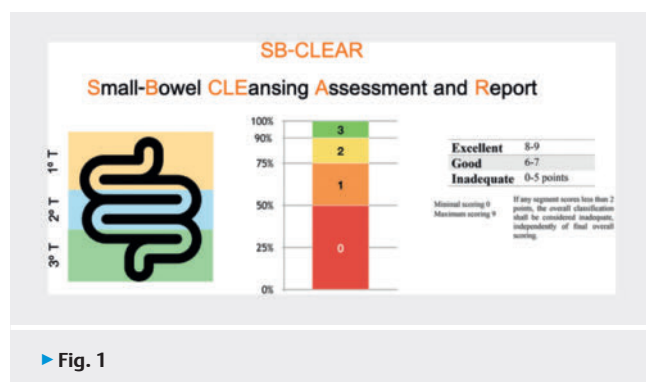
Authors MacLeod C.¹, Watson A.J.M.¹

Institute 1 Raigmore Hospital, Department of Surgery, Inverness, United Kingdom

DOI 10.1055/s-0042-1745005

Aims To evaluate the efficacy of a novel bowel preparation and booster regimen for patients undergoing colon capsule endoscopy (CCE).

Methods This was a prospective audit carried out between 12/07/2021 and 29/11/2021. Symptomatic patients (those referred with lower gastrointestinal symptoms) undergoing CCE in NHS Highland trialed a new bowel preparation and booster regimen for their procedure (Table 1). We recorded the completeness of procedure (visualisation of the whole colon and rectum), bowel preparation adequacy, if the test was successful (complete with adequate bowel preparation) and if a further test was required following CCE. We also noted the reason for further test (either due to CCE findings or inadequate CCE).



► Fig. 1

► **Table 1** Bowel preparation and booster regimen.

Day – 1	1L Moviprep solution
	1L Moviprep solution
Day of procedure	Booster 1 – 30ml of Phosphosoda and 50ml Gastrografin
	Booster 2 – 15ml of Phosphosoda and 50ml Gastrografin

Results 183 patients were included in this audit. The median age was 61 years and 114/183 (62 %) were female. 130/183 (71 %) patients had a complete test, 157/183 (86 %) had adequate bowel preparation and 118/183 (64 %) had a successful test. 76/183 (42 %) of patients required no further test following CCE, 46/183 (25 %) required a colonoscopy, 55/183 (30 %) required a flexible sigmoidoscopy and 6/183 (3 %) required a CT colonogram. 41/46 (89 %) colonoscopy were required due to CCE findings, and 5/46 (11 %) colonoscopy were required due to an inadequate test. 28/55 (51 %) and 27/55 (49 %) flexible sigmoidoscopy were required due to CCE findings and an inadequate test, respectively.

Conclusions We found the rate of adequate bowel preparation using this novel regimen comparable to colonoscopy. However, further work is needed to improve the completion rate which will reduce the need for flexible sigmoidoscopy following CCE.

eP153 EFFECTIVENESS AND SAFETY OF 1L PEG-ASC VERSUS STANDARD BOWEL PREPARATIONS FOR COLONOSCOPY: A META-ANALYSIS

Authors Maida M.¹, Ventimiglia M.², Vitello A.¹, Sinagra E.³

Institutes 1 Gastroenterology and Endoscopy Unit, S. Elia-Raimondi Hospital, Caltanissetta, Italy; 2 Directorate General of Medical Device and Pharmaceutical Service, Italian Ministry of Health, Rome, Italy; 3 Gastroenterology and Endoscopy Unit, Fondazione Istituto San Raffaele Giglio, Cefalù, Italy

DOI 10.1055/s-0042-1745006

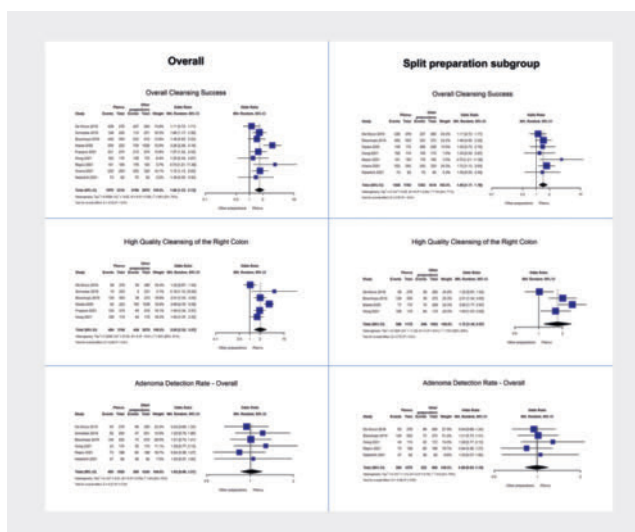
Aims This meta-analysis aims to estimate the effectiveness of 1L polyethylene glycol plus ascorbate (PEG-ASC) versus other bowel preparations for colonoscopy.

Methods MEDLINE via PubMed, Ovid Embase, Scopus and Cochrane Library were systematically searched through November 2021 for studies comparing 1L PEG-ASC versus other bowel preparations. A random-effect model was applied for pooling results; heterogeneity was expressed as I^2 .

Results Nine studies met the inclusion criteria and were included in the meta-analysis (7 RCTs, 2 prospective observational studies, 5186 participants). The analysis showed a significant higher cleansing success (CS) for 1L PEG-ASC compared to other preparation both overall (OR 1.68; 95 %CI 1.33-2.12; $p < 0.01$, $I^2 = 46\%$) and in the split regimen subgroup (OR 1.44; 95 %CI 1.17-1.78; $p < 0.01$, $I^2 = 0\%$), as well as a significant greater high-quality cleansing (HQC) of the right-colon overall (OR 2.02; 95 %CI 1.33-3.07; $p < 0.01$, $I^2 = 82\%$) and in the split regimen subgroup (OR 1.73; 95 %CI 1.16-2.57; $p < 0.01$, $I^2 = 73\%$).

The pooled estimate of adenoma detection rate (ADR) showed no significant difference among the two groups either overall (OR 1.02; 95 %CI 0.86-1.21; $p = 0.79$, $I^2 = 0\%$), or in the split regimen subgroup (OR 0.99; 95 %CI 0.83-1.19; $p = 0.93$, $I^2 = 0\%$).

A non-significant higher pooled estimate of patients with mild/moderate adverse events (AEs) was observed for 1L PEG-ASC compared to other preparations (OR 1.36; 95 %CI 0.97-1.90; $p < 0.07$, $I^2 = 61\%$). No severe AEs occurred.

► **Fig. 1**

Conclusions When compared to traditional preparations, 1L PEG-ASC showed higher overall CS and HQC of the right-colon, and similar ADR. A non-significant higher number of patients with mild/moderate AEs was observed for 1L PEG-ASC in the absence of severe AEs.

eP154 SAFETY OF A NOVEL 1L-POLYETHYLENE GLYCOL-ASCORBATE SOLUTION FOR COLONOSCOPY CLEANSING (REAL STUDY)

Authors Manno M.¹, Biancheri P.¹, Bonura G.F.², Gabbani T.³, Rainer J.¹, Curatolo A.¹, Deiana S.¹, Impellizzeri G.², Ottaviani L.¹, Hassan C.⁴, Repici A.⁴, Soriani P.³

Institutes 1 Gastroenterology and Digestive Endoscopy Unit, Azienda USL Modena, 41012, Italy; 2 Gastroenterology and Digestive Endoscopy Unit, 41012, Italy; 3 Gastroenterology and Digestive Endoscopy, Azienda USL Modena, 41012, Italy; 4 Department of Biomedical Sciences, Humanitas University, Milan, 20089, Italy

DOI 10.1055/s-0042-1745007

Aims Very low-volume bowel preparation (BP) for colonoscopy with one liter polyethylene glycol plus ascorbate (1L-PEG-Asc) has displayed high tolerability, compliance, and quality of bowel cleansing. However, concerns have been raised regarding the safety of 1L-PEG-Asc. In our study, we aimed to evaluate the incidence of adverse events (AEs) following BP with 1L-PEG-Asc or 2L-PEG-Asc.

Methods From January 2019 to September 2020, data from all consecutive adult outpatients who underwent colonoscopy in the Modena District Hospital Digestive Endoscopy Unit were collected. AEs were assessed by reviewing the clinical and laboratory data of patients who attended the Emergency Department of the Modena District Hospitals in the 7 days following the colonoscopy, and were classified as “BP-related” or “BP-unrelated”.

Results During the study, 4069 (68.03 %) and 1912 (31.97 %) patients underwent colonoscopy in our Unit after taking 2L-PEG-Asc or 1L-PEG-Asc, respectively. Regarding AEs, 77 (1.29 %) patients attended ED in the 7 days following the colonoscopy, 53 (53/4069, 1.30 %) and 24 (24/1912, 1.25 %) after taking 2L-PEG-Asc and 1L-PEG-Asc, respectively. BP-related AEs were observed in 5 (5/4069, 0.12 %) and 4 (4/1912, 0.21 %) patients after 2L-PEG-Asc and 1L-PEG-Asc, respectively. The most frequent BP-related AEs were tachyarrhythmias (6/5981, 0.10 %).

Conclusions Our data show that the incidence rate of clinically relevant BP-related AEs following either 1L-PEG-Asc or 2L-PEG-Asc is extremely low. This strongly suggests that the very low-volume 1L-PEG-Asc colonoscopy BP is as safe as 2L-PEG-Asc BP in a real-life clinical setting of unselected patients.

eP155 EFFECTIVENESS OF DIFFERENT VOLUMES OF PEG PREPARATION FOR COLONOSCOPY IN THE ELDERLY: A RETROSPECTIVE ANALYSIS OF A PROSPECTIVE COHORT

Authors Marcello M.¹, Sinagra E.², Sferrazza S.³, Scalisi G.⁴, Morreale G.¹, Vitello A.¹, Schillaci D.⁵, Manganaro M.¹, Camilleri S.¹

Institutes 1 Gastroenterology and Endoscopy Unit, S. Elia-Raimondi Hospital, Caltanissetta, Italy; 2 Gastroenterology and Endoscopy Unit, Fondazione Istituto San Raffaele Giglio, Cefalù, Italy; 3 Gastroenterology and Endoscopy Unit, Santa Chiara Hospital, Trento, Italy; 4 Gastroenterology Unit, ARNAS Garibaldi, Catania, Italy; 5 Gastroenterology Unit, Ospedale Basarocco, Niscemi, Italy

DOI 10.1055/s-0042-1745008

Aims To assess the effectiveness of different volumes of polyethylene glycol (PEG) preparations for colonoscopy and other factors associated with cleansing success in the elderly.

Methods We retrospectively reviewed a prospective cohort of 1289 in- and outpatients performing colonoscopy, after an afternoon-only or afternoon-morning 1, 2 or 4L PEG-based preparation. The elderly population was defined by age ≥ 65 years. The primary endpoints were the assessment of cleansing success (CS) and high-quality cleansing (HQC) of the right-colon.

Results All 575 patients aged ≥ 65 years were included in the analysis. Overall, 54.6% of patients were male, mean age was 72.8 ± 5.9 and 94.3% of subjects were outpatients. Colonoscopy was completed with cecal intubation in 95.5% of cases, CS was achieved in 70.3% and HQC of the right-colon in 17.7% of patients.

When analysing the effectiveness of bowel cleansing by different PEG volumes, CS was achieved in 89.3%, 76.7% and 71.8% ($p = 0.024$) for 1, 2 and 4L PEG, and HQC of the right colon in 36.9%, 9.4% and 17.0% ($p < 0.001$) for 1L, 2L and 4L PEG respectively.

At multivariate analysis, afternoon-morning regimen (OR = 2.43, 95%CI = 1.34-4.38; $p = 0.003$), CS at previous colonoscopy (OR = 2.29, 95%CI = 1.14-4.73; $p = 0.02$), tolerability score (OR = 1.29, 95%CI = 1.16-1.44; $p < 0.001$), low-fiber diet (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 CS.

Conclusions Achieving adequate bowel cleansing in the elderly is challenging and influenced by many external factors. In these patients, 1L PEG is associated with higher rates of CS and HQC of the right-colon compared to higher volume PEG preparations.

eP156 PERFORMANCE OF A CONVOLUTIONAL NEURAL NETWORK FOR THE DETECTION OF BLOOD OR HEMATIC RESIDUES IN ENTEROSCOPY: A PROOF-OF-CONCEPT STUDY

Authors Marílio Cardoso P.¹, Mascarenhas Saraiva M.J.^{1,2}, Afonso J.¹, Ribeiro T.¹, Andrade A.P.^{1,2}, Cardoso H.^{1,2}, Ferreira J.³, Macedo G.^{1,2}

Institutes 1 University Hospital Center of São João, Department of Gastroenterology, Porto, Portugal; 2 Faculty of Medicine of the University of Porto, Porto, Portugal; 3 Faculty of Engineering of the University of Porto, Department of Mechanical Engineering, Porto, Portugal

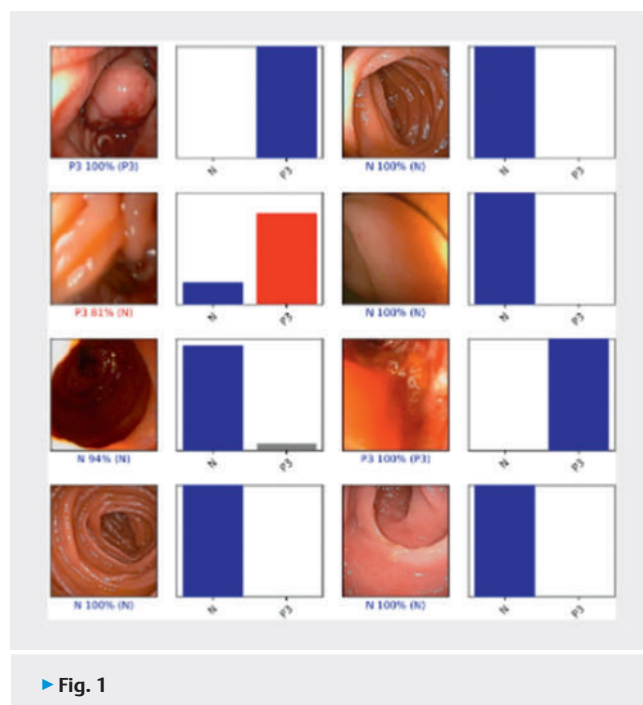
DOI 10.1055/s-0042-1745009

Aims Artificial intelligence algorithms have shown promising results when applied to different endoscopic techniques. The application of Convolutional Neural Networks (CNN) for detection of lesions in double-balloon enteroscopy (DBE) has not been explored. We aimed to develop and test a CNN-based algorithm for automatic detection of blood or hematic residues in DBE exams.

Methods We included a total of 6900 images, 1435 showing blood or hematic residues. The remaining images showed normal mucosa or other findings. A pool of 5520 images (80% of the image dataset) was used for development of

the network. Its performance was evaluated using a validation dataset comprised by the remaining 20% of the dataset ($n = 1380$). The output provided by the network was compared to a consensus classification provided by two gastroenterologists with experience in DBE (Figure 1). The sensitivity, specificity, accuracy, positive and negative predictive values, and area under the curve (AUC) were calculated.

Results After optimization of the neural network, our model automatically detected blood in the small bowel in enteroscopy images with a sensitivity of 95.8%, a specificity of 97.6%, positive and negative predictive values of 91.4% and 98.9%, respectively. The CNN had an overall accuracy of 97.2%. The AUC was 0.99. The CNN analyzed the validation dataset in 10 seconds, at a rate of approximately 138 frames per second.



► Fig. 1

Conclusions We developed a pioneer AI algorithm for automatic detection of blood or hematic residues during DBE exams which may enhance the diagnostic yield of deep enteroscopy techniques in patients with bleeding originating from the small bowel.

eP157V DETAILED METHOD TO DETERMINE CARBON FOOTPRINT

Authors Martín-Cabezuelo R.¹, López-Muñoz P.¹, Pons-Beltrán V.¹, Vilariño G.², Betín P.A.², Tort I.², Vidaurre A.², Lorenzo-Zúñiga V.¹

Institutes 1 University and Polytechnic La Fe Hospital / IISLaFe, Endoscopy Unit, Valencia, Spain; 2 Universitat Politècnica València, Center for Biomaterials and Tissue Engineering, Valencia, Spain

DOI 10.1055/s-0042-1745010

Due to COVID19 pandemic, the use of disposable materials for healthcare purposes has increase significantly, leading to a rampant increase of residues which affects the environment. Determining the life cycle of GI instruments is key factor in improvement our environmental footprint. For that each of the instruments are characterised by several techniques such as, Fourier transform infrared spectroscopy, Energy Dispersive X-Ray analysis, Differential Scanning Calorimetry, and Thermogravimetric Analysis. The establishment of GI instruments carbon footprint make the healthcare institutions become aware of its environmental effect and helps to reduce its detrimental effect by choosing the better option.

eP158 UPPER GASTROINTESTINAL BLEEDING: COMPARISON BETWEEN THE ROCKALL SCORE AND THE GLASGOW-BLATCHFORD SCORE

Authors Mechhor S.¹, El Bacha H.¹, Bouibaouen B.¹, Cherkaoui Malki M.¹, Nkurunziza L.¹, Gharbi T.¹, Benzoubeir N.¹, Errabih I.¹

Institute 1 Ibn Sina University Hospital, Gastro-Enterology and Proctology Unit "Médecine B", Rabat, Morocco

DOI 10.1055/s-0042-1745011

Aims Upper gastrointestinal bleeding (UGIB) is a common cause of hospital admission. Multiple scoring systems have been developed to stratify patients: including Rockall and Glasgow-blatchford. Many clinical studies have validated their predictive values; yet, their clinical effectiveness and their cut-offs are subjects to debates.

Methods This is a prospective, descriptive and analytical study conducted between April 2020 and November 2021. We included patients over 18 years of age who presented with upper gastrointestinal bleeding.

Results 100 patients were included, mean age 60 [40.5-72]. The sex ratio: 1.2.56. The prevalence of rebleeding was 37.6% of patients. The mean of the two scores was significantly higher in patients who rebleeded compared to those who did not: GBS (8.32 ± 2.6 Vs 7.17 ± 3.5, p 0.005); RS (5.39 ± 1.64 Vs 3.48 ± 1.23 p < 0.001). In multivariate analysis, the two scores were predictive of re-bleeding: Glasgow score (OR = 1.13, p < 0.001), RS (OR = 1.7, p = 0.003). The GBS – using a cut-off of 4 has an excellent sensitivity and NPV: (Sensitivity: 100% – Specificity: 9.38% – PPV: 29.3% – NPV: 100%); In comparison with The RS: using a cut-off of 3 Sensitivity: 83.33% – Specificity: 50% – PPV: 38.5% – VPV: 88.9%.

Conclusions Our study showed that, the two scores are predictive factors of rebleeding, despite a rather average diagnostic ability. We also underline that the GBS has an excellent and better NPV than the Rockall score. It would make outpatient care possible to those with a GB score of 0.

eP159 USER EVALUATIONS OF THE DEVICE PERFORMANCE OF A NOVEL SINGLE-USE DUODENOSCOPE IN A CLINICAL SETTING

Authors Meisner S.¹, Russell R.², Tølbøll T.², Adamsen S.^{1,2}

Institutes 1 Copenhagen University Hospital Bispebjerg, Digestive Disease Center, Copenhagen, Denmark; 2 Ambu A/S, Ballerup, Denmark

DOI 10.1055/s-0042-1745012

Aims To investigate endoscopists' perception of a novel single-use duodenoscope (SUD) in clinical use.

Methods Performance evaluation forms were filled by 137 European and Australian endoscopists at 87 hospitals immediately after using the SUD (Ambu aScope Duodeno) in patients for the first time. A five-point Likert scale was used to assess the attributes of the SUD. Whether they would use the SUD again was assessed on a binary scale, and comments on the translucent tip were segmented based on their theme. The ASGE ERC difficulty grading scale and endoscopists' SUD experience were assessed using linear regression. Statistical analysis was done with RStudio Pro ver. 1.2.5033-1.

Results In 247 procedures, the endoscopists median overall satisfaction with the SUD was 4 (IQR 3-4). 98% would use the SUD again. 82% commented positively on the translucent tip. Median score for ease of setup, silent suction button and the weight of the endoscope were "above expectations" in 37%, 39% and 36%, respectively. Median scores of remaining parameters were "meets expectations". The overall satisfaction, navigation, angulation capability, tip control and orientation and passing of accessories correlated significantly (P > 0.05) with the endoscopists' experience with the SUD. ASGE ERC grading scale correlated with rating of weight and ease of setup.

► Table 1

Expectation (Overall Satisfaction)	Far below / Below (1) / (2)	Meets (3)	Above (4)	Far above (5)
Ease of setup	0% / 1%	45%	37%	16%
Silent suction Button	1% / 6%	33%	39%	21%
Weight of SUD	1% / 2%	40%	36%	20%
Overall Satisfaction	0% / 8%	32%	47%	13%

Conclusions The majority of endoscopists were satisfied with performance of the SUD with median ratings stated as "meets expectations" or above. 98% were willing to use the SUD again. Positive comments on the translucent tip indicates that further research is needed to fully understand the benefits and clinical implications.

eP160V BALLOON EXPANDABLE BIODEGRADABLE STENT USING EUS-ANTEGRADE APPROACH IN PATIENTS WITH BENIGN BILIARY STRICTURE AND SURGICALLY ALTERED ANATOMY

Authors Robles-Medrande C.^{1,1}, Merfea R.C.¹, Alcivar-Vasquez J.¹, Del-Valle R.¹, Arevalo-Mora M.¹, Barreto-Perez J.¹

Institute 1 Instituto Ecuatoriano de Enfermedades Digestivas, Guayaquil, Ecuador

DOI 10.1055/s-0042-1745013

Aims: Therapy of benign biliary strictures due to altered anatomy may be challenging. We report the first two cases of biodegradable metallic stent placement through EUS-HGS (endoscopic-ultrasound-hepaticogastrostomy).

Methods: Two female patients, were managed for postsurgical biliary stenosis. EUS-HGS fistula was created. After 2 months, BEBS was deployed.

Result: Procedural complication occurred in the second patient. During EUS-HGS, distal end of plastic stent was displaced between liver and cardia. Liver was accessed through esophagus. Distal end of stent was retrieved using a forceps. The patients presented normalization of biochemistry. Stent degradation occurred within 8 weeks.

Conclusions: EUS-HGS may replace percutaneous access.

eP161 EVALUATION OF THE REPRODUCIBILITY OF EACH LOCATION OF STOMACH IN THE NEW GASTRIC ENDOSCOPIC SUBMUCOSAL DISSECTION TRAINING MODEL

Authors Mitsui T.¹, Yoda Y.^{1,2}, Sunakawa H.¹, Takashima K.^{1,2}, Nakajo K.¹, Murano T.¹, Kadota T.¹, Shinmura K.¹, Ikematsu H.¹, Yano T.^{1,2}

Institutes 1 National Cancer Center Hospital East, Gastroenterology and Endoscopy, Kashiwa-shi, Japan; 2 National Cancer Center Hospital East, NEXT Medical Device Innovation Center, Kashiwa-shi, Japan

DOI 10.1055/s-0042-1745014

Aims Gastric ESD is a highly technical procedure mainly due to the distinctive shape of the tract and diverse lesion locations. We have developed a new gastric ESD training model (G-Master) with KOTOBUKI Medical (Saitama, Japan) and assessed the reproducibility of the lesion location in the model.

Methods The model was consisted of a simulated mucous membrane sheet made of Plant-based material (konjac flour) and a setting frame. The setting frame consists of an esophagus-like tube, a spatula that imitates the greater curvature of the stomach, and a frame for fixing the sheet (2-axis gimbal structure), and can reproduce 11 locations of the stomach.

We assessed the reproducibility of each location in the new gastric ESD training model by a questionnaire to experts. Eight experts performed ESD in 3–5 locations per person. The questionnaire included a) similarity of locations, and b) similarity of mucosal tension changes due to adjustment of the amount of air in the stomach, and was answered on a 6-point scale. The average of score in the same location < 2 points was considered a low rating, 2–4 points was medium rating, and > 4 points, high rating.

Results By location, similarity of locations had a generally high rating, but only lower anterior and posterior walls had medium ratings with 3–4 points. In all locations, similarity of mucosal tension changes were high rating.

Conclusions The new gastric ESD training model was evaluated as highly reproducible for each stomach position by experts.

eP162 RETROSPECTIVE ANALYSIS OF THE UTILITY OF THE PATENCY CAPSULE IN CAPSULE ENDOSCOPY

Authors O'Hara F.^{1,2}, McNamara D.^{1,2}, Walker C.²

Institutes 1 Trinity College Dublin, Department of Medicine, Dublin, Ireland; 2 Tallaght University Hospital, Gastroenterology, Dublin, Ireland
DOI 10.1055/s-0042-1745015

Aims Capsule retention is a serious complication of capsule endoscopy. Retention rates range from 1% to 4.8%. The introduction of patency capsules has had a major role improving this. The aim was to analyse usage of patency test in our institute against guidelines.

Methods A retrospective review of patency tests performed from July 2020 to July 2021 was performed. Patient demographics, indication for capsule, indication for patency, the result of patency assessment, and findings at capsule endoscopy were recorded. Indications for patency were compared against ESGE technical guidelines.

Results 166 (14.7%) of 1127 patients referred for capsule endoscopy were deemed to require patency assessment (45.8% male, mean age 48years).

► Table 1

Valid Indication 145 (87.3%)	Previous Abdominal Surgery 50 (30.1%)	No Valid Indication 21 (12.7%)	Suspected Crohns Disease 18(10.8%)
	Known Crohns Disease 36 (21.7%)		None documented 3 (1.8%)
	Radiological findings 20 (12.0%)		
	Long term NSAID use 20 (12.0%)		
	Other 19 (11.4%)		

Indication for patency assessment was appropriate in 145 (87.3%), with 21 (12.7%) falling outside current guidelines. 18 of these 21 were for suspected Crohn's disease without obvious additional risks for capsule retention.

The overall patency fail rate was 43.1%. 2 patients(1.2%) presented with symptomatic retention of the patency capsule and were managed conservatively. Fail rates were similar between those with a valid indication vs no valid indication for patency assessment (42.9% vs 43.9%)

No patient who passed patency assessment went on to have capsule retention during the actual test.

Conclusions Patency capsules are an effective means of reducing capsule retention in at-risk groups. Due to the high failure rate at patency assessment, its overuse would result in excessive exclusion of patients from capsule endoscopy. This high failure rate is possibly related to procedural aspects and warrants further investigation to avoid this eventuality.

eP163 ENDOSCOPIC RETROGRADE CHOLANGIO-PANCREATOGRAPHY ON PEDIATRIC PATIENTS – EXPERIENCE OF A PORTUGUESE ADULT GASTROENTEROLOGY DEPARTMENT

Authors Ornelas Saraiva R.¹, Pavão Borges V.¹, Silva M.J.¹, Loureiro R.¹, Capela T.¹, Ramos G.¹, Canena J.¹, Mateus Dias A.¹, Silva R.², Coimbra J.¹

Institutes 1 Centro Hospitalar Universitário Lisboa Central, Gastroenterology, Lisboa, Portugal; 2 Centro Hospitalar Universitário Lisboa Central, Pediatric Surgery, Lisboa, Portugal

DOI 10.1055/s-0042-1745016

Aims Experience with endoscopic retrograde cholangiopancreatography (ERCP) in the pediatric population is limited. Few **Medical Centers** have experts specifically trained in pediatric therapeutic endoscopy. As a result, patients are generally referred to adult endoscopists who **have a high experience in the procedure**. The aim of this study was to characterize the experience of an adult endoscopy unit with ERCP on pediatric patients, with a special focus on very young patients.

Methods We retrospectively analyzed indications, technical success rate, final clinical diagnosis, and complications of ERCPs in children < 18 years at our tertiary referral hospital center over the 26-year period between 1994 and 2020.

Results Sixty-two ERCP were performed on 55 children with a median age of 13 years (range 1 to 17 years). Eleven ERCP were performed on 9 patients **£ 5 years**. Indications for ERCP were as follows: suspected biliary obstruction (n = 39), mainly due to suspected choledocholithiasis, **suspected lithiasic acute pancreatitis** (n = 19), recurrent pancreatitis (n = 3), and stent extraction (n = 1). The cannulation success rate was 95,1%. Therapeutic interventions were performed in **79%** of ERCP. All patients were followed up as inpatients. Complications were recorded in two procedures (3,2%) and no procedure related mortality occurred.

Conclusions In our experience ERCP in children can be safely performed with high success rates by advanced adult-trained expert endoscopists at a high volume center.

eP164 RISK SCORING SYSTEMS TO PREDICT NEED FOR ENDOSCOPIC TREATMENT IN HOSPITALIZED PATIENTS WITH COVID-19 PNEUMONIA AND UPPER GASTROINTESTINAL BLEEDING

Authors Papastergiou V.¹, Christidou A.¹, Mela M.¹, Mountaki A.¹, Mpeka E.¹, Koustenis K.¹, Veretanos C.¹, Velegriaki M.², Chatzievangelinou C.¹, Katopodi K.¹, Viazis N.¹, Theodoropoulou A.², Archavlis E.¹, Paspatis G.², Mantzaris G.¹

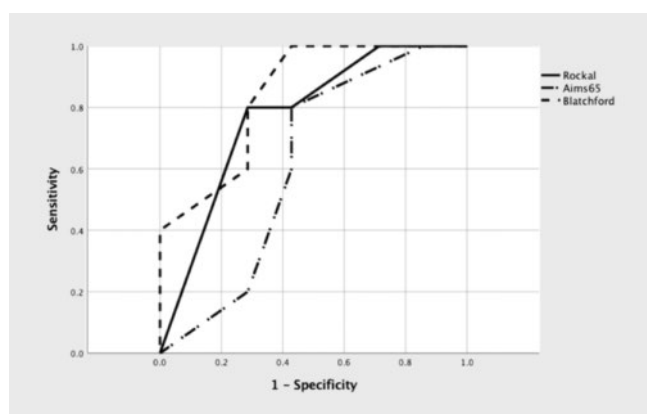
Institutes 1 Evangelismos-Polyclinic General Hospitals, Gastroenterology, Athens, Greece; 2 Venizelion General Hospital, Gastroenterology, Heraklion, Greece

DOI 10.1055/s-0042-1745017

Aims Given the risks of endoscopy and transmitting the virus, the management of patients with COVID-19 pneumonia and upper gastrointestinal bleeding (UGB) is challenging. We evaluated 3 risk scoring systems for assessing the need for endoscopic treatment in patients with COVID-19 pneumonia and UGB.

Methods Dual-centre, retrospective, study involving hospitalized patients with COVID-19 pneumonia and UGB (3/2020-11/2021). The performance of Glasgow-Blatchford score (GBS), pre-endoscopy Rockall and AIMS65 for predicting the need for endoscopic treatment was assessed using the area-under-receiver-operating-characteristic-curve (AUROC).

Results 24 patients were included (14 males, mean 71.4 ± 19.2 years). At the onset of UGB, 18 were on supplemental oxygen, 6 had an endotracheal tube, 22 were under enoxaparine, 8 were taking antiplatelets and 2 were taking direct oral anticoagulants. All 24 patients were treated with proton pump inhibitors, whereas all intubated patients were treated with vasoactive drugs. Upper endoscopy was performed after a median of 1 days (range 0-3). Peptic ulcer was the most common finding (10/24), followed by erosive gastritis (5/24) and oesophagitis (4/24). Endoscopic treatment (endoclips \pm adrenaline injection) was required in 10/24 cases. For predicting the need for endoscopic treatment, GBS showed a good performance (AUROC = 0.84, 95%CI:0.69-0.99) and pre-endoscopy Rockall performed fairly (AUROC = 0.77, 95%CI:0.58-0.96), whereas the performance of AIMS65 was poor (AUROC = 0.61, 95%CI:0.38-0.84). No endoscopic treatment was required at a GBS < 12.5 (8/24 patients; sensitivity = 100%, specificity = 57.1%) and a pre-endoscopic Rockall < 1.5 (4/24 patients; sensitivity = 100%, specificity = 28.6%).



► Fig. 1

Conclusions Risk scoring systems appear to be useful for triaging the need for endoscopic intervention in patients with COVID-19 pneumonia who develop UGB.

eP165 RETROSPECTIVE OBSERVATIONAL STUDY OF COVID19 PANDEMIC IMPACT ON CRC DIAGNOSIS AT GIRONA'S REFERENCE HOSPITAL

Authors Pardo Grau L.¹, Albert Carrasco M.¹, Oliveras Font B.¹, Guarner Escibano E.¹, Hombrados Verde M.¹, Busquets Casals D.¹, Torrealba Medina L.¹, Mohamed F.¹, Huertas Nadal C.¹

Institute 1 University Hospital Dr. Josep Trueta, Girona, Spain

DOI 10.1055/s-0042-1745018

Aims Introduction: Due to the covid-19 pandemic, most of the endoscopy units were forced to decrease their usual activity dramatically. This fact made the implementation of a prioritization criteria necessary for the restoration to their usual operation.

Aim: Evaluation of the pandemic impact on colorectal cancer (CRC) cases diagnosed in our center.

Methods Retrospective observational study of CRC cases endoscopically diagnosed in out hospital from January 2019 to May 2020 evaluating demographic variables, waiting time, TNM staging and mortality in before and after pandemic beginning.

Results:

► Table 1

Variables	Total	Prepandemic	Postpandemic
CRC: n	153	74	79
Wait time: median (\pm IQR *)	16 (+ 42)	24 (\pm 52,5)	14 (\pm 24,5)
Metastasis: n (%)	47 (30,72%)	27 (36,49%)	20 (25,32%)
Exitus **: n (%)	29 (18,95%)	17 (22,97%)	12 (15,19%)

(* Interquartile range; ** CRC related exitus)

Conclusions During pandemic's first year no increase was observed in the length of waiting time and neither was the finding of an advanced stage or mortality. The use of a priority criteria seems to be a useful strategy to be applied on endoscopy unit management.

eP166 ACCURACY IMPROVEMENT OF RECONSTRUCTED 3-DIMENSIONAL COLONOSCOPE DISPLAY APPLYING FIBER BRAGG GRATING SENSOR

Authors Park J.¹, Keum B.¹, Shim J.¹, Park G.¹, Yoon J.¹, Bang E.J.¹, Lee K.W.¹, Kim S.H.¹, Jeon H.J.¹, Lee J.M.¹, Choi H.S.¹, Kim E.S.¹, Jeon Y.T.¹, Lee H.S.¹, Chun H.J.¹

Institute 1 Korea University Anam Hospital, Seoul, Korea, Republic of

DOI 10.1055/s-0042-1745019

Aims Fiber bragg grating (FBG) sensor is a detector that irradiates a laser to the core fiber of an optic fiber and measures the difference in wavelength due to changes in the length and strain of the fiber. However, there was a problem in realizing an accurate colonoscope shape in 3-dimensional (3D) display due to a signal generated from a site not inserted into the colonoscope. Therefore, this study aims to increase the precision of the length and shape of the 3D colonoscope by applying the technology of selectively turning the sensor on/off based on the anus using the FBG sensor.

Methods 3D colonoscope display was manufactured and compared in three different ways in vitro. First, an instrument was manufactured to measure the length of the inserted endoscope in the colon by converting the amount of rotation into the insertion length using a roller. In the second, the shape of the colonoscope was displayed by measuring the change in sine wave according to the colonoscope, which went through magnet coil in front of the anus. Thirdly, the shape of the colonoscope was displayed using a phantom colonoscope model with the fixed point in the anus as a reference.

Results

► Table 1

1. measure the length automatically according to the amount of rotation of the roller	the operation of the sensor of external endoscope showed instability in the overall endoscope-shaped display, causing inconvenience to maneuverability.
2. method using the magnetic coil was able to measure the inserted length by changing the magnetic field	it showed limitation in realizing the exact shape of the endoscope due to the low sensitivity.
3. phantom model	the anus was set as a reference to detect the minimum wavelength change, and the length and colonoscope were implemented with minimal errors in 3-D reconstruction.

Conclusions Colonoscopy using a sensor was most effective and showed feasibility when the anus was expressed as a fixed point. Further clinical study using FBG sensor is expected to be needed in the near future.

eP167 APPLICATION OF ENDOSCOPIC SUTURE MACHINE: IN VITRO DURABILITY STUDY

Authors Park G.¹, Choi H.S.¹, Chun H.J.¹, Jeon Y.T.¹, Keum B.¹, Kim E.S.¹, Jeon H.J.¹, Kim S.¹, Lee K.W.¹

Institute 1 Korea University Anam Hospital, Gastroenterology & Hepatology, Seoul, Korea, Republic of

DOI 10.1055/s-0042-1745020

Aims Various endoscopic procedures had been developed such as endoscopic submucosal dissection and endoscopic bariatric surgery. However, such advanced procedures are mostly dependent on experiences of endoscopists. Numerous endoscopic devices had been invented in an effort to decrease procedural complication, but only a few of them had demonstrated improvements in closure strength and reproducibility. Thus, in this study, we evaluated the feasibility and reproducibility of the endoscopic suture machine and to identify the durability difference according to the location closure method.

Methods Approximately 1 cm sized tears were made with a scalpel on antrum, low-body and mid-body on the greater curvature. The suture machine with a 19-gauge needle with thread is loaded at the end of the scope. The suture device is placed at the selected site and close the tear. To compare the closure strength, endoclips were used to close the defect. Then, the stomach models were test for air leakage and the closure strength were tested by mechanical loading tester.

Results None of the stomach models showed air leakage. The stomach models closed with the suture machine showed more stable closure strength compared to those with endoclips. Also, we evaluated closure strength according to the location of the defects. We discovered tears on antrum were more securely closed than the tears on the body.

Conclusions The durability of suture differs according to the location of the stomach and the closure methods. Use of endoscopic suture device is expected to decrease procedure-related complications such as perforation and bleeding. The results demonstrated the reproducibility of the suture device and further studies are necessary to evaluate the consistency of the suture machine

eP168 A COMPARATIVE STUDY OF COLONOSCOPY PREPARATION WITH 1L PEG + ASCORBIC ACID VS SODIUM PICOSULPHATE WITH MAGNESIUM CITRATE IN REAL-LIFE SETTING: EFFECTIVENESS, AND SAFETY

Authors Perez Arellano E.¹, Rodríguez García M.I.¹, Galera Ródano A.B.¹, Flores Á.¹, de la Morena Madrigal E.¹

Institute 1 Hospital de la Zarzuela, Gastroenterology, Madrid, Spain

DOI 10.1055/s-0042-1745021

Aims Preparations based on polyethylene glycol (PEG) and sodium picosulphate with magnesium citrate (SPMC), are first-line options, but comparative data in a real-life setting are lacking. This study aims to compare the effectiveness and safety of low volume 1L PEG + Ascorbic Acid (1L PEG + A) versus SPMC in real-life setting.

Methods Systematic and prospective registry of outpatients prepared with 1L PEG + A and SPMC. Bowel cleansing was assessed through the Boston Bowel Preparation Scale (BBPS) in total and right colon, Polyp Detection Rate (PDR) as the proportion of colonoscopies where at least one polyp was found and removed in total colon. Side effects were recorded.

Results Between July 2019- October 2021, 876 patients were included. Mean age 58 years [18-85].

► **Table 1** Cleansing success rates in total and right colon. PDR

BBPS	1L PEG + A (n = 425)	SPMC (n = 451)	p
TOTAL COLON	BBPS > 6: 91 %	BBPS > 6: 77 %	P < 0.01
	BBPS > 7: 76 %	BBPS > 7: 50 %	
RIGHT COLON	BBPS > 2: 92 %	BBPS > 2: 82 %	P < 0.01
	BBPS = 3: 58 %	BBPS = 3: 27 %	
PDR	46 %	42 %	p > 0.05

2 % of patients presented vomiting with SPMC and 11 % with 1L PEG + A (p < 0.01). 5 % of patients had nausea with SPMC and 3 % with 1L PEG + A (p > 0.05). 3 % of the patients in 1L PEG + A had sodium levels > 147 mg /dl, all asymptomatic. 9 % of the patients in SPMC had sodium levels < 135 mg /dl. 5 women > 65 years had values < 130 mg/dl (one required emergency admission).

Conclusions Preparation with 1L PEG + A obtains optimal and high-quality bowel preparation compared to SPMC. Vomiting does not seem to affect the final efficacy of 1L PEG + A. In SPMC group, 5 cases of hyponatremia with clinical relevance were detected, which could make us assess changes in its use in patients over 65 years.

eP169 INCREMENTAL YIELD OF ARTIFICIAL INTELLIGENCE IN A FECAL OCCULT BLOOD TEST BASED ORGANIZED SCREENING POPULATION PROGRAM

Authors Pesatori E.V.^{1,2}, Milluzzo S.M.^{1,2}, Cesaro P.¹, Piccirelli S.^{1,2}, Catino F.^{1,2}, Quadarella A.^{1,2}, Olivari N.¹, Minelli Grazioli L.¹, Codazzi M.¹, Bizzotto A.¹, Hassan C.³, Spada C.^{1,2}

Institutes 1 Fondazione Poliambulanza Istituto Ospedaliero, Brescia, Italy;

2 Fondazione Policlinico Universitario A.Gemelli IRCCS – Università Cattolica del Sacro Cuore, Roma, Italy; 3 IRCCS Humanitas Research Hospital, Rozzano, Italy

DOI 10.1055/s-0042-1745022

Aims Fecal Occult Blood Test (FOBT) is the first line test in organized Colorectal Cancer (CRC) screening settings in several countries. Artificial Intelligence (AI) can potentially improve diagnostic performance of colonoscopy, reducing adenoma miss rate and interval CRC. The aim of the study was to compare the diagnostic yield of AI-assisted colonoscopy versus standard colonoscopy (SC).

Methods This is a single-center RCT evaluating consecutive patients undergoing colonoscopy in a FOBT based screening population program. Patients were randomly assigned to SC or AI. Subjects with < 6 score at Boston Bowel Preparation Scale were excluded from analysis. Polyp Detection Rate (PDR), Adenoma Detection Rate (ADR), Serrated Detection Rate (SDR), patients with advanced adenomas (i.e. villous histology, high-grade dysplasia or low-grade dysplasia > 1 cm) and patients with ≥ 3 precancerous lesions were compared between the groups using χ^2 -test.

Results Data about 464 patients were collected: 231 assigned to AI and 233 to SC arm. Due to inadequate bowel cleansing, 22 patients (10 AI and 12 SC group) were excluded. PDR and ADR were both significantly higher in the AI group compared to SC group (respectively 81.9 % [181/221] vs 71.5 % [158/221]; p = 0.01 and 69.2 % [153/221] vs 60.2 % [133/221]; p = 0.04). Patients with advanced adenomas and with ≥ 3 precancerous lesions were increased in the AI group. SDR was slightly increased in the SC arm. See **Table 1**.

► **Table 1** Comparison between AI group and SC group.

Outcomes	AI	SC	p-value
PDR	81.9% [181/221]	71.5% [158/221]	0.01
ADR	69.2% [153/221]	60.2% [133/221]	0.04
SDR	14.9% [33/221]	16.2% [36/221]	0.69
ADVANCED ADENOMAS	25.3% [56/221]	24.4% [54/221]	0.82
≥ 3 ADENOMAS	30.8% [68/221]	22.6% [50/221]	0.05

Conclusions AI improves ADR and PDR in a screening FOBT based setting. The impact of a AI supported colonoscopy in surveillance intervals needs to be further evaluated.

eP170 ROLE OF ARTIFICIAL INTELLIGENCE IN SMALL BOWEL CAPSULE ENDOSCOPY TRAINING

Authors Piccirelli S.^{1,2}, Bizzotto A.², Pesatori E.V.^{1,2}, Salvi D.^{1,2}, Tettoni E.^{1,2}, Belluardo N.^{1,2}, Spada C.^{1,2}

Institutes 1 Università Cattolica del Sacro Cuore, Rome, Italy; 2 Fondazione Poliambulanza Istituto Ospedaliero, Internal Medicine, Gastroenterology and Digestive Endoscopy, Brescia, Italy

DOI 10.1055/s-0042-1745023

Aims Reading of Small Bowel (SB) capsule videos still represents the main limitation since it requires time and prolonged attention, even more for novices. Artificial Intelligence (AI) in small bowel CE might represent a key strategy either in routine clinical use or in a training setting. Primary aim of this study was to measure the inter-observer agreement among novices and experts performing standard or AI-assisted reading. Secondary aim was to evaluate reading time in both modalities.

Methods 10 videos of patients who performed SB CE (Navicam, Ankon, China) for suspected SB bleeding from July to September 2021 were retrospectively evaluated by 2 experts (> 500 cases) and 4 novices (< 5 cases). One expert and 2 novices were randomized to blindly review videos in standard modality (SR) or with the assistance of AI. Findings were classified according to the Saurin classification. The agreement between experts and novices was evaluated for P2 lesions in a per-patient analysis using Cohen's kappa statistic.

Results Of 10 SB CE videos evaluated at per-patient analysis, expert readers reported the same main diagnoses (100% inter-observer agreement) whereas novices showed moderate to substantial agreement when compared to experts. Mean reading time using AI resulted significantly lower ($p < 0.005$, 95% IC) for both experts and novices (see the Table below).

► **Table 1**

	Cohen's k	Mean reading time +/- SD
Expert – SR	1	43.7 +/- 10.97
Expert – AI	1	4 +/- 1.49
Novice 1 – SR	1	42.1 +/- 9.8
Novice 2 – SR	0.58	40 +/- 6.6
Novice 1 – AI	0.61	14 +/- 4.35
Novice 2 – AI	0.61	10.1 +/- 2.96

Conclusions In a training setting, these preliminary data suggest that artificial intelligence significantly reduces the reading time of non-expert readers without affecting the overall accuracy and the inter-observer agreement.

eP171 ENDOSCOPIST DIRECTED PROPOFOL SEDATION IN EUS: PREDICTIVE FACTORS OF SEVERE ADVERSE EVENTS

Authors Huelin Álvarez P.¹, Pijoan Comas E.^{2,3}, Miguel Salas I.¹, Torres Vicente G.¹, Albuquerque Miranda M.^{2,3}, Vargas García A.^{2,3}, Figa Francesch M.², Zaragoza Velasco N.¹, Reñé Espinet J.M.¹, Gonzalez-Huix Lladó F.^{1,2}, Working Group on Sedation D SEE

Institutes 1 Hospital Universitari Arnau de Vilanova, Lleida, Spain;

2 Clínica Girona, Girona, Spain; 3 Hospital de Palamós, Palamós, Spain

DOI 10.1055/s-0042-1745024

Aims Severe adverse events including hypoventilation and laryngospasm during EUS are frequently related to the wider tip of the echoendoscopes.

Aim To determine predictive factors of adverse events during digestive EUS procedures in anesthesiologist or endoscopist directed propofol sedation scenario.

Methods Analysis of a prospective bicentric registry 2018-2021. Diagnostic and therapeutic EUS procedures in consecutive patients were included. Type of sedation (endoscopist or anesthesiologist), echoendoscope (radial/linear) and risk factors for complications of propofol sedation were recorded (ASA, OSAHS, Performance status, facial characteristics, obesity, and associated comorbidity).

Results 735 patients were included (age: $65 \pm$; 47% women). Propofol: 310 ml (IQR: 220-435); Midazolam 0 ml (IQR: 0-2 ml). Severe adverse events occurred in 31 (4.2%); 3% laryngospasm, 1.4% SatO₂ < 75%. Multivariate analysis detected Retrognathia (OR: 3.17; 95% IC: 1.30-7.74), Anesthesiologist directed sedation (OR: 2.48; 95% IC: 1.15-5.34) and OSAHS (OR: 3.01; 95% IC: 1.41-6.43) as predictive factors of severe adverse events.

Conclusions A trained sedation endoscopist team can administer propofol sedation in EUS with less adverse events than anesthesiologist directed sedation.

eP172 VALIDATION OF REAL-TIME CAD SYSTEM FOR COLORECTAL POLYP DETECTION AND CHARACTERIZATION DURING COLONOSCOPY IN CROATIAN COHORT OF PATIENTS – PRELIMINARY DATA

Authors Prijic R.¹, Grubelic Ravic K.¹, Huml I.¹, Skrlac I.¹, Krznaric Z.^{1,2}

Institutes 1 University Hospital Center Zagreb, Division of Gastroenterology and Hepatology, Zagreb, Croatia; 2 University of Zagreb, Medical School, Zagreb, Croatia

DOI 10.1055/s-0042-1745025

Aims From January to February 2021 real-time computer-aided diagnosis (CAD) system (FujiFilm CAD Eye) for polyp detection (CADE) and characterization (CADx) was used in an out-patient clinic for colonoscopy procedures for validation in Croatian cohort of patients. This system works with integrated image enhancement technologies for supporting detection and characterization.

Methods Procedures were performed by 4 experienced endoscopists. All polyps detected during colonoscopy were resected and sent for pathologic analysis separately. Data regarding real-time detection and characterization of polyps was compared with obtained pathohistological data.

Results 52 patients (31/52, 59.6% male, mean age 59 ± 12 years) were recruited. Polyps were detected in 47 (90.4%) patients with total of 103 polyps found. 51 detected polyps (49.5%) were characterized as neoplastic. Pathohistological reports found 53 (51.4%) neoplastic lesions (adenoma) with 59.6% of patients having at least 1 adenoma. Comparing CADx data to histological reports, in our cohort of patients CADx showed sensitivity, specificity, and accuracy of 85.48%, 87.72% and 86.55%, respectively. CADx system did not work so well in the context of identifying residual adenomatous tissue after the polyp resection because of the interfering blood.

Conclusions These preliminary data in Croatian patients confirm good polyp characterization using AI-based CAD system. Further evaluation in real-world setting on a larger number of patients will give us more robust evidence for

confident use. Future standardization and advancement in technology for using this system for immediate detection of residual adenomatous tissue after the piece-meal polypectomy could improve completeness of polypectomy in ever-day setting.

eP173 VALIDATION OF THE TEAM-ENTS (TEAM-WORK IN ENDOSCOPY ASSESSMENT MODULE FOR ENDOSCOPIC NON-TECHNICAL SKILLS) FRAMEWORK

Authors Ravindran S.^{1,2,3}, Healey C.¹, Coleman M.¹, Ashrafian H.³, Haycock A.², Archer S.⁴, Darzi A.³, Thomas-Gibson S.⁵

Institutes 1 Joint Advisory Group on Gastrointestinal Endoscopy, London, United Kingdom; 2 St Mark's Academic Institute, Wolfson Unit for Endoscopy, London, United Kingdom; 3 Imperial College London, Surgery and Cancer, London, United Kingdom; 4 Cambridge University, Public Health and Primary Care, Cambridge, United Kingdom; 5 Imperial College London, Metabolism, Digestion and Reproduction, London, United Kingdom
DOI 10.1055/s-0042-1745026

Aims We previously developed a novel team-based non-technical skills framework in endoscopy known as TEAM-ENTS (Teamwork in Endoscopy Assessment Module for Endoscopic Non-Technical Skills). The aim of this study was to establish face and content validity of the tool.

Methods A multidisciplinary group of endoscopists, nurses, screening practitioners and trainees were recruited to refine items of the framework in a modified Delphi process. Items from the framework were presented as elements (subsets of overriding categories) and behavioural descriptors. Panel members rated items against a 4-point Likert Scale and were able to leave free text comments. The content validity index (I-CVI) was calculated for each item and a result of >0.79 indicated acceptance. Two rounds were conducted.

Results In total, 58 participants from the UK and Ireland were recruited. There were 24 consultant endoscopists (41%), 14 clinical/nurse endoscopists (24%), 11 nurses (19%; including manager and screening practitioner roles) and 9 trainee endoscopists (16%). Median duration of experience in role was 14 years (IQR 7.75 – 20). There was a 5% attrition rate between rounds. In the first round, 9 elements and 37 behavioural descriptors did not meet consensus (I-CVI < 0.79). In total, 36 items were adjusted, 7 items were merged and 3 items were deleted. Remaining items met consensus thresholds after the second round (I-CVI > 0.79). The refined TEAM-ENTS BMS now consists of 5 categories, 16 elements and 47 behavioural descriptors.

► Table 1

COMMUNICA-TION	<ol style="list-style-type: none"> 1. Information exchange 2. Maintaining open dialogue 3. Patient communication 	<ol style="list-style-type: none"> 1. Effective information exchange between team members 2. Maintaining open lines of communication between team members 3. Communicating with the patient (if able to do so)
PLANNING, DECISION-MAKING & PROBLEM-SOLVING	<ol style="list-style-type: none"> 1. Preparation 2. Shared decision-making 3. Reviewing outcomes 	<ol style="list-style-type: none"> 1. Preparing team members for events and actions. Ensuring everyone is ready 2. Collaborative decision-making between relevant team members, adaptable to the situation 3. Debriefing procedure(s) to review outcomes and promote learning

LEADERSHIP & COORDINATION	<ol style="list-style-type: none"> 1. Control and responsibility 2. Role delegation 3. Team adaptability 	<ol style="list-style-type: none"> 1. Maintaining control and responsibility over a situation 2. Team members aware of roles and skill mix 3. Adapting the team to the situation or task and recognising when help is required
SITUATION AWARENESS	<ol style="list-style-type: none"> 1. Problem recognition and focus 2. Shared understanding 3. Anticipating events 	<ol style="list-style-type: none"> 1. Detection of issues, having a wider awareness of the environment and maintaining focus 2. Ensuring the team have a shared understanding of events throughout the procedure 3. Anticipating future outcomes and reacting appropriately
TEAMWORK, COOPERATION & SUPPORT	<ol style="list-style-type: none"> 1. Teambuilding and mutual respect 2. Cohesion 3. Support 4. Empowerment 	<ol style="list-style-type: none"> 1. Building the team to be a functioning unit, developing mutual respect between team members 2. Team members working together, valuing each other and conflict resolution 3. Team members helping each other and seeking support if necessary 4. Appropriate expression of opinion and receptiveness to feedback or opinion, empowering team members to contribute

Conclusions The TEAM-ENTS framework has been validated by a multidisciplinary group to reflect the core non-technical skills and behaviours relevant to endoscopy teams.

eP174 ENDORAIL ADD-ON DEVICE FOR SOLVING COLON LOOPS: PROOF OF CONCEPT IN A PHANTOM COLON.

Authors Repici A.^{1,2}, Spadaccini M.², Vespa E.¹, Bhandari P.³, Sharma P.⁴, Maselli R.¹, Hassan C.^{1,2}

Institutes 1 Humanitas University, Department of Biomedical Sciences, Rozzano, Italy; 2 Humanitas Research Hospital, Department of Gastroenterology and Hepatology, Rozzano, Italy; 3 Portsmouth Hospitals NHS Trust, Department of Gastroenterology, Portsmouth, United Kingdom; 4 Kansas City VA Medical Center, Department of Gastroenterology, Kansas City, United States

DOI 10.1055/s-0042-1745027

Aims Incomplete colonoscopy can result in missed colorectal cancer. Looping is a main cause for difficult and incomplete colonoscopy. The aim of this study is to assess the capability of Endorail to solve colon loops in a phantom model.

Methods Endorail (Endostart srl, Certaldo, Firenze, Italy) is composed by a handpiece containing a magnet, a balloon catheter and ferromagnetic fluid (water based iron powder dispersion) prefilled syringe. A colonoscope was arranged in alpha loop, reverse alpha loop and N-loop configurations in plastic colon phantom. Endorail procedure was conducted and successful loop reduction and procedure time were assessed.

Results Endorail was capable of successfully solve all colonoscopy loop configurations according to the following procedure: the balloon catheter is advanced through the tool channel beyond the tip of the colonoscope; the balloon is inflated with 25 mL of ferromagnetic fluid; the handpiece is applied over the phantom abdomen to magnetically anchor the balloon; fast retraction of the colonoscope tip until the rectum allows to solve the loop and straighten the colon; retraction of the balloon catheter coupled with gentle insertion of the colonoscope allows the colonoscope to quickly advance through the catheter; once the colonoscope tip reaches the inflated balloon, the handpiece is removed and the balloon is deflated and withdrawn (mean time 2.50 min).

Conclusions We demonstrated the Endorail capability of solving colonoscopy loops in a laboratory setting and indicate that Endorail has the potential to facilitate fast and easy loop reduction and colonoscopy completion also in clinical setting.

eP175 AN ASSESSMENT OF THE COMPLIANCE WITH THE UPPER GASTROINTESTINAL BLEED CARE BUNDLE IN AN INPATIENT SETTING WITH DAILY ENDOSCOPY LISTS

Authors Rhead C.¹, Light H.¹, Besherdas K.¹

Institute 1 Royal Free Hospital Trust, Barnet Hospital, London, United Kingdom

DOI 10.1055/s-0042-1745028

Aims To assess whether the British Society of Gastroenterology Upper Gastrointestinal Bleed (UGIB) bundle [1] was being followed in a centre with access to emergency endoscopy lists between monday-friday.

Methods We reviewed notes of all patients referred as an UGIB who proceeded to endoscopy between August 2020-February 2021. 113 patients were identified, of these 8 had a background of cirrhosis. We collected data attaining to each recommendation in the care bundle, including time to endoscopy, whether a Glasgow-Blatchford score (GBS) was calculated, whether intravenous fluids (IVF) and blood products were given, whether cirrhotic patients received antibiotics and terlipressin and, if a treatment was given, at least 2 methods of haemostasis were applied.

Results Average time from referral to endoscopy was 23.6 hours. 58 % of patients underwent endoscopy within 24 hours of referral. Of patients admitted over the weekend, average time to scope was 38 hours. All patients with Hb < 70 received blood transfusion. 21 patients had endoscopic therapy, 12 had at least dual therapy. GBS was calculated for 42 % of patients. 68 % were given IVF (in 2 patients it was considered contraindicated due to comorbidities). Of the cirrhotic patients, 57 % were given terlipressin and antibiotics.

Conclusions In a centre with accessible emergency endoscopy lists, we are able to comply with the UGIB care bundle guidance on timing of endoscopy. Significant delays in endoscopy were identified for patients presenting over the weekend. Compliance with other aspects of the care bundle was variable and leaves scope for further education to optimise patient outcomes.

eP176 NEW COMPACT ULTRASOUND ENDOSCOPE FOR PERFORMING ADVANCED ENDOSCOPIC PROCEDURES ADAPTABLE TO STANDARD GASTROSCOPES: FIRST HUMAN EXPERIENCE

Authors Robles-Medrand C.¹, Arevalo-Mora M.¹, Puga-Tejada M.¹, Alcivar-Vasquez J.¹, Del Valle R.¹, Cohn J.², Corbett S.², Steinberg S.²

Institutes 1 Instituto Ecuatoriano de Enfermedades Digestivas, Guayaquil, Ecuador; 2 EndoSound, Portland, United States

DOI 10.1055/s-0042-1745029

Aims Endoscopic ultrasound (EUS) allow real-time assessment, diagnosis, and endoscopic treatment of the gastrointestinal (GI) tract with high-resolution

imaging. Recently, a new, portable, low-cost concept of EUS device system has been developed to fasten onto any standard gastroscope. We aim to determine the feasibility, effectiveness, and safety of a new, single-use, EUS device system for visualization of GI anatomic structures and the performance of endoscopic procedures.

Methods We reported a prospective pilot study using this new, add-on, EUS device system, of the first five human cases referred for EUS-guided evaluation, between October and November 2021. Patients > 18 years underwent two consecutive procedures: first, a standard EUS (S-EUS) intervention using a therapeutic linear echoendoscope (Pentax EG38-J10UT; Pentax Medical, Hamburg, Germany), Pentax video processing (EPK-I7010), attached to an ultrasound console (Arietta 850 Hitachi, Tokyo, Japan); and a second intervention, with a new adaptable EUS (N-EUS) using a therapeutic linear endoscope (EG-2990110, Pentax Medical, Hamburg, Germany) attached to a dedicated compact ultrasound beamformer (EndoSound Vision System (EVS), EndoSound, Portland – Oregon, USA).

Results Optimal endoscopic procedure performance and high-quality visualization of all anatomical structures was achieved with N-EUS. 1/5 patients required EUS-guided fine needle biopsy (EUS-FNB) due to a pancreatic head lesion (Figure 1). EUS-FNB was performed with S-EUS and N-EUS; pancreatic adenocarcinoma was confirmed in both samples. No immediate post-procedural complications were reported.

Conclusions This new EUS system may be a feasible, effective, and safe alternative for accurately performing therapeutic endoscopic procedures with high-quality imaging.

eP177 REAL-TIME COMPUTER-AIDED POLYP/ADENOMA DETECTION DURING SCREENING COLONOSCOPY: A SINGLE-CENTER DIAGNOSTIC TRIAL

Authors Robles-Medrand C.¹, Cifuentes-Gordillo C.¹, Arevalo-Mora M.¹, Mendez J.C.², Puga-Tejada M.¹, Baquerizo-Burgos J.¹, Del Valle R.¹, Alcivar-Vasquez J.¹, Alvarado H.¹, Merfea R.C.¹, Barreto Perez J.¹, Rodriguez J.¹, Calle-Loffredo D.¹, Lukashok H.P.¹

Institutes 1 Instituto Ecuatoriano de Enfermedades Digestivas, Guayaquil, Ecuador; 2 Mdconsgroup, Artificial Intelligence Department, Guayaquil, Ecuador

DOI 10.1055/s-0042-1745030

Aims Several factors affect polyp/adenoma detection rate (i.e., bowel preparation). The Discovery Artificial Intelligence assisted polyp detector (Pentax Medical, Hoya Group) was recently launched for clinical practice. We aim to evaluate the real-world effectiveness of AI assisted colonoscopy on clinical practice.

Methods Consecutive patients > 45 years old who underwent HD colonoscopy (Nov/2020-Mar/2021). A first operator assessed only with HD colonoscopy, and a second operator (blinded to previous findings) with an AI-assisted HD colonoscopy. The study protocol was approved by the local Institutional Review Board. Data was analyzed in R v4.0. NCT04915833 .

Results 115 colonoscopies were performed in 115 patients. The polyp and adenoma detection rate were 132 (64.3) and 73 (35.6 %), respectively detected in 58/115 (50.4 %) patients: 19/205 (9.3 %) NICE II, 7/205 (3.4 %) > 10 mm (Table 1). From them, 44 polyps and 4 adenomas were detected by the second operator assisted by AI. Frequency of patients with polyps/adenomas appropriately detected by AI (sensitivity) among different colon segments ranged from 56.25 % (rectum) to 78.26 % (ascending colon). Meanwhile, capability of AI for appropriate polyp/adenoma presence discharging (negative predictive value, NPV) ranged from 61.54 % (sigmoid) to 89.09 % (cecum). However, there was observed lower rates for specificity (8.42-49.49 %) and positive predictive value (PPV, 9.89-19.78 %) due to high false positive (Figure 1).

► **Table 1** Polyp/adenoma characterization.

	Total	Rectum/ Sigmoid/ Descending	Transverse/ Ascending
	(n = 205)	(n = 100)	(n = 105)
Nice (I / II / III)	186 / 19 / -	92 / 8 / -	94 / 11 / -
Size (0-5 mm / 5-10 mm / > 10 mm)	132 / 66 / 7	85 / 15 / -	47 / 51 / 7
Removal (for- ceps / cool loop / hot loop)	181 / 16 / 8	87 / 10 / 3	94 / 6 / 5

	Sensitivity	Specificity	PPV	NPV	Agreement
Rectum	9/16; 56.25 (29.88 - 80.25)	40/99; 40.40 (39.29 - 59.73)	9/59; 15.25 (7.22 - 26.99)	49/56; 87.5 (75.93 - 94.82)	58/115; 50.43 (40.96 - 59.89)
Sigmoid	15/20; 75 (50.9 - 91.34)	8/95; 8.42 (3.71 - 15.92)	15/102; 14.71 (8.47 - 23.09)	8/13; 61.54 (31.58 - 86.14)	23/115; 20 (13.12 - 28.48)
Descending	9/13; 69.23 (38.57 - 90.91)	20/102; 19.61 (12.41 - 28.65)	9/91; 9.89 (4.62 - 17.95)	20/24; 83.33 (62.62 - 95.26)	29/115; 25.22 (17.58 - 34.17)
Transverse	10/15; 66.67 (38.38 - 88.18)	20/100; 20 (12.67 - 29.18)	10/90; 11.11 (5.46 - 19.49)	20/25; 80 (59.3 - 93.17)	30/115; 26.09 (18.34 - 35.1)
Ascending	18/23; 78.26 (56.3 - 92.54)	19/92; 20.65 (12.92 - 30.36)	18/91; 19.78 (12.16 - 29.45)	19/24; 79.17 (57.85 - 92.87)	37/115; 32.17 (23.77 - 41.53)
Cecum	8/14; 57.14 (28.86 - 82.34)	49/101; 48.51 (38.45 - 58.67)	8/60; 13.33 (5.94 - 24.59)	49/55; 89.09 (77.75 - 95.89)	57/115; 49.57 (40.11 - 59.04)

► **Fig. 1**

Conclusions The Discovery Artificial Intelligence is a feasible tool to aid endoscopists during screening colonoscopy. However, high rate of false positive limits its overall accuracy. Development of this technology with more normal colonoscopies videos could decrease false positive rate, increasing overall accuracy.

eP178 SAFETY, PERFORMANCE STATUS, LOCAL CONTROL, AND OVERALL SURVIVAL AFTER ENDOSCOPIC ULTRASOUND-GUIDED RADIOFREQUENCY ABLATION OF UNRESECTABLE PANCREATIC ADENOCARCINOMA: A SINGLE-CENTER HISTORIC COHORT STUDY

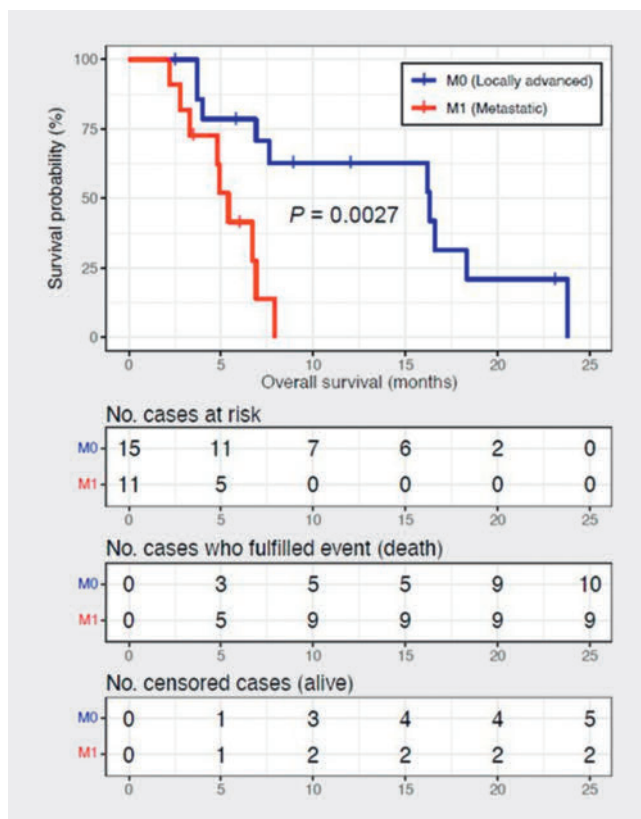
Authors Robles-Medrand C.¹, Del Valle R.¹, Puga-Tejada M.¹, Arevalo-Mora M.¹, Estrada-Guevara L.¹, Bunces-Orellana O.¹, Moreno-Zambrano D.¹, Egas-Izquierdo M.¹, Alcivar-Vasquez J.¹, Cifuentes-Gordillo C.¹, Alvarado H.¹, Merfea R.C.¹, Barreto Perez J.¹, Rodriguez J.¹, Calle-Loffredo D.¹, Lukashok H.P.¹

Institute 1 Instituto Ecuatoriano de Enfermedades Digestivas, Guayaquil, Ecuador

DOI 10.1055/s-0042-1745031

Aims Endoscopic ultrasound-guided radiofrequency ablation (EUS-RFA) has emerged as an alternative for pancreatic cancer local treatment. However, its adverse events and oncological endpoints as performance status (PS), local control (LC) and overall survival (OS), require further understanding. Our study pursues clinical experience of EUS-RFA for pancreatic adenocarcinoma local treatment in terms of safety, PS, LC, and OS.

Methods Baseline data from patients attended from October 2019 to May 2021 was retrospectively recovered. EUS-RFA was performed with a 19-g needle electrode (Starmed; Taewoong Medical, Seoul, South Korea). With a fanning technique RFA, energy was applied in 10 second cycles. Repeated sessions were performed in 4 weeks intervals (3 sessions maximum).



► **Fig. 1**

Results A total of 30 patients underwent EUS-RFA; 4/30 were excluded. 26 cases were analyzed. At diagnosis, 15/26 (57.7%) with locally advanced (T4NXM0) and 11/26 (42.3%) with metastatic disease (M1). Technical success was achieved in all patients with no major adverse events. Posttreatment lesion median large diameter reduced to 26 mm ($P=0.04$). Six-month survival rate was 11/26 (42.3%), ECOG 0-1 ($P=0.03$). Disappearance/necrosis and > 50% diameter decrease with CT/MRI was identified in 11/11 (100%) and 5/11 (45.5%), respectively. Median OS was 7 (4 – 12) months. Metastatic disease was a significant factor for worsening survival (HR 5.021; IC 95% 1.589 – 15.87; $P=0.003$) (Figure 1).

Conclusions EUS-RFA of pancreatic adenocarcinoma is a minimally invasive, safe, and effective modality. Due to its cytoreductive effect, RFA may play a role in downstaging cancer, providing symptomatic relief, with potential OS increase in non-metastatic cases.

eP179 GASTROINTESTINAL ENDOSCOPY, HOSPITAL DELIVERY SETTING, PROCEDURES PER DAY AND LOCAL INCIDENCE INCREASE THE RISK FOR SARS-COV-2 INFECTION IN HEALTH CARE WORKERS IN AEROSOL-GENERATING DISCIPLINES

Authors Römmele C.¹, Ebigbo A.¹, Kahn M.¹, Zellmer S.¹, Muzalyova A.¹, Hammel G.², Bartenschlager C.³, Beyer A.⁴, Rosendahl J.⁵, Schlittenbauer T.⁶, Zenk J.⁷, Al-Nawas B.⁸, Frankenberger R.⁹, Hoffmann J.¹⁰, Arens C.¹¹, Lammert F.^{12, 13}, Traidl-Hoffmann C.¹⁴, Messmann H.¹

Institutes 1 University Hospital Augsburg, Hospital for Internal Medicine III – Gastroenterology and Infectious Diseases, Augsburg, Germany; 2 Helmholtz Zentrum München, Institute of Environmental Medicine, Neuherberg, Germany; 3 University Augsburg, Chair of Health Care Operations/Health Information Management, Augsburg, Germany; 4 Medical Practice for Gastroenterology and Gastrointestinal Oncology, Altötting,

Germany; 5 University Hospital Halle, Hospital for Internal Medicine I – Gastroenterology and Pneumology, Halle, Germany; 6 University Hospital Augsburg, Department of Oral and Maxillofacial Surgery, Augsburg, Germany; 7 University Hospital Augsburg, Department of Otorhinolaryngology, Head and Neck Surgery, Augsburg, Germany; 8 University Hospital Mainz, Hospital and Polyhospital for Oral and Maxillofacial Surgery, Plastic Surgery, Mainz, Germany; 9 Philipps University Marburg and University Hospital Giessen and Marburg, Campus Marburg, Department for Operative Dentistry, Endodontics, and Pediatric Dentistry, Marburg, Germany; 10 University Hospital Heidelberg, Department of Oral and Maxillofacial Surgery, Heidelberg, Germany; 11 University Hospital Magdeburg, Department of Otorhinolaryngology, Head and Neck Surgery, Magdeburg, Germany; 12 Saarland University Medical Center, Saarland University, Department of Medicine II, Homburg, Germany; 13 Hannover Medical School (MHH), Hannover, Germany; 14 University of Augsburg, Department of Environmental Medicine, Faculty of Medicine, Augsburg, Germany

DOI 10.1055/s-0042-1745032

Aims Healthcare workers (HCW) are at high risk of SARS-CoV-2 infection due to exposure to potentially infectious material, especially during aerosol-generating procedures (AGP). We aimed to investigate risk factors for SARS-CoV-2 infection among HCW in medical disciplines with AGP.

Methods A nationwide questionnaire-based study in in- and outpatient settings was conducted between 12/16/2020 and 01/24/2021. Data on SARS-CoV-2 infections among HCW and potential risk factors were investigated.

Results 2,070 healthcare facilities with 25,113 employees were included in the study. Overall infection rate among HCW was 4.7%. Multivariate analysis showed that regions with higher incidence rates had significantly increased risk of infection among HCW. Furthermore, hospital setting and AGP during gastrointestinal endoscopy (GIE) have more than double the risk of infection (OR 2.63; 95% CI 2.501-2.817, $p < 0.01$ and OR 2.35; 95% CI 2.245-2.498, $p < 0.01$). The number of procedures performed per day was also significantly associated with an increased risk of infection (OR 1.01; 95% CI 1.007-1.014, $p < 0.01$). For HCW who did not treat confirmed SARS-CoV-2 cases, there was a tendency towards lower risk of infection (OR 0.72; 95% CI 0.507-1.025, $p = 0.068$).

Conclusions HCW in GIE seem to be at higher risk of infection than those in other AGP, especially in the hospital setting. Regions with higher SARS-CoV-2 incidence rates and the total number of procedures performed daily in an institution were also significantly associated with increased risk of infection.

eP180 COLONOSCOPY IN ELDERLY AND YOUNG SUBJECTS: WHAT INDICATIONS ARE ASSOCIATED WITH HIGH-RISK LESIONS FOR COLORECTAL NEOPLASIA?

Authors Sair A.¹, Benhamdane A.¹, Addajou T.¹, Osman M.¹, Mrabti S.¹, Berraida R.¹, Sentissi S.¹, Elkoti I.¹, Rouilla F.¹, Benkirane A.¹, Seddik H.¹

Institute 1 University of Mohamed V, Rabat, Morocco

DOI 10.1055/s-0042-1745033

Aims The indications for colonoscopy are clearly defined, with an essential role in etiological diagnosis, including colorectal cancer screening. Common indications for young adults under 50 years include rectorrhagia and diarrhea, whereas for subjects over 50 years the indications may be broader given the risk of colorectal cancer.

The aim of our study is to compare the indications and results of colonoscopy between those under and over 50 years, and to determine the indications associated with a risk of neoplastic lesions.

Methods This is a retrospective study over a period of 3.5 years, including 1518 patients who underwent colonoscopy. The patients were divided into 2 groups: group A under 50 years, group B over 50 years. Patients with known inflammatory bowel disease (IBD) were excluded from our study.

Results 65.1% of the patients were over 50 years old and 34.9% under 50 years old. Indications for colonoscopy were dominated by constipation in group B 29.1% (vs 22%; $p = 0.01$), and by diarrhea in group A 33.3% (vs 19.3%; $p < 0.001$). Colonoscopy was pathological in 49.1% of patients in group B vs 32.9% of patients in group A ($p < 0.001$), dominated by colitis or rectocolitis (47.9%) in subjects under 50 years of age (vs 11.7%; $p < 0.001$), polyps (61.5% vs 41.3%; $p < 0.001$) and colorectal neoplasia (16% vs 5%; $p = 0.002$) in older subjects. The indications associated with a higher risk of neoplastic lesions were constipation in subjects < 50 years ($p = 0.007$) and rectal bleeding and constipation ($p < 0.001$) in subjects > 50 years.

Conclusions The presence of colorectal neoplastic lesions was strongly associated with the presence of constipation in subjects < 50 years and with both rectorrhagia and constipation in subjects > 50 years. Determining these indications in more studies may help to improve the appropriateness of colonoscopy mainly in younger people.

eP181 WHAT IS THE CONTRIBUTION OF COLONOSCOPY IN PATIENTS WITH MELENA AND NORMAL UPPER GASTRO-INTESTINAL ENDOSCOPY?

Authors Sair A.¹, Benhamdane A.¹, Addajou T.¹, Osman M.¹, Mrabti S.¹, Berraida R.¹, Sentissi S.¹, Elkoti I.¹, Rouibaa F.¹, Benkirane A.¹, Seddik H.¹

Institute 1 University of Mohamed V, Rabat, Morocco

DOI 10.1055/s-0042-1745034

Aims The origin of melena is located upstream of the right colon, their etiologies are multiple, ranging from a simple gastric ulcer to a tumor lesion. The first-line examination for melena is oeso-gastro-duodenal endoscopy, but when it is normal, other endoscopic explorations are necessary, notably total colonoscopy.

The aim of our study is to report the role of colonoscopy in the etiological diagnosis of melena with normal upper gastro-intestinal endoscopy; as well as the associated factors.

Methods This is a retrospective descriptive and analytical study, between January 2018 and August 2021, including 40 patients who underwent colonoscopy for melena with a normal upper gastro-intestinal endoscopy. Patients with known IBD were excluded from our study.

Results 1,518 patients underwent colonoscopy, of which 2.6% were for melena. The average age of our patients was 64 years \pm 14.11; with a sex ratio (M/F) of 1.5.

Colonoscopy was normal in 43.6% of cases, when it was pathological (56.4%) it showed: colonic angiodysplasia in 42.9%, colonic diverticulosis in 28.6%, recto-colonial polyps in 25%, an aspect of colitis in 9.5% and a colorectal process in 5% of patients. In univariate analysis, the factors associated with a pathological result at colonoscopy for melena were: age ($p = 0.004$); the presence of associated constipation ($p = 0.009$) and diarrhea ($p = 0.015$).

In multivariate analysis, no factor was found to be statistically significantly related to pathological colonoscopy.

Conclusions Melena is a life-threatening diagnostic and therapeutic emergency. When the upper gastro-intestinal endoscopy is normal, colonoscopy is always recommended. In our study, the endoscopic findings were dominated by colonic angiodysplasia, colonic diverticulosis and colorectal polyps.

eP182 IMPACT OF THE PANDEMIC COVID-19 ON DIGESTIVE ENDOSCOPIC ACTIVITY

Authors Sair A.¹, Mrabti S.¹, Benhamdane A.¹, Addajou T.¹, Osman M.¹, Berraida R.¹, Sentissi S.¹, Elkoti I.¹, Rouibaa F.¹, Benkirane A.¹, Seddik H.¹

Institute 1 University of Mohamed V, Rabat, Morocco

DOI 10.1055/s-0042-1745035

Aims In order to prepare health facilities for the upcoming influx of COVID-19 patients, it was necessary to minimize non-COVID-19 related activities, which led to a significant reduction of non-urgent procedures.

The aim of the study was to describe the impact of the COVID-19 pandemic on the digestive endoscopic activity in our department by comparing it to the previous year.

Methods We performed a retrospective study, comparing endoscopic procedures performed (excluding emergencies) in both 2019 and 2020, especially the periods from March 20 to June 30 (lockdown period).

Statistical analysis was performed by SPSS 21.0 software.

Results 5018 endoscopy procedures were performed in 2019 and 2020, but only 1869 performed in 2020.

For the lockdown period, a large decrease in the number of patients undergoing endoscopy was seen in 2020 compared with 2019 (179 vs 863).

Gastroscopy, colonoscopy, and rectosigmoidoscopy volumes experienced a 59 %, 53 %, and 67 % reduction, respectively.

A reduction of 50 % in the number of echo-endoscopy was also seen, especially during the lockdown period 11 versus 21 in 2019 ($p = 0.006$), whereas the number of ERCPs remained relatively unchanged, with 22 during the lockdown period versus 29 in 2019 ($p < 0.001$).

We also compared the different endoscopy procedures performed during the post-lockdown period compared to the same period in 2019.

Conclusions The COVID-19 pandemic had a significant impact on endoscopy services, its staff and especially on patients following the reduction and limitation of endoscopy indications and procedures.

eP183 ACCESSIBILITY TO ENDOSCOPIC RESECTION OF COLORECTAL NEOPLASTIC LESIONS ≥ 20 MM IN A REFERRAL CENTER: WHAT WAS THE COVID-19 PANDEMIC IMPACT?

Authors [Sarmiento Costa M.¹](#), [Graça A.R.¹](#), [Gravito-Soares E.^{1,2}](#), [Gravito-Soares M.^{1,2}](#), [Amaro P.¹](#), [Figueiredo P.^{1,2}](#)

Institutes 1 Centro Hospitalar e Universitário de Coimbra, Gastroenterology Department, Coimbra, Portugal; 2 University of Coimbra, Faculty of Medicine, Coimbra, Portugal

DOI [10.1055/s-0042-1745036](#)

Aims Advanced endoscopic resection (ER) for complex colorectal polyps is accessible only in referral centers. Accessibility is not yet stated in quality European guidelines for colonoscopy.

We aim to compare ER scheduling with lesion's histology and evaluate the COVID-19 pandemic impact.

Methods Retrospective study including patients with colorectal neoplastic lesions ≥ 20 mm, scheduled for ER in a Gastroenterology referral department, from September/2019 to September/2021, comparing the pre-pandemic period (until March 18th, 2020) with COVID-19 pandemic period. Histology was classified as no dysplasia/low-grade dysplasia *versus* high-grade dysplasia/carcinoma (high-risk lesions).

Results Included 143 patients (47 in the pre-pandemic group versus 96 in the pandemic period), corresponding to 156 lesions. Sixty-three (40.4 %) were high-risk lesions. Table 1 describes overall population's characteristics.

There was no statistically significant difference between gender, age and referral origin when compared to histology ($p = 0.383$, 0.744 and 0.602 , respectively). The referral-scheduling interval was similar in both histologic groups (108 vs 95 days, $p = 0.129$). Scheduling delay over 60 and 90 days did not correlate with advanced histology ($p = 0.369$ and $p = 0.414$, respectively).

There was no significant difference between referral-scheduling delay in the pre and pandemic periods (98 vs 100 days, $p = 0.525$). High-risk histology was not more frequent in the pandemic period ($p = 0.858$).

► Table 1

Male gender	89 (62.2 %)
Age (mean \pm SD, range, in years)	70.4 \pm 11.3 (28-92)
Outpatient referral	86 (60.1 %)
Days between diagnosis and ER scheduling (median, IQR;min-max)	100 (89;2-248)

Conclusions Neither the histological outcome nor the ER scheduling delay were significantly impacted during the COVID-19 pandemic in our unit. Further studies are needed to consider ER accessibility as an additional quality criterion.

eP184 ARTIFICIAL INTELLIGENCE (AI) – ASSISTED VESSEL AND TISSUE RECOGNITION IN THIRD-SPACE ENDOSCOPY

Authors [Scheppach M.W.¹](#), [Mendel R.²](#), [Probst A.¹](#), [Meinikheim M.¹](#), [Palm C.²](#), [Messmann H.¹](#), [Ebigbo A.¹](#)

Institutes 1 Augsburg University Hospital, Department of Gastroenterology, Augsburg, Germany; 2 Ostbayerische Technische Hochschule, Regensburg Medical Image Computing (ReMIC), Regensburg, Germany

DOI [10.1055/s-0042-1745037](#)

Aims Third-space endoscopy procedures such as endoscopic submucosal dissection (ESD) and peroral endoscopic myotomy (POEM) are complex interventions with elevated risk of operator-dependent adverse events, such as intra-procedural bleeding and perforation. We aimed to design an artificial intelligence clinical decision support solution (AI-CDSS, "Smart ESD") for the detection and delineation of vessels, tissue structures, and instruments during third-space endoscopy procedures.

Methods Twelve full-length third-space endoscopy videos were extracted from the Augsburg University Hospital database. 1686 frames were annotated for the following categories: Submucosal layer, blood vessels, electrosurgical knife and endoscopic instrument. A DeepLabv3+ neural network with a 101-layer ResNet backbone was trained and validated internally. Finally, the ability of the AI system to detect visible vessels during ESD and POEM was determined on 24 separate video clips of 7 to 46 seconds duration and showing 33 predefined vessels. These video clips were also assessed by an expert in third-space endoscopy.

Results Smart ESD showed a vessel detection rate (VDR) of 93.94 %, while an average of 1.87 false positive signals were recorded per minute. VDR of the expert endoscopist was 90.1 % with no false positive findings. On the internal validation data set using still images, the AI system demonstrated an Intersection over Union (IoU), mean Dice score and pixel accuracy of 63.47 %, 76.18 % and 86.61 %, respectively.

Conclusions This is the first AI-CDSS aiming to mitigate operator-dependent limitations during third-space endoscopy. Further clinical trials are underway to better understand the role of AI in such procedures.

eP185 EFFECTIVE REDUCTION OF ESOPHAGEAL STENT MIGRATION RATE WITH A NOVEL OVER-THE-SCOPE FIXATION DEVICE (STENTFIX OTSC)

Authors [Schiemer M.¹](#), [Bettinger D.¹](#), [Mueller J.¹](#), [Schultheiss M.¹](#), [Schwacha H.¹](#), [Hasselblatt P.¹](#), [Thimme R.¹](#), [Schmidt A.¹](#), [Kuellmer A.¹](#)

Institute 1 University Medical Center Freiburg, Department of Medicine II (Gastroenterology, Hepatology, Endocrinology and Infectious Diseases), Freiburg, Germany

DOI [10.1055/s-0042-1745038](#)

Aims Self-expandable metal stent (SEMS) placement is routinely performed in a variety of benign and malignant gastrointestinal diseases. One of the most

frequent adverse events after esophageal SEMS placement is stent migration. We evaluated a novel over-the-scope clip device (stentfix OTSC, Ovesco Endoscopy, Tübingen, Germany) designed and approved for SEMS fixation.

Methods This single-center retrospective observational cohort study was performed to analyze stent migration rates before and after availability of the stentfix OTSC device. A cohort of patients who consecutively underwent SEMS fixation with the stentfix OTSC system (SF cohort) was compared with a historical cohort of patients who did not receive stentfix OTSC fixation or any other stent fixation method (NF cohort) before the stentfix OTSC system became available. Outcome variables including technical success, adverse events and clinical success were analyzed.

Results A total of 77 patients (SF cohort: n = 26, NF cohort: n = 51) underwent esophageal SEMS implantation for malignant (69%) and benign (31%) conditions. The technical success rate of stent fixation was 100% and no procedure-related adverse events were observed. The stent migration rate was significantly lower in the SF cohort compared to the NF cohort (8.3% vs. 35.4%, $p < 0.001$). Stent implantation across the gastroesophageal junction was identified as a predictor of stent migration.

Conclusions The stentfix OTSC system effectively prevented stent migration in a variety of benign and malignant gastroesophageal diseases. The application was technically successful in all cases and no adverse events related to clip application or removal were observed.

eP186 INTEGRATING PATIENT-ANALOGUE BILIARY ANATOMY FOR EXISTING HUMAN-BASED ARTIFICIAL ERCP TRAINING MODEL – ADVANTAGES OF 3D PRINTING TECHNOLOGY

Authors [Schweizer U.¹](#), [Duckworth-Mothes B.¹](#), [Koch K.¹](#), [Königsrainer A.¹](#), [Wichmann D.¹](#)

Institute 1 Universitätsklinikum Tübingen, Allgemeine, Viszeral- und Transplantationschirurgie – Experimentelle Chirurgische Endoskopie, Tübingen, Germany

DOI 10.1055/s-0042-1745039

Aims ERCP (endoscopic retrograde cholangiopancreatography) is a challenging endoscopic procedure which requires profound anatomical and technical knowledge combined with optimal diagnostic and therapeutic experience as well as a good manual dexterity. Because ERCP is usually performed with therapeutic intent, training in this area remains a major challenge. The learning curve is often played out on the patient. Beyond that, the variety of different bile duct anomalies could not even be roughly reproduced in training models so far.

Methods The hands-on ERCP training phantom from Tübingen, Germany, is an artificial model based on human anatomy, allowing repetitive basic and advanced training under clinical conditions. In this training system, simulation of even complex anatomy and pathology is now incorporated using 3D printing technology. The modeling of human scans into printable data opens a new horizon to patient-analog, safe and ethical correct training. As the system is modular, new anatomy can be exchanged in a reusable way.

Results The evaluation of the mentioned model showed that beginners and experts alike rated the phantom outstandingly good, also compared to known ERCP training models. As planned complex biliary anatomy could be incorporated and visualized using x-ray in the existing model.

Conclusions The constantly further optimized ERCP training phantom from Tübingen, Germany, with the recent integration of complex bile duct anatomy improves the training system even more. We believe to reach a new dimension of training, which will undoubtedly benefit the education and training as well as the competence of interventional endoscopists.

eP187 ASSESSMENT OF QUALITY PERFORMANCE MEASURES FOR ENDOSCOPIC RETROGRADE CHOLANGIOPANCREATOGRAPHY

Authors [Serrano Dueñas M.¹](#), [Domper Bardají F.¹](#), [De la Santa Belda E.¹](#), [Ramírez Esteso F.¹](#), [Rodríguez González M.¹](#)

Institute 1 Hospital General Universitario de Ciudad Real, Gastroenterology Department, Ciudad Real, Spain

DOI 10.1055/s-0042-1745040

Aims To analyze the technical performance in ERCP procedures in a tertiary center.

Methods We performed a prospective registry of ERCP procedures in a tertiary center from October 2020. Included a one-month follow-up for evaluating complications. We present a preliminary analysis of those procedures performed until May 2021. The final number consisted of 170 interventions. We assessed the measures and compared them to the standard proposed by the European Society of Gastrointestinal Endoscopy.

Results They were 51% women. The age ranged from 28-95 years, with a median of 77. The most frequent diagnosis was choledocholithiasis in 102 cases and distal malignant biliary obstruction in 21 cases. There were up to 27 procedures with alternative diagnoses: normal cholangiography or a dilated bile duct without stones or stenosis. A native papilla was present in 116 patients, bile duct cannulation at first attempt was achieved in 106 patients. Incidence of post ERCP complications was: pancreatitis 3% (5); cholangitis 2.4% (4), bleeding 5.4% (9; seven on anticoagulant/antiplatelet treatment), there were no perforations. Table 1 presents the assessment of the key performance measures.

► **Table 1** Evaluation of ERCP performance measures (left column) compared to the minimum standard recommended (right column).

Adequate antibiotic prophylaxis	100%	90%
Bile duct cannulation (native papilla)	91.4%	90%
Stent placement in distal biliary obstruction	96%	95%
Bile duct stone extraction (<10mm)	86%	90%
Post- ERCP pancreatitis	3%	<10%

Conclusions This is the first time we conduct such an auditory in our center. Monitoring of adherence to quality indicators will allow us to improve our results; starting with an appropriate selection of patients.

eP188 NURSE-LED ENDOSCOPIC TRIAGE OF THE SUSPECTED UPPER GASTROINTESTINAL CANCER REFERRALS DURING THE COVID-19 PANDEMIC

Authors [Shiha M.G.¹](#), [Alleyne L.¹](#), [Wookey L.¹](#)

Institute 1 Northampton General Hospital, Department of Gastroenterology, Northampton, United Kingdom

DOI 10.1055/s-0042-1745041

Aims The COVID-19 pandemic had a profound negative impact on endoscopic services and capacity leading to concerns regarding delayed cancer diagnosis. We aimed to assess the efficacy and outcomes of nurse-led endoscopic telephone triage of suspected upper gastrointestinal (UGI) cancer referrals.

Methods We prospectively collected data of consecutive patients referred for urgent endoscopy through the suspected UGI cancer pathway between April 2020 and August 2021 at a large district general hospital. All patients underwent a telephone triage by the UGI nurse practitioner according to the national guidelines. Patients' demographics, indications for referrals, endoscopy and radiology reports were reviewed and analysed.

Results A total of 809 patients were included (median age 66 (IQR 56-76) years, 56.6 % female). Dysphagia (35.2 %), weight loss (34.3 %) and reflux (32.5 %) were the most common indications for referrals. 80 % (n = 574) of patients were triaged to urgent endoscopy, 3.3 % (n = 27) were downgraded to routine endoscopy, 15.6 % (n = 127) to barium swallow, 1.7 % (n = 14) to urgent computed tomography (CT) and 8.2 % (n = 67) discharged without further investigations. 4.3 % (n = 35) of patients were diagnosed with UGI cancers of whom 84.3 % (27/35) were diagnosed on urgent endoscopy, 3.1 % (1/35) on barium swallow, 12.5 % (4/35) on urgent CT and 8.5 % (3/35) were known to have cancer. None of the patients triaged to routine endoscopy were found to have cancer.

Conclusions The nurse-led telephone triage significantly reduced the number of endoscopic procedures without affecting the diagnostic yield for UGI cancer. Adopting this model will reduce the burden on endoscopy units in the post-pancreatic recovery phase.

eP189 DIAGNOSTIC YIELD OF ENDOSCOPY IN ASYMPTOMATIC PATIENTS WITH NON-IRON DEFICIENCY ANAEMIA

Authors [Pauiliuc O.¹](#), [Patel M.¹](#), [Ali Afsal S.¹](#), [Menon K.¹](#), [Moothedath F.¹](#), [Fasal R.¹](#), [Rajab T.¹](#), [Naing A.¹](#), [Kumar S.¹](#), [Shiha M.G.¹](#), [Thomas T.¹](#)

Institute 1 Northampton General Hospital, Department of Gastroenterology, Northampton, United Kingdom

DOI 10.1055/s-0042-1745042

Aims Endoscopic evaluation of the gastrointestinal (GI) tract is indicated for asymptomatic patients with iron deficiency anaemia (IDA) to rule out GI malignancy. However, there is a paucity of evidence for endoscopy in anaemic patients without iron deficiency (non-IDA). Our aim was to compare the diagnostic yield of endoscopy in asymptomatic patients with non-IDA compared to those with IDA.

Methods We retrospectively collected data of 847 consecutive patients referred for endoscopy with anaemia between January and December 2019 at a district general hospital. Demographics, endoscopy reports and laboratory tests were reviewed. Patients with gastrointestinal symptoms or incomplete data were excluded.

Results A total of 527 patients were included, 415 had evidence of IDA and 112 had non-IDA. Patients with IDA were younger (median age 72 vs. 76 years, $p = 0.005$) and more likely to be female (72 % vs. 59 %, $p = 0.01$). Both groups had similar median serum haemoglobin (109 vs. 108, $p = 0.22$). Gastritis (35.2 %) and oesophagitis (25.7 %) were the most common endoscopic diagnoses in both groups. Upper GI cancers were found in 0.7 % (3/415) of patients with IDA compared with 1.7 % (2/112) of patients with non-IDA ($p = 0.28$). Colorectal cancers were found in 3.3 % (9/269) of patients with IDA compared with 1.5 % (1/65) of patients with non-IDA ($p = 0.69$). In multivariate analysis, age (OR 0.94, 95 % CI 0.89-0.98, $p = 0.01$) and haemoglobin (OR 1.03, 95 % CI 1.01-1.05, $p = 0.004$) were associated with malignancy.

Conclusions The diagnostic yield of endoscopy in asymptomatic patients with non-IDA is similar to those with iron deficiency anaemia. Prospective studies are required to confirm our findings.

eP190 USEFULNESS OF MAGNETIC ENDOSCOPE IMAGING (MEI) FOR COLONOSCOPIC TRAINING ; SINGLE CENTER RANDOMISED CONTROLLED TRIAL

Authors [Shim J.¹](#), [Keum B.¹](#), [Jeon H.J.¹](#), [Lee J.M.¹](#), [Choi H.-S.¹](#), [Kim E.S.¹](#), [Jee Y.-T.¹](#), [Lee H.S.¹](#), [Chun H.J.¹](#)

Institute 1 Korea University College of Medicine, Gastroenterology, Seoul, Korea, Republic of

DOI 10.1055/s-0042-1745043

Aims Loop formation is a common event that occurs frequently during colonoscopy. The development of looping can cause pain and discomfort to the patient and make advancement of the colonoscope difficult. The magnetic endoscope imaging (MEI) is built in to show that with its use outcomes are improved during colonoscopy. Aim of this study is to evaluate the usefulness of the ScopeGuide Assist for trainee endoscopists with respect to the number of loop formation.

Methods This study included a randomized controlled trial of 70 patients who were undergoing a colonoscopy at the endoscopic units of the Korea university anam hospital from May 2021 to September 2021. Patients were randomized to either group ; SPG group vs. non-SPG group. 5 trainee endoscopists are included and used the Scopeguid. In non-SPG group, SPG monitor was hidden from view to the operator. The primary end point was the proportion of loop formation.

Results The study consisted of a total 70 patients, and the rate of loop formation was significantly less in the group using the Scopeguide. (SPG 62.9 % vs non-SPG 88.6 % ; $p = 0.012$) The mean insertion time was 8.3 ± 4.73 in the SPG group and 6.98 ± 3.29 in the non-SPG group, and was not significant with a p value of 0.190. (SPG 22/35, 62.9 % vs non-SPG 14/35 11.44 % ; $p = 0.056$) but position change showed significant difference between SPG group and non-SPG group. (SPG 0.0 % vs non-SPG 11.4 %, $p = 0.039$)

Conclusions For the trainee endoscopists, use of MEI reduced the rate of loop formation in routine colonoscopy.

eP191 ANTIBIOTIC PROPHYLAXIS FOR ENDOSCOPIC RETROGRADE CHOLANGIOPANCREATOGRAPHY (ERCP): A SYSTEMATIC REVIEW AND META-ANALYSIS

Authors [Shinin Merchan M.F.¹](#), [Flaksbaum Moll C.¹](#), [Vera Intriago J.M.¹](#), [Silvino Do Monte Junior E.¹](#), [Mendonça Proença I.¹](#), [De Moura D.T.H.¹](#), [Marques Bernardo W.¹](#), [Guimaraes Hourneaux De Moura E.¹](#)

Institute 1 Hospital das Clínicas, University of São Paulo School of Medicine, Gastroenterology, São Paulo, Brazil

DOI 10.1055/s-0042-1745044

Aims The prophylactic use of antibiotics in endoscopic retrograde cholangiopancreatography is still controversial. The literature is yet conflicting about indications. The aim of this meta-analysis is to assess antibiotic prophylaxis to reduce the incidence of septicemia and cholangitis in patients undergoing elective ERCP.

Methods This systematic review and meta-analysis. Searches were performed on databases: MEDLINE, EMBASE, and Cochrane Central. The risk of bias assessment was performed using the Cochrane revised Risk-of-Bias tool for randomized trials (ROB-2) and for non-randomized studies (ROBINS-1). The quality of evidence was assessed using standards of the Grading of Recommendation Assessment, Development and Evaluation (GRADEpro). The software tool used to evaluate the meta-analysis was the Review Manager 5.

Results Seven randomized and two observational studies were included, with a total of 1542 patients. The randomized clinical trials (RCT) and observational studies were analyzed separately. The RCT showed a reduction of 3 % in the risk of cholangitis after ERCP (RD -0.03; IC -0.05 -0.01; $P = 0.009$). Regarding septicemia, the RCTs demonstrated a risk reduction of 10 % on the antibiotic prophylaxis group. Considering the randomized work on an evaluation of septicemia, there was a 10 % reduction, no risk of sepsis, in the group that had antibiotic prophylaxis 10 % [CI (-0.15, -0.05); $P < 0.0001$]. However, the observational studies evidenced a benefit for the group that did not have prophylactic antibiotics with an [RD 0.22; IC (0.09-0.34); $P = 0.0007$].

Conclusions The prophylactic use of antibiotics in patients undergoing elective ERCP can reduce the risk of cholangitis and bacteremia.

eP192 A QUALITATIVE QUESTIONNAIRE BASED STUDY TO INVESTIGATE PATIENT PREFERENCE AND BARRIERS FOR THE TIMING OF BOWEL PREPARATION PRIOR TO MORNING COLONOSCOPY

Authors Dash J.¹, Siggins K.¹, Baker-Moffatt M.¹, Bombeo L.¹, Downe H.¹, Wilson P.¹, Aslam S.P.¹, Htet H.¹, Abdelrahim M.¹, Bhandari P.¹

Institute 1 Portsmouth Hospitals University NHS Trust, Portsmouth, United Kingdom

DOI 10.1055/s-0042-1745045

Aims In the UK split preparation isn't routinely used for morning colonoscopies despite evidence showing split dose preparation results in better quality bowel cleansing. This study aims to identify patient preference for bowel preparation timing and explore barriers and solutions for introducing split dosing for morning colonoscopy.

Methods Prospective survey-based study of patients attending endoscopy. Patients were asked to select their preference for bowel preparation timing-option A (same day), option B (split dosing) or option C (day before). Factors influencing this were explored and patients were asked their preference again following explanation for the rationale of split-preparation.

Results 304/346 patients participated in the questionnaire while attending for either morning colonoscopy (n = 154) or flexible sigmoidoscopy (n = 150). 58.2 % (n = 177) of patients initially selected day-before preparation. The main reasons given were avoiding waking up early (46.2 %) and not wanting to take it before bed (20.2 %). There was no statistically significant difference in patient choice when age, sex, employment status, education level or previous bowel preparation were taken into account. In those who chose day-before preparation, following education regarding the superiority of split preparation, 89.8 % were open to changing. This brought the total to 97.7 % who would consider split preparation (Table 1).

► Table 1

	Split preparation	Day prior preparation	
Pre patient education patient preference	41.8 %	58.2 %	
Post patient education patient preference	97.7 %	2.3 %	p < 0.01

Conclusions The main barrier to split preparation regimens for morning colonoscopies in the UK is related to patient preference of avoiding anti-social hours. This can be overcome following adequate patient education regarding the superiority of split dose preparation. These results can be used to implement split dose preparation more widely for morning colonoscopy procedures.

eP193 ANTIBIOTIC PROPHYLAXIS FOR COLORECTAL ENDOSCOPIC SUBMUCOSAL DISSECTION- IS IT DOGMA?

Authors Siggins K.¹, Htet H.¹, Aslam S.P.¹, Abdelrahim M.¹, Subramaniam S.¹, Bhandari P.¹

Institute 1 Portsmouth Hospitals University NHS Trust, Portsmouth, United Kingdom

DOI 10.1055/s-0042-1745046

Aims Antibiotic prophylaxis is widely used during endoscopic submucosal dissection (ESD) which usually mandates hospital admission post-procedure. There is also suggestion that low rectal resections carry higher risk of sepsis.

ESD is associated with high risk of bleeding and perforation. This can result in the need for admission. In our centre, antibiotic prophylaxis and admission is not a routine part of patient care. In this study we looked to review our outcomes.

Methods Retrospective review of patients undergoing ESD for colorectal lesions at a single UK tertiary centre.

Results We reviewed 403 consecutive colorectal ESDs carried out at our tertiary centre. Antibiotic prophylaxis was given in 5 % (n = 20) of cases for selective indications including prosthetic valves, exposed muscle and long duration of procedure. The incidence of post-procedural signs of sepsis was 0.75 % (n = 3). 6 % (n = 24) of patients were re-admitted within 30-days including 1 delayed perforation requiring surgery; 13 delayed bleeds and 10 other reasons such as pain, and cerebrovascular accident. 8 % (n = 33) of patients were admitted post-ESD including 10 procedural complications and 23 for observation or social reasons.

54 % (n = 217) of resections were carried out in the rectum. No there was no statistically significant difference in the incidence of sepsis by either lesion location (p = 0.65) or antibiotic use (p = 0.42). (Table 1)

► Table 1

Re-admission reason	Rectum (n = 217)	Colon (n = 186)	Anti-biotics (n = 20)	No anti-biotics (n = 383)
Sepsis (n = 3)	2 (0.5 %)	1 (0.25 %)	1 (0.25 %)	2 (0.5 %)
Bleeding (n = 13)	9 (2.2 %)	4 (1 %)	0 (0 %)	13 (3.2 %)
Pain (n = 7)	5 (1.2 %)	2 (0.5 %)	3 (0.75 %)	4 (1 %)

Conclusions Our outcomes show < 1 % of patients develop sepsis related complications. Rectal resections were not a predictor for this. 6 % of patients re-presented within 30-days. These results support avoiding use of routine anti-biotic prophylaxis or admission after ESD.

eP194 MOTORIZED SPIRALED ENTEROSCOPY: EFFICACY AND SAFETY A. SPORTES, GHARBI, J-F REY INSTITUT ARNAULT TZANCK -SAINT LAURENT DU VAR -FRANCE

Author Sportes A.^{1, 2, 3}

Institutes 1 institut arnault tzanck, hepatogastroenterology, Saint Larent Du Avr, France; 2 institut arnault tzanck, Saint Larent Du Avr, France; 3 institut arnault tzanck, hepatogastroenterology, Saint Larent Du Avr, France

DOI 10.1055/s-0042-1745047

Aims AIM: Motorized spiraled Enteroscopy (MSE) is a new equipment developed by Olympus (Power spiral) in order to improve small bowel exploration. It's a modify version with a motor from the initial manual spiraled enteroscope the goal of our study was to assess its efficacy and safety on clinical practice

Methods Method and patients: it's a prospective study in France where we were the first center to introduce this new endoscopic tool.

The primary end point was the diagnosis yield in patents with abnormalities observed during video capsule endoscopy.

The secondary end points were: percentage of total examination down to cecum; percentage of therapeutic Enteroscopy; side-effects related to procedure

Results RESULTS :150 patients were enrolled (mean age 27 years old + /- 11, 1; men 86, female 64).

74% of patients had cardiovascular disease with at least antiplatelet drugs or anticoagulant treatment main indication was suspected or occult gastro-intestinal bleeding (114 patients, 76%), iron deficiency anemia after normal gastroscopy and colonoscopy (24 patients) but also suspected small bowel inflammation (8 patients) and one case of capsule retention diagnosis yield of our study was 60% (90/150): angiodysplasias 47% (70/150); polyps or carcinomas (4%; 6/150); inflammation (6%, 9/150), and miscellaneous lesions (3% 5/150) therapeutic endoscopy was performed in 52% of cases (78/150).

side-effects were observed in 42 patients (28%) but minors mucosal damages (small bowel 4; esophagus 10) with any clinical outcome. No pancreatitis, perforation or cardiovascular disorders were observed

Conclusions conclusion: our study shows excellent results of this new equipment and overhold safety

eP195 FEASIBILITY OF FLUORESCENCE CONFOCAL MICROSCOPY FOR RAPID EVALUATION OF ENDOSCOPIC ULTRASOUND THROUGH THE NEEDLE BIOPSY IN PANCREATIC CYSTIC NEOPLASM: A PILOT STUDY

Authors Stigliano S.¹, Di Matteo F.M.¹

Institute 1 Campus Bio-Medico University Hospital, Endoscopy Department, Rome, Italy

DOI 10.1055/s-0042-1745048

Aims Endoscopic ultrasound guided through-the-needle biopsy (EUS-TTNB) has improved the diagnostic algorithm of pancreatic cystic neoplasms (PCN). However, the fragments obtained are very small and sometimes not eye-visible with the risk of loss during the preparation process.

Fluorescence Confocal microscopy (FCM) allows imaging of tissues in the fresh state, requiring minimal preparation without damage or loss of tissue.

The aim of this study was to assess the FCM feasibility in predicting histological adequacy of EUS-TTNB samples.

Methods Single centre prospective study conducted on consecutive patients with PCN who underwent EUS-TTNB at the Endoscopy Unit of Campus Bio-Medico University hospital. A 19 G needle with pre-loaded micro-forcep was used in all cases. Obtained samples were placed directly in a dedicated scaffold (Cyto-matrix, UCS Diagnostics) and evaluated at FCM and classified as "Inadequate" or "Adequate" (serous or mucinous).

Results In this pilot study four patients were enrolled (25% male; mean age 65 ± 15). The PCN's mean size was 34 ± 6 mm. Mural node was present in 50% of them. The mean biopsy number was 4 ± 1. In all cases FCM was able to show the macro image of the sample and to create a digital image. The 75% of samples was defined adequate and in two cases provide the mucinous diagnosis.

Conclusions FCM represents a new technique successfully applicable to micro-histological specimens. It provides fast information about sample adequacy in small specimens with good agreement with the final histology. However, a larger sample is necessary to confirm these data.

eP196 IMPACT OF THE COVID-19 PANDEMIC ON UPPER GASTROINTESTINAL ENDOSCOPY ACTIVITY

Authors Tababi R.¹, Mrabet S.¹, Hassine A.¹, Harbi R.¹, Akkari I.¹, Hassine A.¹, Ben Jazia E.¹

Institute 1 Farhat Hached University Hospital, Gastroenterology, Sousse, Tunisia

DOI 10.1055/s-0042-1745049

Aims The Coronavirus-disease-2019 (COVID19) pandemic has clearly disrupted healthcare systems. Gastrointestinal endoscopy has been affected as well. This study aimed to evaluate the effect on upper gastrointestinal endoscopy (UGE) activity in terms of volume alongside indications and results.

Methods We conducted a single-centre retrospective study, including all UGE, over a period of eight months. We defined two phases: pre-pandemic (November 2019-February 2020) and 1st pandemic wave (March 2020-June 2020).

Results Four hundred and eighteen patients with a mean age 49.5 years ± 17.1 years were included, of which 57.4% were female. Comparing the pandemic phase to baseline, the number of UGE declined of 29.4% (245 vs 173). There was a significant drop in outpatients' proportion undergoing UGE (73.5% to 49.7%, p < 0.01). However, the volume of urgent endoscopy did not change (16.3-18.5%, p = 0.56). Regarding UGE indications, the followings did not vary significantly: gastrointestinal bleeding (15.1-15.6%, p = 0.50), caustic ingestion (0.4-1.2%, p = 0.37), epigastric pain (51.7-54.3%, p = 0.69), diarrhoea (4.8-4.3%, p = 1.00), dysphagia (10.9-8.5%, p = 0.54) and anaemia (15-18.1%, p = 0.52). Nevertheless, a mild decline in gastroesophageal-reflux-dictated UGE was observed (-6.4%, p = 0.03) along with a rise in vomiting-driven UGE (+8%, p = 0.02). Furthermore, variceal surveillance proportion increased (+31.3%, p < 0.01) while monitoring *Helicobacter Pylori* eradication endoscopically diminished markedly (-29.6%, p < 0.01). Concerning UGE findings, compared to benchmark, no significant dissimilarity was found: normal UGE (12.9-12.9%, p = 0.99), erythematous mucosa (47.1-44.4%, p = 0.59), reflux oesophagitis (7.5-6.4%, p = 0.68), peptic ulcer (15.8-9.9%, p = 0.08), portal-hypertension signs (9.2-14.8%, p = 0.08) and tumour (0.8-2.3%, p = 0.24).

Conclusions COVID19 pandemic lessened UGE volume and moulded its indications to a relatively different distribution, without influencing the endoscopic findings.

eP197 IMPACT OF COVID-19 PANDEMIC ON COLONOSCOPY ACTIVITY

Authors Tababi R.¹, Mrabet S.¹, Hassine A.¹, Harbi R.¹, Imen A.¹, Hassine A.¹, Ben Jazia E.¹

Institute 1 Farhat Hached University Hospital, Gastroenterology, Sousse, Tunisia

DOI 10.1055/s-0042-1745050

Aims Coronavirus disease 2019 (COVID19) pandemic has plainly restrained activities in healthcare facilities, notably the ability to carry out colonoscopy. The purpose of this study was to assess the repercussions on colonoscopy load as well as its indications and findings.

Methods We performed a single-centre retrospective study spread over a period of eight months. We delimited two time-intervals: pre-pandemic (November 2019 – February 2020) and the 1st pandemic wave (March 2020 – June 2020). We included all colonoscopies carried out during this period.

Results One hundred and ninety-seven patients with mean age of 53.4 years ± 15.7 years and M/F sex-ratio of 1.32 were included. Comparing the pandemic phase to the baseline period, the mean age of patients undergoing colonoscopy decreased mildly (55.7 vs 49.8 years; p = 0.01) while the sex distribution did not change (41.3-46.1% females, p = 0.51). The volume of colonoscopies dropped considerably of 37.2% (121 vs 76) along with outpatients' proportion (81.8% to 63.9%, p < 0.01). Screening colonoscopy numbers declined recognisably (13.2 to 0%, p < 0.01) whilst both diagnostic and surveillance colonoscopies did not vary significantly in proportion (diagnostic: 72.7-81.6%, p = 0.15; surveillance: 14-18.4%, p = 0.41). Likewise, colonoscopic findings did not mismatch when compared to benchmark period, namely: normal colonoscopy (63.3-57.3%, p = 0.40), polyps (15-8%, p = 0.15), diverticula (3.3-8%, p = 0.14), angiodysplasia (0.8-1.3%, p = 0.62), features of inflammatory bowel disease (11.7-17.3%, p = 0.26) and colorectal tumour (5-6.7%, p = 0.42).

Conclusions COVID19 pandemic toned down colonoscopy activity and, above all, markedly impeded colorectal cancer endoscopic screening. Yet, it did not reshape the distribution of colonoscopic findings.

eP198 CAUSTIC INGESTION:ENDOSCOPIC FINDINGS AND COMPLICATIONS

Authors Tammouch Z.¹, El mqaddem O.², Rais K.¹, Amri F.¹, ElEulj O.¹, Oustani M.¹, Nasiri M.¹, Zazour A.¹, Khannoussi W.¹, Kharrasse G.¹, Ismaili Z.¹

Institutes 1 Mohammed the First University, Digestive Disease Research Laboratory, The department of Hepato-gastroenterology, Mohammed VI University Hospital, Oujda, Morocco; 2 Mohammed the First University, Digestive Disease Research Laboratory, the departement of hepato-gastro-entérology, Mohammed VI University hospital, Oujda, Morocco
DOI 10.1055/s-0042-1745051

Aims The aim of this study is to determine clinical ,endoscopic aspects of caustic digestive lesions and complications in relation to the type of caustic substance.

Methods Retrospective study conducted in the hepato-gastroenterology department between January 2017 and November 2021 including 49 cases of caustic ingestion

Results 49 patients were included. The mean age was 31 years (16-66). 51 % were female, sex ratio M/F 0.9

Caustic ingestions were accidental in 17 % of cases and attempted suicide in 83 % of cases.

Hydrochloric acid was the most commonly used caustic (48 % of cases) followed by chlorine-bleach in 42 % of cases, pesticide in 6 %, potash and lye-soude in 2 %.

In 26 % of the cases, patients presented abdominal pain,vomiting and gastro-intestinal bleeding, one case of perforation was suspected.

CT scan detected in 21 % thickening of gastric, duodenal and esophageal wall, in 4 % of cases there was a defect of enhancement of the esophageal mucosa

► Table 1

Caustics substance	Esophageal endoscopy	Gastric endoscopy	Duodenal endoscopy	Complications
Hydrochloric acid (48 % of cases)	IV (4 %) IIIB(12 %) IIIA(25 %) IIB (29 %) IIA (12 %) I (4 %)	III B(25 %) IIIA (16 %) IIB (4 %) IIA(8 %) I(8 %)	IIB (25 %) IIA (8 %)	+ esophageal stenosis (12.5 %) + total stenosis of the pharyngo-esophageal sphincter (4 %)
Chlorine bleach (42 % of cases)	IIIA(4 %), IIB(14 %), IIA (14 %)	IIIA(4 %), IIB (4 %), I(23 %)	No lesion detected	+ esophageal stenosis (9 %)
Pesticide (6 % of cases)	No lesion detected	No lesion detected	No lesion detected	No lesion detected
Potash (2 % of cases)	No lesion detected			
Lye-soude (2 % of cases)				
No lesion detected	I(100 %) No lesion detected	No lesion detected No lesion detected	No lesion detected No lesion detected	

Table of caustic digestive lesions staging Zargar classification and their complications in relation to the type of caustic substance

The main complication was esophageal stenosis in 11 % of cases , Endoscopic dilatation was used in 2 % of cases with good progress , surgery was used in 13 % of cases, 7 % had a feeding jejunostomy , 6 % had a total eso-gastrectomy with esophagostomy and feeding jejunostomy as well as a coloplasty afterwards, 8 % with good progress and 2 deaths.

Conclusions In our study severe endoscopic lesions detected were in hydrochloric acid ingestion as well as short and long-term complications regardless of the amount ingested,

eP199 AN 18 MONTH REVIEW OF BOWEL PREPARATION QUALITY AMONG IN-PATIENT LEFT-SIDED COLONOSCOPIES

Authors Taylor J.¹, Zhang N.¹, Cudmore J.², Murphy C.L.²

Institutes 1 University College Dublin, School of Medicine, Dublin, Ireland; 2 Mater Misericordiae University Hospital, Department of Gastroenterology and Hepatology, Dublin, Ireland
DOI 10.1055/s-0042-1745052

Aims Left-sided colonoscopies (LCs) are commonly performed for investigation of lower gastrointestinal symptoms such as fresh rectal bleeding among in-patients. Their success depends on effective cleansing of the bowel contents usually with a laxative enema. This study aimed to assess the quality of bowel preparation reported on all in-patient LCs performed over an 18-month period in MMUH.

Methods A retrospective chart review of all in-patient LC reports at MMUH from January 2020 – May 2021. Preparation quality was defined by the automatic reporting parameters of either “excellent/good”, “adequate/satisfactory”, “poor” or “failed due to poor prep” as entered on the Endorad reporting system.

Results 321 in-patient LCs were performed in the stated timeframe at MMUH. The most common method of bowel preparation was phosphate enema, used in 79.8 % of LCs. The reported quality of bowel preparation across all LCs showed 20.9 % as “excellent/good”, 48.3 % as “adequate/satisfactory”, 28.3 % as “poor”, and 2.5 % as “failed due to poor prep”. Therefore 69.2 % of LCs were adequate/satisfactory or above. 4.1 % of all LCs were booked for repeat due to inadequate bowel preparation.

Conclusions This study showed that > 1/3 of in-patient LCs had poor preparation or failed due to poor preparation. Given the intercurrent pressures on endoscopy waiting lists, this is an area which could be targeted for improvement to avoid further investigations. Rigorous patient pre-assessment for fitness for procedure and adequate evaluation of response to initial enema with a view to repeating preparation if inadequate response are two such methods which could be implemented.

eP200 KNOWLEDGE, PERCEPTIONS AND BEHAVIOURS OF ENDOSCOPISTS TOWARDS THE USE OF ARTIFICIAL INTELLIGENCE AIDED COLONOSCOPY

Authors Tham S.¹, Koh F.H.², Endoscopy Centre S.³, Teo E.-K.^{4,5}, Lin C.-L.⁵, Foo F.-J.^{2,3}

Institutes 1 Sengkang General Hospital, SingHealth Services, Department of General Surgery, Singapore, Singapore; 2 Sengkang General Hospital, SingHealth Services, Colorectal Service, Department of General Surgery, Singapore, Singapore; 3 Sengkang General Hospital, Endoscopy Centre, Division of Hyperacute Care, Singapore, Singapore; 4 Sengkang General Hospital, Chief Executive Officer, Singapore, Singapore; 5 Sengkang General Hospital, SingHealth Services, Department of Gastroenterology and Hepatology, Singapore, Singapore
DOI 10.1055/s-0042-1745053

Aims Recent developments in artificial intelligence (AI) systems have enabled advancements in endoscopy. Deep learning systems, using convolutional neural networks, have allowed for real-time AI-aided detection of polyps with higher sensitivity than the average endoscopist. However, not all endoscopists welcome the advent of AI systems.

Methods We conducted a survey on the knowledge of AI, perceptions of AI in medicine, and behaviours regarding use of AI-aided colonoscopy, in a single centre 2 months after the implementation of Medtronic's GI Genius in colonoscopy. We obtained a response rate of 66.7 % (16/24) amongst consultant-grade endoscopists. Fisher's exact test was used to calculate significance of correlations.

Results Knowledge of AI varied widely amongst endoscopists. Most endoscopists were optimistic about AI's capabilities in performing objective administrative and clinical tasks, but reserved about AI providing personalised, empathetic care. 68.8 % (n = 11) of endoscopists agreed or strongly agreed that GI Genius should be used as an adjunct in colonoscopy. In analysing the 31.3 % (n = 5) of endoscopists who disagreed or were ambivalent about its use, there was no significant correlation with their knowledge or perceptions of AI, but a significant number did not enjoy using the programme (p-value = 0.0128) and did not think it improved the quality of colonoscopy (p-value = 0.033).

Conclusions Acceptance of AI-aided colonoscopy systems is more related to the endoscopist's experience with using the programme, rather than general knowledge or perceptions towards AI. Uptake of such systems will rely greatly on how the device is delivered to the end user.

eP201 HAEMOSTASIS COURSE IMPROVES TRAINEES' TECHNICAL AND NON TECHNICAL SKILLS

Authors [Thoufeeq M.¹](#), [McNally M.²](#), [Shiha M.²](#)

Institutes [1 Sheffield teaching Hospitals, Sheffield, United Kingdom;](#)

[2 Sheffield Teaching Hospitals, Sheffield, United Kingdom](#)

DOI [10.1055/s-0042-1745054](#)

Aims We wanted to identify the benefits of a 1 day haemostasis course in improving trainees' knowledge and skills in managing upper gastrointestinal bleeding (UGIB).

Methods A 1 day haemostasis course was conducted in December 2021, this included lectures on UGIB management and hands-on training on various haemostasis modalities. The faculty included 15 skilled gastroenterologists. The hands on methods were performed on porcine and other synthetic models. Trainees' pre-course knowledge and skills were enquired 2 days prior to the course and post course knowledge and skills were enquired 2 days after. These were done using SurveyMonkey.

Results A total of 21 delegates attended the course. All 21 completed the pre-course knowledge questionnaire. The post course questionnaire was completed by 16 trainees so far. An interim analysis was performed. Significant improvements were reported post-course (p < 0.001), especially in the hands-on and non-technical skills. There was a significant improvement in trainees' perception regarding the mental and physical demands of the tasks.

Conclusions A structured 1-day haemostasis course helps trainees to improve their knowledge and skills. Significant improvement was noted in their non-technical skills and attitudes and perceptions pertaining to the mental and physical demands of the tasks among endotherapy.

eP202 COMPARATIVE PERFORMANCE AND EXTERNAL VALIDATION OF THREE DIFFERENT SCORES IN PREDICTING INADEQUATE BOWEL PREPARATION AMONG INPATIENTS UNDERGOING COLONOSCOPY

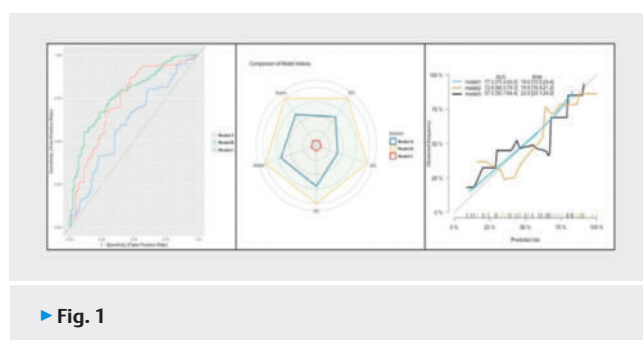
Authors [Gkolfakis P.¹](#), [Kapizioni C.²](#), [Tziatzios G.¹](#), [Facciorusso A.³](#), [Frazzoni L.⁴](#), [Thomopoulos K.⁵](#), [Potamianos S.⁶](#), [Christodoulou D.⁷](#), [Papadopoulos V.⁸](#), [Fuccio L.⁴](#), [Hassan C.⁹](#), [Triantafyllou K.¹](#)

Institutes [1 Medical School, National and Kapodistrian University of Athens, "Attikon" University General Hospital, Hepatogastroenterology Unit, Second Department of Internal Medicine-Propaedeutic, Athens, Greece;](#) [2 Addenbrooke's Hospital, Cambridge University Hospitals NHS Trust, Department of Gastroenterology, Cambridge, United Kingdom;](#) [3 University of Foggia, Gastroenterology Unit, Department of Surgical and Medical Sciences, Foggia, Italy;](#) [4 University of Bologna, IRCSS- S. Orsola-Malpighi Hospital, Department of Medical and Surgical Sciences, Bologna, Italy;](#) [5 University Hospital of Patras, Division of Gastroenterology, Department of Internal Medicine, Patras, Greece;](#) [6 Faculty of Medicine, School of Health Sciences, University of Thessaly, Department of Gastroenterology, Larissa, Greece;](#) [7 University Hospital & Faculty of Medicine, School of Health Sciences, University of Ioannina, Division of Gastroenterology, Ioannina, Greece;](#) [8 Koutlimbaneio & Triantafylleio General Hospital, Department of Gastroenterology, Larissa, Greece;](#) [9 IRCCS Humanitas Research Hospital, Department of Gastroenterology, Milan, Italy](#)
DOI [10.1055/s-0042-1745055](#)

Aims Predictive scores aim to predict bowel preparation adequateness among hospitalized patient undergoing colonoscopy. We evaluated the comparative efficacy of these scores for inadequate bowel cleansing in a cohort of Caucasian inpatients.

Methods We performed a post-hoc analysis of data from a cohort of inpatients undergoing colonoscopy in 4 tertiary Greek centers to validate the three models currently available (Model A, B and C). We used the Akaike Information Criterion (AIC) to quantify performance of each model, while Harrell's c-index, as area under the receiver operating characteristics (ROC) curve (AUC), verified the discriminative ability to predict inadequate bowel prep. Primary endpoint was comparison of performance among models for predicting inadequate bowel cleansing.

Results Overall, 261 patients [121 (46.4 %) female, 100 (38.3 %) bedridden, mean age 70.7 ± 15.4 years] were included in the analysis. Model B showed the highest performance (Harrell's c-index: AUC 77.2 % vs. 72.6 % and 57.5 %) compared to Models A and C, respectively; Figure 1). It also achieved higher performance (Harrell's c-index: AUC 72.21 % vs. 64.97 % and 59.66 %) compared to Models A and C, respectively) for the subgroup of mobilized inpatients. Finally, Model B performed better in predicting patients with incomplete colonoscopy due to inadequate bowel preparation (Harrell's c-index: AUC 74.23 % vs. 69.07 % and 52.76 % compared to Models A and C, respectively).



► Fig. 1

Conclusions Predictive Model B outperforms its comparators regarding prediction of inpatients with inadequate bowel preparation. This model is particularly advantageous when used to evaluate mobilized inpatients.

eP203 PERFORMANCE AND APPLICABILITY OF A FIRST GENERATION SINGLE-USE DUODENOSCOPE: A SINGLE-CENTER COHORT STUDY

Authors van Malenstein H.¹, Persyn D.², Schuermans A.³, Dreesen M.⁴, Meert W.⁴, Buysschaert K.¹, Van Der Merwe S.¹, Laleman W.¹

Institutes 1 University Hospital Leuven, Department of Gastroenterology and Hepatology, Leuven, Belgium; 2 AZ Damiaan, Department of Gastroenterology and Hepatology, Oostende, Belgium; 3 University Hospital Leuven, Department of Infection Control and Epidemiology, Leuven, Belgium; 4 University Hospital Leuven, Department of Pharmaceutical and Pharmacological Sciences, Leuven, Belgium

DOI 10.1055/s-0042-1745056

Aims Despite standardization and optimization of disinfection protocols, duodenoscopy-related infections remain an emerging threat for patients undergoing ERCP. Single-use duodenoscopes could represent a potential alternative avenue to circumvent the problem of reprocessing and thus risk of exogenous patient-to-patient transmission. In this study we tested the feasibility and technical success rate of a recently made available single-use duodenoscope.

Methods The usability, performance and safety of a recently developed single-use duodenoscope was evaluated in a cohort of patients scheduled for ERCP. In this single center study clinical data were collected and a standardized evaluation of scope performance was executed. Outcomes included performance ratings of the single-use duodenoscopes, adverse events (assessed at 3 days and 1 week), and crossover rate to reusable duodenoscopes.

Results Performance of single-use duodenoscopes was evaluated in 52 consecutive patients. The ERCP completion rate with a single-use duodenoscope was 90.4%, after cross-over to reusable duodenoscope 94.2%. The mean ASGE grade was 2.7 with 27 procedures (51.9%) considered as advanced level complexity (ASGE grade 3 & 4). Performance rating showed that 94% of the therapeutic treatments were assessed comparable to when using a traditional reusable duodenoscope. Overall satisfaction amounted to 80%. No major adverse events were experienced related to the use of the single-use endoscope.

Conclusions Single-use duodenoscopes can provide an alternative to avoid the intensive and often inconsistent results of cleaning and disinfection procedures. We confirm feasibility, adequate performance characteristics and safety over a broad range of ERCP procedures, both in terms of indication and complexity, of a recently developed first-generation single-use duodenoscope.

eP204 TRAINEE PERFORMANCE IS CORRELATED WITH THE RISK OF PROCEDURE-RELATED ADVERSE EVENTS DURING HANDS-ON TRAINING ERCPs: RESULTS FROM THE INTERNATIONAL MULTICENTER TIERS STUDY

Authors Voiosu T.A.^{1,2}, Bengus A.², Bronswijk M.³, Voiosu A.^{1,2}, Boskoski I.⁴, Klarin I.⁵, Smarandache B.⁶, Balanescu P.¹, Lyutakov I.⁷, Busuioc B.⁶, Mateescu R.B.^{1,2}, Wani S.⁸, Study Group S TIER

Institutes 1 Carol Davila Faculty of Medicine, Internal Medicine, Bucharest, Romania; 2 Colentina Clinical Hospital, Gastroenterology, Bucharest, Romania; 3 Imelda Hospital, Gastroenterology, Bonheiden, Belgium; 4 Policlinico Agostino Gemelli, Endoscopy, Rome, Italy; 5 Opcia Bolnica Zadar, Gastroenterology, Zadar, Croatia; 6 Spitalul Clinic I Cantacuzino, Gastroenterology, Bucharest, Romania; 7 University Hospital Tsaritsa Yoanna – ISUL, Gastroenterology, Sofia, Bulgaria; 8 University of Colorado, Gastroenterology, Denver, United States

DOI 10.1055/s-0042-1745057

Aims Operator skill is a recognized risk factor for procedure related adverse events (AE) at ERCP. We aimed to study whether trainee technical performance as assessed by a validated instrument such as the TEESAT score can influence ERCP AE rates.

Methods We analyzed data from a prospective, multicenter, observational study (the TIERS study) in 5 European endoscopy training centers. Data on consecutive ERCP procedures with any degree of hands on trainee involvement was collected using standardized forms, including the overall TEESAT score attributed by the trainer to grade the technical performance of the trainee. Patients were followed for 30 days after the procedure to accurately assess outcomes and AEs. The primary outcome measure was the rate of procedure-related AE which included any of the following: technical failure of the procedure, postERCP pancreatitis, bleeding, perforation, death or prolonged hospital stay. Multivariable analysis was conducted using SPSS.

Results A total of 409 consecutive ERCPs performed by 10 trainees and 11 supervisors between September 2019 – September 2021 were included in our analysis. In a logistic regression model including the TEESAT score, patient age, gender, bilirubin levels, indication for ERCP, difficult cannulation, use of precut, level of procedure difficulty and previous technical failure, the TEESAT score was shown to be the strongest predictor of any AE occurring after a training ERCP ($p = 0.044$, OR 0.39, CI 95% 0.16-0.97), with difficult cannulation being the only other independent risk factor.

Conclusions Our findings suggest that trainee performance is correlated with procedure-related AE rates, prompting further research into this important field.

eP205 GASTROINTESTINAL BLEEDING AND ENDOSCOPIC FINDINGS IN CRITICALLY AND NON-CRITICALLY ILL PATIENTS WITH COVID-19: RESULTS FROM LEOSS AND COKA REGISTRIES

Authors Zellmer S.¹, Hanses F.^{2,3}, Muzalyova A.¹, Classen J.¹, Braun G.¹, Piepel C.⁴, Erber J.⁵, Pilgram L.⁶, Walter L.⁷, Göpel S.⁸, Hower M.⁹, Rütthrich M.M.¹⁰, Stecher M.^{11,12}, Jakob C.^{11,12}, Dhillon C.¹³, Messmann H.¹, Ebigo A.¹, Römmele C.^{1,13}

Institutes 1 University Hospital Augsburg, Clinic for Internal Medicine III – Gastroenterology and Infectious Diseases, Augsburg, Germany; 2 University Hospital Regensburg, Emergency Department, Regensburg, Germany; 3 University Hospital Regensburg, Department of Infection Prevention and Infectious Diseases, Regensburg, Germany; 4 Klinikum Bremen-Mitte, Department of Hematooncology and Infectiology, Bremen, Germany; 5 Klinikum rechts der Isar, Technical University of Munich, School of Medicine, Department of Internal Medicine II, Munich, Germany; 6 Goethe University Frankfurt, Department of Internal Medicine, Hematology and Oncology, Frankfurt, Germany; 7 Hospital St. Joseph-Stift Dresden, Clinic for Anesthesiology, Dresden, Germany; 8 University of Bochum, University Clinic for Haematology, Oncology, Haemostaseology and Palliative Care, Johannes Wesling Klinikum, Minden, Germany; 9 Klinikum Dortmund, Department of Pneumology, Infectious Diseases and Internal Medicine, Dortmund, Germany; 10 University Hospital Jena, Department of Internal Medicine II, Hematology and Medical Oncology, Jena, Germany; 11 University Hospital of Cologne, Department I of Internal Medicine, Cologne, Germany; 12 German Centre for Infection Research (DZIF), partner site Bonn-Cologne, Cologne, Germany; 13 COVID-19 Task Force, University Hospital Augsburg, Augsburg, Germany

DOI 10.1055/s-0042-1745058

Aims COVID-19 patients are at increased risk for thromboembolic events. It is unclear whether the risk for gastrointestinal (GI) bleeding is also increased.

Methods We considered 4128 COVID-19 patients enrolled in the LEOSS registry. Association between occurrence of GI bleeding and comorbidities as well as medication were examined. Additionally, 1216 patients from the COKA registry were analyzed focusing on endoscopic findings.

Results A total of 97 patients (1.8%) with GI bleeding were identified in the LEOSS and COKA registries. Of 4128 patients from the LEOSS registry, 66 patients (1.6%) had a GI bleeding. In ICU patients the rate was 4.5%. Use of therapeutic dose of anticoagulants showed a significant association with increased

incidence of bleeding in the critical phase of disease. The Charlson comorbidity index and the COVID-19 severity index were significantly higher in patients with GI bleeding than in patients without GI bleeding (5.83(SD = 2.93) vs. 3.66(SD = 3.06), $p < 0.01$ and 3.26(SD = 1.69) vs. 2.33(SD = 1.53), $p < 0.01$, respectively). In the COKA registry 31 patients (2.5%) developed a GI bleeding. Of these, the source of bleeding was identified in upper GI tract in 21 patients (67.7%) with ulcer as the most frequent bleeding source (25.8%, $n = 8$) followed by gastroesophageal reflux (16.1%, $n = 5$). In 3 patients (9.7%) GI bleeding source was located in lower GI tract caused mainly by diverticular bleeding (6.5%, $n = 2$). In 7 patients (22.6%) the bleeding localization remained unknown.

Conclusions Risk of GI bleeding seems not to be increased in COVID-19 patients. Consistent with previous findings, comorbidities and disease severity correlate with the incidence of GI bleeding.

eP206 REAL-TIME CHARACTERIZATION OF COLORECTAL POLYPS USING ARTIFICIAL INTELLIGENCE – A PROSPECTIVE PILOT STUDY COMPARING TWO COMPUTER-AIDED DIAGNOSIS SYSTEMS AND ONE EXPERT ENDOSCOPIST

Authors van der Zander Q.E.^{1,2}, Schreuder R.-M.³, Thijssen A.^{1,2}, Kusters K.C.⁴, Dehghani N.⁴, Scheeve T.⁴, Fonollà R.⁴, Winkens B.^{5,6}, van der Ende-van Loon M.C.³, de With P.H.⁴, van der Sommen F.⁴, Masclee A.A.¹, Schoon E.J.^{1,3}

Institutes 1 Maastricht University Medical Center, Department of Gastroenterology and Hepatology, Maastricht, Netherlands; 2 Maastricht University, GROW, School for Oncology and Developmental Biology, Maastricht, Netherlands; 3 Catharina Hospital Eindhoven, Department of Gastroenterology and Hepatology, Eindhoven, Netherlands; 4 Eindhoven University of Technology, Department of Electrical Engineering, Eindhoven, Netherlands; 5 Maastricht University, Department of Methodology and Statistics, Maastricht, Netherlands; 6 Maastricht University, CAPHRI, Care and Public Health Research Institute, Maastricht, Netherlands
DOI 10.1055/s-0042-1745059

Aims Artificial intelligence (AI) has great potential in gastrointestinal endoscopy. Aim was to evaluate real-time diagnostic performances of our Artificial Intelligence for ColoRectal Polyps (AI4CRP) computer-aided diagnosis system for optical diagnosis of diminutive colorectal polyps (CRPs) and compare it with CAD EYE and an expert endoscopist.

Methods AI4CRP was developed using convolutional neural networks and previously trained and tested. In this prospective real-time pilot study, AI4CRP was compared with CAD EYE® (Fujifilm, Tokyo, Japan) and one expert endoscopist unaware of AI-output. Blue light imaging was used for characterization and histopathology as gold standard. CRPs were characterized as hyperplastic (hyperplastic polyps) or neoplastic (adenomas, sessile serrated lesions[SSLs]) by AI4CRP and the endoscopist, and as hyperplastic (hyperplastic polyps, SSLs) or neoplastic (adenomas) by CAD EYE. CAD EYE's inconclusive diagnoses were excluded. Enabling self-critical AI4CRP, post-hoc analysis excluded low confidence scores.

Results Real-time testing included 30 patients with 51 CRPs (32 adenomas, 6 SSLs, 12 hyperplastic polyps). AI4CRP had a diagnostic accuracy of 80.4%, sensitivity of 82.1%, and specificity of 75.0%. For self-critical AI4CRP ($n = 37$) the diagnostic accuracy was 89.2%, sensitivity 89.7%, and specificity 87.5%. CAD EYE ($n = 49$) had a diagnostic accuracy of 83.7%, sensitivity of 74.2%, and specificity of 100.0%. For the expert endoscopist the diagnostic accuracy was 88.2%, sensitivity 94.9%, and specificity 66.7%.

► **Table 1**

	AI4CRP, %	Self-critical AI4CRP, %	CAD-EYE, %	Endoscopist, %
	($n = 51$)	($n = 37$)	($n = 49$)	($n = 51$)
Diagnostic accuracy	80.4	89.2	83.7	88.2
Sensitivity	82.1	89.7	74.2	94.9
Specificity	75.0	87.5	100.0	66.7

Conclusions AI4CRP achieved promising results, but CAD EYE's diagnostic performances were higher. CAD EYE was unable to refrain from generating diagnoses for inconclusive cases. AI4CRP provided calibrated confidences, giving the ability to reject uncertain classifications, enabling better interpretability of AI-outputs.

eP207 ENDOSCOPIC ULTRASOUND-GUIDED GASTROENTERIC ANASTOMOSIS: A SINGLE CENTER SERIES EMPHASIZING BENIGN INDICATIONS

Authors Gonzalez J.-M.¹, Ouazzani S.², Gasmi M.¹, Barthet M.¹

Institutes 1 Aix-Marseille Université, Hôpital Nord, Gastroenterology, Marseille, France; 2 Cliniques Universitaires de Bruxelles, Hôpital Erasme, Gastroenterology, Bruxelles, Belgium

DOI 10.1055/s-0042-1745060

Aims Endoscopic ultrasound-guided gastroenteric anastomosis (EUS-GEA) is a minimally invasive alternative to surgery for treating gastric outlet obstruction (GOO). This series is a single center cohort performing EUS-GE with the same manner, highlighting the rate of benign indications and management of stent dislodgement.

Methods We reviewed, from a prospective database, all consecutive EUS-GEA performed in a tertiary care French hospital, from January 2014 to March 2021. Procedures were performed with direct technique under EUS with simultaneous contrast filling of the jejunum and fluoroscopy control, for jejunal loop identification and LAMS (lumen apposition metal stent) deployment.

Results In total, 30 EUS-GEA were performed in 28 patients (64.3% men) with a median age of 67.5 years old (range: 31-86). Seventeen malignant cases were related to pancreatic adenocarcinoma ($n = 11$), ampullary tumors ($n = 4$) and neuroendocrine tumor ($n = 2$). Thirteen (43.3%) were performed for benign indications with duodenal stenosis related to chronic pancreatitis ($n = 8$) and Crohn's disease ($n = 2$) or gastroparesis ($n = 2$). Twenty cases (66.3%) were performed using 20mm Axios LAMS. The technical and clinical success rates were respectively 90% and 87.6% with no difference between benign and malignant indications. The perprocedural AEs rate was 16.6%, all due to LAMS misdeployment in the intraperitoneal cavity. 3/5 (60%) were successfully treated by salvage second Axios insertion with NOTES procedures and 2 with closure of the gastric perforation with OTSC clips.

Conclusions EUS-GJA seems to be ready for prime time since benign indications are almost half of cases and salvage therapy is efficient in case of stent dislodgement.

eP208 PERFORMANCE OF AN ARTIFICIAL INTELLIGENCE ALGORITHM FOR THE DETECTION OF GASTROINTESTINAL ANGIOECTASIA IN DEVICE-ASSISTED ENTEROSCOPY: A PILOT STUDY

Authors Ribeiro T.¹, Mascarenhas Saraiva M.¹, Afonso J.¹, Cardoso P.¹, Ferreira J.², Andrade P.¹, Cardoso H.¹, Macedo G.¹

Institutes 1 Centro Hospitalar Universitário de São João, Department of Gastroenterology, Porto, Portugal; 2 Faculdade de Engenharia da Universidade do Porto, Department of Mechanical Engineering, Porto, Portugal

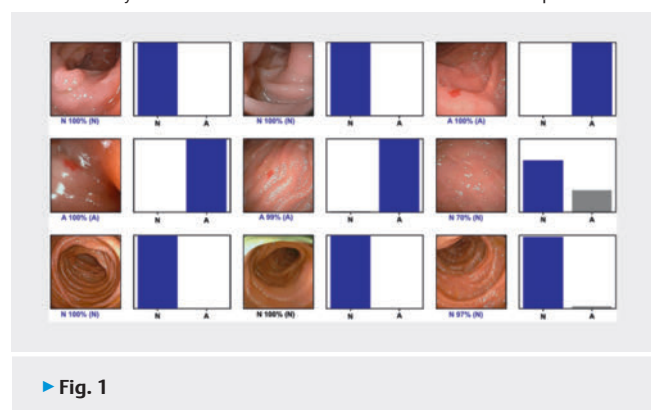
DOI 10.1055/s-0042-1745061

Aims Device-assisted enteroscopy (DAE) allows deeper exploration of the small bowel and has the advantage of allowing tissue sampling and endoscopic therapy. Suspected mid-gastrointestinal bleeding (particularly after positive capsule endoscopy) is the most frequent indication for DAE, and angiectasia is the most common lesion. Nevertheless, the detection rate in this setting remains suboptimal (68 %).

The application of artificial intelligence (AI) to different endoscopic modalities has produced exciting results. Nevertheless, their application to DAE has not been explored. We aimed to develop and test a convolutional neural network (CNN) algorithm for automatic detection of angiectasia in DAE exams.

Methods A CNN was developed based on 72 DAE exams. A total of 6740 images were included, 1395 images angiectasia, and the remaining showing normal mucosa. A training dataset and a validation dataset, comprising 80 % and 20 % of the total pool of images, respectively, were constructed. The output provided by the network was compared to a consensus classification by two DAE experts (Fig.1). The performance of the CNN was evaluated.

Results Our model automatically detected angiectasia with an accuracy of 95.3 %. Our CNN had a sensitivity, specificity, positive and negative predictive values of 88.5 %, 97.1 %, 88.1 %, and 97.0 %, respectively. The AUC was 0.98. The CNN analyzed the validation dataset at a rate of 237 frames per second.



► Fig. 1

Conclusions The authors developed a pioneer AI algorithm for automatic detection of GI angiectasia in DAE exams. The potential increase in diagnostic yield provided by these algorithms may lead to more efficient treatment of these patients.

eP209 INTRODUCTION OF A 3RD GENERATION FNB NEEDLE IN COMMUNITY HOSPITAL PRACTICE INCREASES QUALITY AND YIELD OF EUS-GUIDED TA OF SOLID PANCREATIC LESIONS

Authors Schutz H.M.¹, Anten M.-P.G.², Leeuwenburgh I.², Hoogduin K.J.³, Bruno M.J.⁴, van Driel L.M.⁴, Quispel R.¹

Institutes 1 Reinier de Graaf Gasthuis, Gastroenterology and Hepatology, Delft, Netherlands; 2 Franciscus Gasthuis en Vlietland, Gastroenterology and Hepatology, Rotterdam, Netherlands; 3 Pathan, Cyto- and Histopathology, Rotterdam, Netherlands; 4 Erasmus University Medical Center, Gastroenterology and Hepatology, Rotterdam, Netherlands

DOI 10.1055/s-0042-1745062

Aims The ASGE has formulated three quality indicators (KPI) for EUS-guided TA according to a specific performance target (PT): rate of adequate sample (PT 85 %), diagnostic yield of malignancy (PT 70 %) and sensitivity for malignancy

(PT 85 %). Feedback on performance is provided to collaborating centers of the Dutch Quality in endosonography team (QUEST) annually using these KPIs. In this study we report the effect of implementation of a 3rd generation FNB needle in one of the collaborating community hospitals on KPIs.

Methods A prospective registration of all EUS-guided TA procedures of solid pancreatic lesions in five community hospitals in the Rotterdam region, the Netherlands started in January 2015. In hospital A, all three KPIs were obtained before and after implementation of the Medtronic SharkCore needle in January 2019.

Results Before introduction of the new needle, the quality was below the predefined PTs. During the 'learning period' of the first six months, the new needle was used in 50 % of the cases coinciding with a temporary further decrease of KPIs. After this 6 month episode, the new needle was used in 100 % of cases and the KPIs improved up to the predefined PT (Table 1).

► Table 1 Differences in KPIs between different periods in hospital A.

	1 Jan 2015 – 31 Dec 2018 (n=87)	1 Jan 2019 – 1 Aug 2019 (n=37)	1 Aug 2019 – 31 Dec 2020 (n=47)
Rate of adequate sample	75 (86 %)	26 (70 %)	45 (96 %)
Diagnostic yield of malignancy	53 (61 %)	17 (46 %)	33 (70 %)
Sensitivity for malignancy	68 %	46 %	72 %

Conclusions Continued registration of quality and yield proves to be of great help to monitor changes in quality, especially when new devices or methods are introduced. With the introduction of a 3rd generation FNB needle, after an initial and temporary decrease ('learning curve'), the quality of EUS-guided TA of solid pancreatic lesions improved up to the predefined PTs.

eP210 AN ARTIFICIAL INTELLIGENCE-BASED SYSTEM FOR AUTOMATICALLY MEASURING THE SIZE OF ENDOSCOPIC GASTROINTESTINAL LESIONS

Authors Wang J.¹, Chen B.¹, Yu H.¹

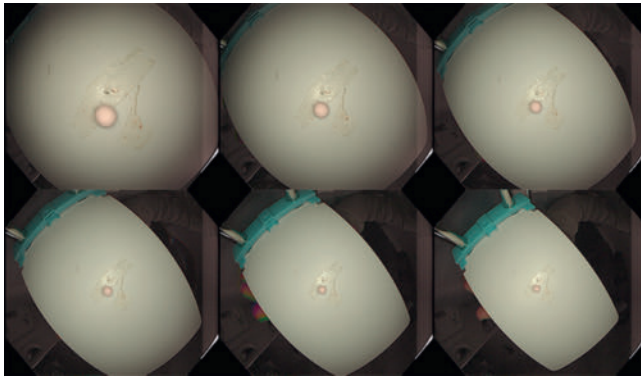
Institute 1 Renmin Hospital of Wuhan University, Wuhan, China

DOI 10.1055/s-0042-1745063

Aims In the process of gastrointestinal endoscopy, it is necessary to measure the size of lesion, which is one of the bases for the risk classification and treatment of various diseases. We aimed at developing an artificial intelligence-based system for measuring the size of gastrointestinal lesions in real-time. We intended to assess the accuracy of the system on a 3D colon model and endoscopic patients.

Methods The system was trained by deep convolutional neural networks, which integrated depth measurement and size assessment into a model. The system was developed using 5000 images. These images photographed a series of polypoid objects (2mm to 15mm) in vitro with object distance varied between 5mm and 100mm. The derived system was prospectively tested on a 3D-print colon model with polypoid objects and on 200 endoscopic videos from 170 patients.

Results The system demonstrated a 91.15 % accuracy with a mean absolute error of 2.60mm on 3D print colon compared with ground truth. On patient data, the system achieved similar metrics across different size of lesions with pathology results as gold standard. The assessments were more stable and accurate than endoscopists.



► Fig. 1

Conclusions The proposed system could automatically figure out depth and size of lesion. The novel methodology will quantify lesion assessment for all kinds of diseases, expanding the application of artificial intelligence on medicine.

eP211 DIAGNOSTIC ACCURACY OF CAPSULE ENDOSCOPY READING ASSISTED BY ARTIFICIAL INTELLIGENCE FOR EXPERT READERS: INTERIM ANALYSIS OF A SINGLE CENTER EXPERIENCE

Authors Piccirelli S.^{1,2}, Bizzotto A.², Pesatori E.V.^{1,2}, Salvi D.^{1,2}, Tettoni E.^{1,2}, Belluardo N.^{1,2}, Spada C.^{1,2}

Institutes 1 Università Cattolica del Sacro Cuore, Rome, Italy; 2 Fondazione Poliambulanza Istituto Ospedaliero, Internal Medicine, Gastroenterology and Digestive Endoscopy, Brescia, Italy

DOI 10.1055/s-0042-1745064

Aims Artificial Intelligence (AI) promises to revolutionize Capsule Endoscopy (CE) by reducing reading time while maintaining high diagnostic accuracy. Primary aim was to compare the diagnostic accuracy of AI-assisted reading with Standard Reading (SR) when both are performed by expert readers (> 500 cases) for detection of significant pathology of the small bowel. Secondary aim was to compare mean reading time of both reading modalities.

Methods 20 patients who performed Small Bowel (SB) CE (Navicam, Ankon, China) from July to November 2021 were prospectively enrolled. All capsule examinations were reviewed by an expert reader in SR and by a second blinded expert reader with AI assistance. In case of discordant results between AI and SR, a panel of experts was used to resolve the discrepancies. Main diagnoses (suspected SB neoplasia or high potential bleeding lesions) reported by each reader were compared, considering SR as gold standard. Mean reading time of the two readers was also measured and compared.

Results 19 out of 20 patients who underwent SBCE had a complete SB examination and were included in the interim per-patient analysis. SR and AI-assisted reading detected the same small bowel pathology in 15 patients and no pathology in the remaining 4 patients. Sensitivity, specificity, positive and negative predictive values of AI-based reading compared to SR were 100%. Mean SB reading time in SR and AI are reported in the table below.

Conclusions

► Table 1

	Standard Reading (SR)	AI-assisted Reading
Mean reading time ± SD	41.25 min ± 14.14	4.75 ± 2.86

AI-assisted CE reading showed high diagnostic accuracy in detection of significant small bowel pathology with a significant reduction of reading time.

eP212 THE EFFECTIVENESS AND TOLERABILITY OF VERY LOW VOLUME PREPARATION FOR COLONOSCOPY COMPARED TO STANDARD 2 L AND 4 L PEG-SOLUTIONS IN A REAL-LIFE SETTING

Authors Nyhlin N.¹, Bednarska O.², Thelin Schmidt P.^{3,4}, Wurm Johansson G.⁵, Toth E.⁵, Lindfors P.⁶

Institutes 1 Örebro University Hospital, Division of Gastroenterology, Department of Medicine, Örebro, Sweden; 2 Linköping University Hospital, Department of Gastroenterology, Linköping, Sweden; 3 Karolinska Institutet, Department of Medicine, Solna, Stockholm, Sweden; 4 Ersta Hospital, Department of Medicine, Stockholm, Sweden; 5 Skåne University Hospital, Lund University, Department of Gastroenterology, Malmö, Sweden; 6 Karolinska Institutet, Department of Clinical Neuroscience, Division of Psychology, Stockholm, Sweden

DOI 10.1055/s-0042-1745065

Aims Adequate bowel cleansing is essential for a high-quality colonoscopy. Recently, a new 1 litre (1L) polyethylene glycol (PEG) plus ascorbate solution (ASC) has been introduced. Our aims were to assess the effectiveness and tolerability of this product compared to standard 2L PEG-ASC and 4L PEG solutions, in a real-life setting.

Methods In six different endoscopy units in Sweden, all outpatients undergoing colonoscopy were either prescribed 2L PEG-ASC or 4L PEG-solutions according to local routines, or the 1L PEG-ASC, all in split dose regimen. Bowel cleansing effectiveness and patient experience was assessed using the Boston Bowel preparation scale (BBPS) and a patient questionnaire.

Results A total of 1098 patients were included in the study. Mean age was 58 years, 48 % men and 52 % women. Cecal intubation rate was 96 % for the 4L solutions, 90 % for 2L PEG-ASC and 94 % for 1L PEG-ASC. Nausea and vomiting were more common with 1L PEG-ASC compared to 2L PEG-ASC and 4L PEG (43 %, 22 %, 37 % and 12 %, 4 % and 7 % respectively). Smell, taste and total experience was graded as better for 1L PEG-ASC compared to the 4L PEG solutions ($p < 0.001$), and similar compared to the 2L PEG-ASC solution.

BBPS scores are presented in the table:

► Table 1

BBPS	4L PEG (n 371)	2L PEG-ASC (n 204)	1L PEG-ASC (n 523)	p-value (ANOVA, Tukey HSD)
Right Colon (mean, SD)	2.55 (0.55)	2.39 (0.71)	2.73 (0.54)	<0.001 (1L vs 4L) <0.001 (1L vs 2L)
Transverse colon (mean, SD)	2.69 (0.49)	2.47 (0.65)	2.79 (0.50)	<0.05 (1L vs 4L) <0.001 (1L vs 2L)
Left colon (mean, SD)	2.64 (0.51)	2.48 (0.65)	2.75 (0.54)	<0.05 (1L vs 4L) <0.001 (1L vs 2L)
Total score (mean, SD)	7.86 (1.43)	7.28 (1.97)	8.25 (1.53)	<0.001 (1L vs 4L) <0.001 (1L vs 2L)

Conclusions 1L PEG-ASC leads to better total BBPS scores and subsegment scores compared to 2L PEG-ASC and 4L PEG products. Nausea and vomiting were more common, but patient satisfaction was as good as or better than the other products.

eP213 COMPREHENSIVE REVIEW OF PUBLICLY AVAILABLE COLONOSCOPIC IMAGING DATASETS FOR ARTIFICIAL INTELLIGENCE RESEARCH: AVAILABILITY, ACCESSIBILITY AND USABILITY

Authors Houwen B.B.¹, Nass K.J.¹, Vleugels J.L.¹, Fockens P.¹, Hazewinkel Y.², Dekker E.¹

Institutes 1 Amsterdam Gastroenterology Endocrinology Metabolism, Amsterdam University Medical Centres, location Academic Medical Center, University of Amsterdam, Gastroenterology and Hepatology, Amsterdam, Netherlands; 2 Radboud University Nijmegen Medical Centre, Radboud University of Nijmegen, Gastroenterology and Hepatology, Nijmegen, Netherlands

DOI 10.1055/s-0042-1745066

Aims Publicly available datasets containing colonoscopic imaging data are valuable resources for artificial intelligence (AI)-research in gastrointestinal endoscopy. This review aimed to describe the availability, accessibility and usability of these publicly available colonoscopic imaging datasets.

Methods A systematic literature search was performed in MEDLINE and Embase to identify AI-studies describing publicly available colonoscopic imaging datasets published after 2010. Second, a targeted search using Google's (Dataset) Search, GitHub and Figshare was done to identify datasets directly. Datasets were included if they contained data about polyp detection, polyp classification or colonoscopy quality. Datasets were categorized according to their availability as: open access, open access with barriers and regulated access. To assess the potential usability of datasets, essential details of each dataset (i.e. metadata) were extracted using a structured checklist for metadata reporting.

Results We identified 16 datasets with open access, 2 datasets open access with barriers and 12 datasets with regulated access. Thirteen open access datasets focused on polyp detection, 4 on polyp classification and 3 on colonoscopy quality (containing 14,796 images and 613 videos from ≥ 286 patients). The proportion of metadata items reported by each of the included datasets ranged from 32% to 91%. Although technical details were in general well-reported, reporting of the annotation process and clinical information was poor.

Conclusions This review provides greater insight on the availability, accessibility and usability of colonoscopic imaging datasets as resources for AI-research. Future efforts should focus on improved reporting of metadata, maximising the potential of data resources and ultimately improving the quality of AI-research.

eP214 PERFORMANCE COMPARISON OF IMPROVED GAN-BASED ENDOSCOPIC ULTRASOUND PANCREATIC SCANNING NAVIGATION SYSTEM

Authors Wu H.¹, Yu H.¹

Institute 1 Renmin Hospital of Wuhan University, Hubei, China

DOI 10.1055/s-0042-1745067

Aims EUS is considered one of the most sensitive modalities for pancreatic cancer detection. But EUS is highly operator-dependent and the learning curve is steep. In previous study, we constructed a deep learning-based pancreatic scanning navigation system in EUS, which can assist in identifying the standard station of the pancreas. However, the parameter settings of Gain and Contrast of images scanned by different EUS equipments are different. Such a large generalization leads endoscopists or AI systems to have poor accuracy in identification. Generative Adversarial Networks (GAN) has a strong ability to solve image generalization. Therefore, in this study, we intended to use GAN to optimize the EUS image navigation model, and use target and text recognition to identify the Gain and Contrast parameters of the images to achieve the normalization processing of EUS images.

Methods We retrospectively collected external independent EUS image datasets for testing. Firstly, the accuracy was tested using a primary pancreatic scanning navigation model based on CNN and a improved model based on GAN.

Secondly, the test datasets were uniformly adjusted Gain and Contrast parameters and then input into the improved model based on GAN for testing and comparison.

	Accuracy		
	CNN	GAN	GAN+Normalization
Station 1	84.49%	90.10%	91.09%
Station 2	84.46%	86.03%	93.89%
Station 3	75.30%	78.01%	79.82%
Station 4	87.84%	87.84%	89.19%
Station 5	81.91%	83.91%	88.28%
Station 6	81.18%	88.82%	88.82%
Station 7	84.75%	94.17%	93.72%
Station 8	89.10%	87.82%	92.31%
Total	83.63%	87.09%	89.64%

► Fig. 1

Results A total of 2400 EUS images were collected for independent testing. The average accuracy of the primary model, the improved model and the improved model after image normalization processing was 83.63%, 87.09%, and 89.64%, respectively.

Conclusions The improved EUS scanning navigation system based on GAN can effectively improve the recognition ability of endoscopists and AI systems in EUS images.

eP215 HIGH ACCURACY OF DEEP LEARNING BASED AUTOMATIC POLYP CHARACTERIZATION IN REAL-TIME DURING COLONOSCOPY

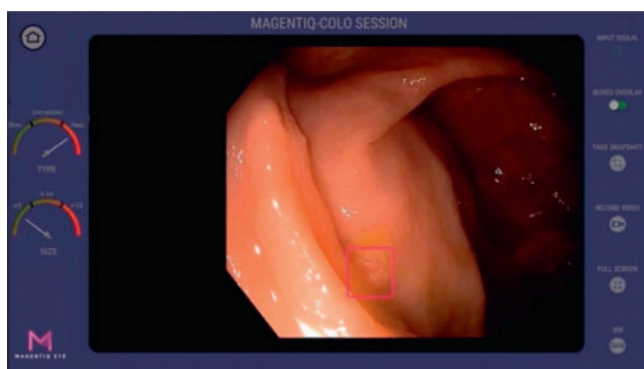
Authors Benson A.¹, Jacob H.¹, Katz L.¹, Shirin H.², Hazzan R.³, Kahloon A.⁴, Siersema P.⁵, Neumann H.⁶, Landsman M.⁷, Berzin T.⁸, Ngamruengphong S.⁹

Institutes 1 Hadassah Medical Center and Faculty of Medicine, Hebrew University of Jerusalem, Institute of Gastroenterology and Liver diseases, Department of Internal Medicine, Jerusalem, Israel; 2 Shamir Medical Center, Institute of Gastroenterology, Zerifin, Israel; 3 Assuta Centers, Haifa Gastroenterology Institute, Haifa, Israel; 4 Erlanger Health System, Gastroenterology, Chattanooga, United States; 5 Radboud University Medical Center, Gastroenterology and Hepatology, Nijmegen, Netherlands; 6 University Medical Center Mainz, Interventional Endoscopy Center, Mainz, Germany; 7 MetroHealth System, Gastroenterology Division, Cleveland, United States; 8 Beth Israel Deaconess Medical Center, Division of Gastroenterology, Boston, United States; 9 Johns Hopkins Hospital, Division of Gastroenterology, Baltimore, United States

DOI 10.1055/s-0042-1745068

Aims Automatic polyp characterization (APC) during colonoscopy may enable endoscopists to determine histologic type of polyps more accurately. The MAGENTIQ-COLO is an artificial intelligence (AI) system that includes real-time polyp detection, size estimation, and APC. The purpose of this study was to assess polyp characterization performance.

Methods The APC categorizes polyps into two groups, neoplastic and non-neoplastic. It is implemented by a patch-wise convolutional neural network (CNN) with a backbone of ResNet50 CNN, and it was trained on 637,918 frames from 610 polyps with verified histopathology data. The APC results (neoplastic, non-neoplastic, or uncertain) are displayed in real-time. (Figure 1) In this study, 111,531 frames of 107 polyps taken from 88 colonoscopy videos were analyzed. To evaluate the performance of the APC, we measured accuracy (for the two groups), and precision and sensitivity of each group separately. The measurements were performed comparing the APC result to the histopathology results.



► Fig. 1

Results The APC accuracy on the dataset was 94.38 %. The sensitivity was 99.95 % for neoplastic polyps and 52.78 % for non-neoplastic polyps. The precision was 94.04 % for neoplastic polyps and 99.36 % for non-neoplastic polyps. (Table 1)

► Table 1

Metric/Group	Neoplastic	Non-neoplastic
Sensitivity	99.95 %	52.78 %
Precision	94.04 %	99.36 %

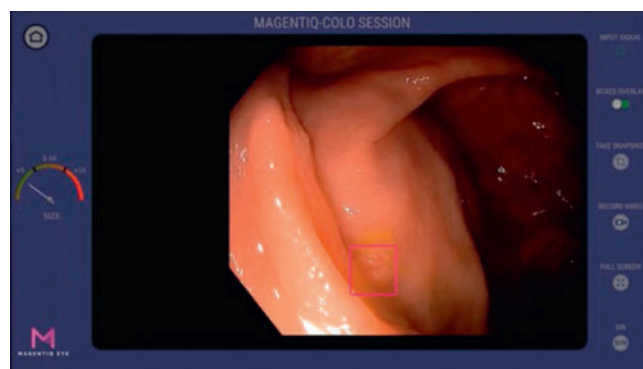
Conclusions This newly introduced APC model has high accuracy and high precision for neoplastic and non-neoplastic polyps, and very high sensitivity for neoplastic polyps. The non-neoplastic sensitivity will improve as the system continues to train on a larger number of polyps (with emphasis on non-neoplastic polyps). By combining real-time APC and APSE, the AI system may support endoscopist decision-making in accurately diagnosing diminutive polyps, without the need for histologic confirmation.

eP216 DEEP LEARNING BASED AUTOMATIC POLYP SIZE ESTIMATION IN REAL-TIME DURING COLONOSCOPY

Authors Benson A.¹, Jacob H.¹, Katz L.¹, Shirin H.², Hazzan R.³, Kahloon A.⁴, Siersema P.⁵, Neumann H.⁶, Landsman M.⁷, Berzin T.⁸, Ngamruengphon S.⁹, Edmundowicz S.¹⁰

Institutes 1 Hadassah Medical Center and Faculty of Medicine, Hebrew University of Jerusalem, Institute of Gastroenterology and Liver diseases, Department of Internal Medicine, Jerusalem, Israel; 2 Shamir Medical Center, Institute of Gastroenterology, Zerifin, Israel; 3 Assuta Centers, Haifa Gastroenterology Institute, Haifa, Israel; 4 Erlanger Health System, Gastroenterology, Chattanooga, United States; 5 Radboud University Medical Center, Gastroenterology and Hepatology, Nijmegen, Netherlands; 6 University Medical Center Mainz, Interventional Endoscopy Center, Mainz, Germany; 7 MetroHealth System, Gastroenterology Division, Cleveland, United States; 8 Beth Israel Deaconess Medical Center, Division of Gastroenterology, Boston, United States; 9 Johns Hopkins Hospital, Division of Gastroenterology, Baltimore, United States; 10 University of Colorado Hospital, Division of Gastroenterology and Hepatology, Aurora, United States
DOI 10.1055/s-0042-1745069

Aims Accurate polyp size estimation (PSE) during colonoscopy is essential to determine appropriate resection methods and surveillance intervals. Automatic PSE (APSE) may help to reduce PSE variability through standardization. The MAGENTIQ-COLO is an AI system that includes real-time polyp detection and real-time APSE. The purpose of this study was to assess APSE performance.



► Fig. 1

Methods APSE categorizes polyps between three groups, <5mm (62 polyps in the dataset), 5-10mm (20 polyps), and > 10mm (9 polyps). It is implemented by a regression Convolutional Neural Network (CNN) with a backbone of ResNet101 CNN, and was trained on 672,533 frames from 795 polyps. The results are displayed in real time for detected polyps. (Figure 1) A total of 58,771 frames of 91 polyps taken from 79 colonoscopy videos were used. We measured the accuracy, precision, and sensitivity of each size group and overall. These measurements were done frame-wise, comparing the APSE against the endoscopists' annotations in procedure reports. These annotations were based on estimates the endoscopists made with forceps or snares during polypectomy.
Results Overall APSE accuracy was 90.0 %, overall APSE sensitivity was 81.9 %, and overall APSE precision was 86.1 %. The accuracy, sensitivity, and precision of the APSE calculated for each polyp size group is displayed in Table 1.

► Table 1

Metric/Group	<5mm	5-10mm	>10mm	Overall (average)
Accuracy	88.91 %	85.15 %	95.89 %	90.0 %
Sensitivity	87.23 %	85.78 %	72.66 %	81.9 %
Precision	90.44 %	77.38 %	90.49 %	86.1 %

Conclusions The newly introduced APSE allows for accurate prediction of colon polyp size in real-time. APSE allows for a more accurate and standardized diagnosis with less variability compared to current PSE techniques, and in this way assists in correctly determining colonoscopy surveillance intervals.

eP217 AN INTRACOLONOSCOPY BOWEL CLEANSING SYSTEM FOR HARD-TO-PREPARE PATIENTS – A PROSPECTIVE MULTICENTER STUDY

Authors van Riswijk M.¹, van Keulen K.¹, Neumann H.^{2,3}, Siersema P.⁴

Institutes 1 Radboudumc, Radboud Institute of Health Sciences, Gastroenterology and Hepatology, Nijmegen, Netherlands; 2 University of Mainz, Gastroenterology and Hepatology, Mainz, Germany; 3 GastroZentrum Lippe, Bad Salzuflen, Germany; 4 Radboudumc, Gastroenterology and Hepatology, Nijmegen, Netherlands

DOI 10.1055/s-0042-1745070

Aims Adequate bowel preparation (BP) is essential for the efficacy and safety of colonoscopy. However, inadequate BP is reported in approximately 20 % of colonoscopies, despite intensified regimes. Therefore, we hypothesized that an intraprocedural bowel cleansing system (Pure-Vu System, MotusGI) could fill this gap in BP strategies for hard-to-prepare patients. This study aims to assess the feasibility of the Pure-Vu in patients with a history of poor BP for colonoscopy.

Methods This ongoing international, multicenter study will include 44 patients with a history of inadequate BP in the last 2 years and undergoing screening/surveillance colonoscopy. Enrollment will be finished in February 2022. All patients received a limited BP, consisting of 300mL split-dose sodium picosulfate magnesium citrate and a 2-day low-fiber diet. Additional cleansing was done with the Pure-Vu. Primary outcome was bowel cleanliness using the Boston Bowel Preparation Scale (BBPS). Secondary outcomes included cecal intubation rate (CIR).

Results So far, 18 patients have been enrolled. Median BBPS before and after cleansing with the Pure-vu system was 1-2-2, and 3-3-3, respectively ($P < 0.001$). CIR was 88.9%. Reasons for incomplete colonoscopy were looping ($n = 1$) and a relative stricture ($n = 1$), possibly due to the added scope-diameter.

Conclusions The Pure-Vu could be an important tool to achieve compliance to surveillance intervals since patients with a history of poor BP typically undergo extensive preparation regimes and frequent colonoscopies due to poor visualization quality. Since these patients may have complicated anatomy (i.e., surgical scarring, diverticulosis), these factors should be considered to avoid incomplete procedures.

eP218 QUANTITATIVE ANALYSIS OF PERFUSION PATTERN IN CONTRAST-ENHANCED ENDOSCOPIC ULTRASONOGRAPHY FOR DIFFERENTIATION OF PANCREATIC TUMORS

Authors Razpotnik M.¹, Bota S.¹, Urak C.¹, Essler G.¹, Weber-Eibel J.¹, Peck-Radosavljevic M.

Institute 1 Department of Internal Medicine and Gastroenterology (IMuG), Hepatology, Endocrinology, Rheumatology and Nephrology and Emergency Medicine (ZAE) with Centralized Endoscopy Service, Klinikum Klagenfurt am Wörthersee, Klagenfurt am Wörthersee, Austria

DOI 10.1055/s-0042-1745071

Aims Contrast-enhanced endoscopic ultrasound (CE-EUS) is a useful method for characterizing solid pancreatic tumors. We aimed to investigate the accuracy of quantitative analysis of enhancement patterns of solid pancreatic lesions to differentiate adenocarcinomas from other pancreatic tumors.

Methods Patients with solid pancreatic lesions examined by CE-EUS using a gas-containing microbubble echo-enhancer (SonoVue, 4.8 mL) were included. The enhancement pattern was quantified using Java-based software (ImageJ, NIH) at peak intensity, defined as a pixel brightness of 170-255 in the red channel. For the tumor tissue, the following parameters were assessed: area of enhancement in pixels, the median value of the pixels, integrated density, lack of symmetry (skewness), shape analysis using the ellipse fitting method (angle, major, minor). These parameters were compared between pancreatic adenocarcinomas and other pancreatic tumors. The final diagnosis was established either by histopathology or radiological findings combined with tumor markers and clinical follow-up.

Results Between 01/2014-08/2021, 88 solid pancreatic tumors (75 % malignant) could be identified for further analysis: 63.6 % adenocarcinomas, 8 % metastasis, 3.4 % neuroendocrine tumors, 4.5 % other malignant tumors, 18 (20.5 %) benign masses. For six of seven evaluated parameters which were significantly correlated with the presence of adenocarcinoma, areas under the receiver-operating characteristic curves with best cut-off values were calculated (Table 1). The risk of adenocarcinoma according to these criteria was: 5 or 6 criteria ($n = 12$) 100 %, 2 to 4 criteria ($n = 66$) 77.3 %; 0 or 1 criterion ($n = 10$) 10 %.

Conclusions Quantitative analysis of CE-EUS perfusion patterns may accurately differentiate (> 4 or < 2 criteria) pancreatic adenocarcinomas from other pancreatic tumors.

► Table 1

Variable	Correlation (p)	Criterion (AUC; 95 % CI)	Sensitivity (%)	Specificity (%)
Area	$r = -0,214$ (0,04)	≤ 7564 (0,631; 0,519-0,733)	41,1	86,2
Median	$r = -0,239$ (0,02)	≤ 97 (0,645; 0,534-0,746)	55,4	79,3
Skew	$r = 0,206$ (0,05)	> 2 (0,619; 0,507-0,723)	34,6	86,2
Angle	$r = 0,282$ (0,009)	> 35 (0,671; 0,561-0,770)	76,8	55,2
Major	$r = -0,215$ (0,04)	≤ 218 (0,631; 0,520-0,733)	78,6	44,8
Minor	$r = -0,223$ (0,04)	≤ 88 (0,635; 0,524-0,737)	46,4	79,3

eP219 IMPROVING USABILITY OF AI SYSTEMS FOR POLYP DETECTION BY RECOGNIZING DIFFERENT INTERVENTIONS DURING COLONOSCOPY

Authors Lux T.¹, Troya J.¹, Brand M.¹, Meining A.¹, Hann A.¹

Institute 1 University of Würzburg, Interventional and Experimental Endoscopy (InExEn) – Department of Internal Medicine II, Würzburg, Germany
DOI 10.1055/s-0042-1745072

Aims Artificial intelligence for polyp detection systems (CADE) highlight regions such as colorectal polyps and are useful in fully insufflated colon lumen. However, CADE generate a significant number of false positive (FP) activations when performing interventions such as polypectomies due to the introduction of snare or biopsy forceps. These bounding boxes have the potential to disturb the examiner's work.

Methods A convolutional neuronal network (CNN) to recognize instruments in the endoscopic image was developed and evaluated. The CNN has the ability to pause the signal of the CADE system when an instrument is recognized. A total of 30 different examinations from 6 different centers were screened for instruments and generated the training dataset. The test dataset included 8 full-colonoscopy videos that were analyzed for the recognition of visible instruments and detections by a commercially available CADE.

Results The training data contained 74179 images, 23.9 % with visible instruments. The CNN was able to recognize instruments in 73.5 % of the validation dataset images with a specificity of 90.9 %. A mean of 380.5 disturbing frames per colonoscopy were avoided using the CNN. This accounted for a 76.9 % of the total number of disturbing activations.

Conclusions CADE systems usually rely on a clean, well-insufflated colon lumen to detect polyps. However, instruments like polypectomy snares often lead to FP detections that could potentially disturb the examiner during the intervention. Using a CNN, we were able to accurately detect the presence of an instrument, pause the CADE system and avoid further activations when the polyp is already detected.

eP220 ARTIFICIAL NEURAL NETWORK FOR THE PREDICTION OF MORTALITY IN PATIENTS PRESENTED WITH NON-VARICEAL UPPER GASTROINTESTINAL BLEEDING

Authors Ungureanu B.S.¹, Saftoiu A.¹, Turcu-Stiolica A.², Cazacu S.M.¹, Gheonea D.I.¹

Institutes 1 University of Medicine and Pharmacy of Craiova Romania, Gastroenterology, Craiova, Romania; 2 University of Medicine and Pharmacy of Craiova Romania, Pharmacoeconomics, Craiova, Romania
DOI 10.1055/s-0042-1745073

Aims Upper gastrointestinal bleeding (UGIB) represents a common cause of gastroenterological admission and usually requires risk stratification for level of care determination as well as a rapid decision management. The aim of our study is to assess the use of an artificial neuronal network (ANN) that may help predict mortality in patients which present with non-variceal UGIB.

Methods All patients admitted with non-variceal UGIB within the Gastroenterology Department of Craiova County Hospital between 1st of January 2017 and 31st December 2019 were included in our study. We performed a patient analysis on 914 patients by using the Rockall, AIM65 and the Glasgow-Blatchford score. A two layers ANN of the endoscopic scores was developed using Python 3.10.0 and tried to provide a higher prediction of patient's mortality. The neural network was validated on the patients admitted in 2019. Each nod was assessed by using random weights of each parameter, which are further adjustable according to the prediction errors. The second layer consisted of 7 nodes.

Results Our ANN was able to predict the mortality rate of patients non-variceal UGIB better than the three scores taken separately with an accuracy > 95 %. The second iteration revealed a specificity of 0.96 and a sensibility of 0.76 which was higher than the used scores alone.

Conclusions Using the three UGIB scores in ANN may perform better for patient's mortality assessment in a non-variceal setting. However, there is a need of external validation in external patient's population to be validated.

eP221 STAGING OF BARRETT'S NEOPLASIA USING ARTIFICIAL NEURAL NETWORKS, PROOF OF CONCEPT STUDY

Authors Abdelrahim M.¹, Saiko M.², Maeda N.³, Htet H.¹, Siggens K.¹, Aslam S.¹, Subramaniam S.¹, Longcroft-Wheaton G.¹

Institutes 1 Portsmouth Hospitals University NHS Trust, Gastroenterology and Endoscopy, Portsmouth, United Kingdom; 2 NEC Corporation, Biometrics Research Laboratories, Kawasaki, Japan; 3 NEC Corporation, Medical AI Research, Tokyo, Japan
DOI 10.1055/s-0042-1745074

Aims Endoscopic differentiation between intra-mucosal and submucosal Barrett's neoplasia has several important implications but remains challenging even for expert endoscopists. Recent studies demonstrated promising results on AI-assisted detection of Barrett's neoplasia, but data on AI-assisted staging is limited. We aimed to develop and validate an AI system for classification of Barrett's neoplasia into intra-mucosal or submucosal, and compare its performance to expert endoscopists.

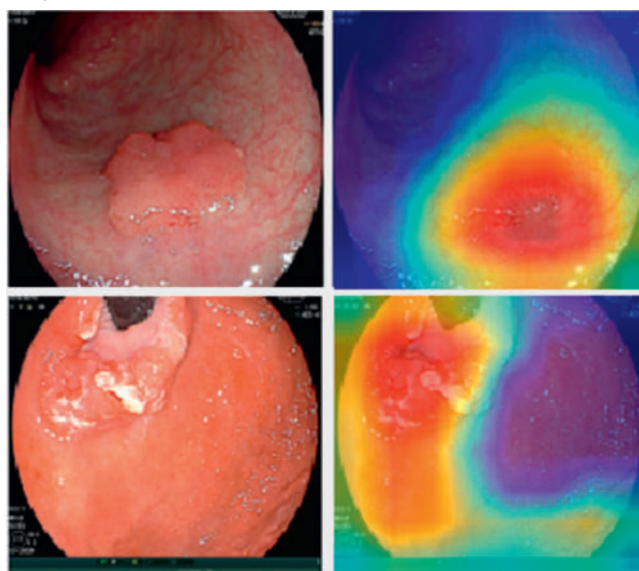
Methods The model, based on VGG-16 architecture, was trained on 117 images of prospectively collected and annotated Barrett's neoplastic lesions. Rotation and random flip were used for data augmentation. The ground truth was the histological staging of endoscopically resected specimens performed by two pathologists with expertise in Barrett's neoplasia. Images comprised of WLI, enhanced imaging, and magnification views. The model was designed to classify images as either intra-mucosal (pT1a) or submucosal (pT1b). Performance of the AI system was compared to a group of three experts.

Results

► Table 1

Metric	AI model	Experts (n = 3)
Accuracy	70.9%	73.3%
Sensitivity	72.5%	63.3%
Specificity	65.7%	83.3%

The AI model was tested on an independent dataset of 90 images. Accuracy, sensitivity and specificity and AUC of the AI model in differentiating between intra-mucosal and submucosal neoplasia was 70.9%, 72.5%, 65.7%, and 0.781 respectively. Mean accuracy, sensitivity and specificity of experts were 73.3%, 63.3% and 83.3% respectively. Processing speed of the AI system was 5 ms/image.



► Fig. 1

Conclusions This study demonstrates the feasibility of AI-assisted staging of Barrett's neoplasia on endoscopic images. The AI model's performance was comparable to that of experts. More work is needed to further develop this early model and validate its use on real-time video sequences.

eP222 EVOLUTION OF CAUSTIC INJURY OF THE UPPER GASTROINTESTINAL TRACT: ABOUT 38 CASES

Authors Aouroud H.¹, Rizkou J.¹, Ait Errami A.¹, Oubaha S.¹, Samlani Z.¹, Krati K.¹

Institute 1 UHC Mohammed VI, Hepatogastroenterology, Marrakesh, Morocco
DOI 10.1055/s-0042-1745075

Aims The aim of this work is to report our experience of caustic injury of the upper gastrointestinal tract and to analyze the evolution of the lesions.

Methods We performed a descriptive retrospective study over 3 years (2018-2020) where all patients who underwent upper GI endoscopy in the acute phase were included and esophageal and gastric caustic lesions were classified according to their severity and extent according to the Savary and Miller score.

Results 38 patients were included, the average age was 24 years (17-49). The most frequently ingested corrosive substances were alkalis in 52.63% and acids in 31.57% of cases; ingestion was accidental in 57.89%. The super gastro-intes-

tinal endoscopy was often performed on average after 48h-72h post ingestion, it showed different stages of lesions: from a stage I in 23.68 % to diffuse necrosis lesions in 15.78 % of cases. The evolution was marked by a clinical improvement without complications with a 3 year follow-up in 55.26 %, while in 44.7 % of the patients we noted: 3 cases of death following a perforation or infectious complications, 31.57 % presented an esophageal stenosis at different levels which was clinically manifested by dysphagia and treated by dilatation with candles or pneumatics and 2 patients presented an antro-pyloric stenosis treated by dilatation sessions.

Conclusions Caustic ingestion is an urgent situation requiring an early multi-disciplinary management likely to complications in the short, medium and long term and for which uppercut endoscopy represents a capital examination of first intention but also a tool in the therapeutic management of this pathology.

eP223 SEASONAL IMPACTS ON THE INCIDENCE OF ESOPHAGEAL VARICEAL BLEEDING

Authors Ben Farhat F.¹, Sabbah M.¹, Bellil N.¹, Trad D.¹, Bibani N.¹, Gargouri D.¹

Institute 1 Habib Thameur Hospital, Gastroenterology, Tunis, Tunisia

DOI 10.1055/s-0042-1745076

Aims The impact of low air temperature on esophageal variceal bleeding has yielded conflicting results. We aimed to explore the impact of seasonal variation on the occurrence and prognosis of variceal bleeding.

Methods A cross-sectional study from January 2014 to June 2021 in the department of gastroenterology of Habib Thameur Hospital of Tunisia was conducted. We included cirrhotic patients hospitalized with a primary diagnosis of esophageal variceal hemorrhage. Our primary aim was to assess seasonal variations in variceal bleeding-related hospitalizations. The secondary aims were to assess the impact of seasonal variation on outcomes in variceal bleeding including in-hospital mortality.

Results A total of 83 patients hospitalized with esophageal variceal bleeding were included. The average age was 63.7 years. The gastrointestinal bleeding was inaugural in 43.3 %. Thirty-eight percent (38 %) of the patients had post hepatitis B or C virus cirrhosis. The highest number of hospitalizations was reported in September (15 %) then January (12 %) and the lowest was reported in June (2 %). Winter was associated with in-hospital mortality ($p = 0.05$): The highest rate was in January (22 %) and lowest rate in June (0 %) regardless of age, sex, decompensated cirrhosis, Child pugh classification and etiology of liver disease. There was no significant difference in hospital length of stay across all months in all years combined.

Conclusions There appears to be a seasonal variation in the incidence of variceal hemorrhage as well as in the in hospital mortality. September was the month with the highest number of daily hospitalizations while the nadir occurred in June.

eP225 INFLUENCE OF COVID-19 ON PATIENTS UNDER PROPHYLACTIC ENDOSCOPIC VARICEAL LIGATION (EVL) THERAPY IN A PORTUGUESE CENTER

Authors Craciun A.¹, Botto I.¹, Lopes J.¹, Moura M.¹, Carvalhã S.¹, Carrilho-Ribeiro L.^{1,2}, Tato Marinho R.^{1,2}

Institutes 1 Hospital Santa Maria, Centro Hospitalar Lisboa Norte, Gastroenterology and Hepatology, Lisbon, Portugal; 2 Faculdade de Medicina da Universidade de Lisboa, Clínica Universitária de Gastroenterologia, Lisbon, Portugal

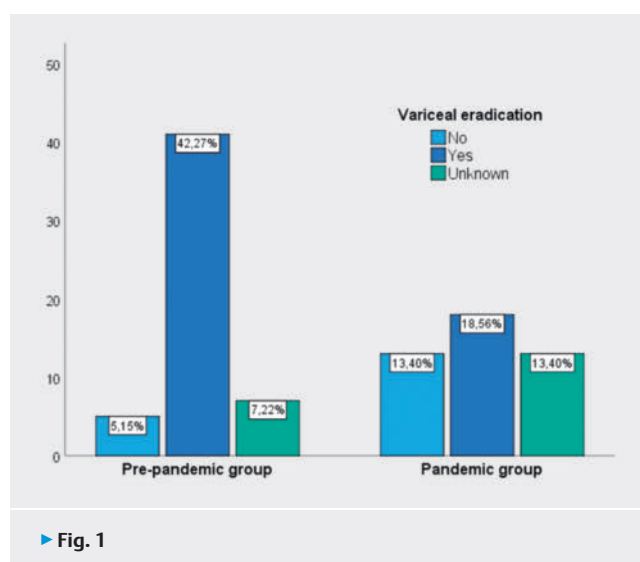
DOI 10.1055/s-0042-1745078

Aims Evaluate the impact of COVID-19 on outcomes of patients under prophylactic EVL therapy, namely variceal eradication, bleeding post-EVL therapy and death at 6 months post-last session.

Methods Retrospective study of patients on EVL at a tertiary hospital between 2017 and 2020. To have independent groups concerning EVL therapy pre and

during pandemic, the cutoff date was 1st January 2019. Variceal eradication and bleeding were analyzed during one year of follow-up. Differences between groups were identified using chi-squared and independent t-tests. Risk factors were identified through logistic regression.

Results 97 patients were included: 75 men (77 %) with mean age of 59 ± 12 years. Cirrhosis was the predominant cause of portal hypertension (88 %): alcohol and virus as main etiologies (75 %). 398 prophylactic EVL sessions were performed: 53 patients underwent 223 sessions (56 %) in pre-pandemic group and 44 patients underwent 175 sessions (44 %) in the latter. However, no statistical significance in the mean number of sessions was observed between them ($p = 0.587$). 66 patients performed EVL therapy as secondary prophylaxis. 12 and 15 patients suffered post-EVL bleeding and death, respectively. There was no association of these two outcomes between pre and pandemic groups. However, variceal eradication showed significant difference ($p = 0.001$) (Figure 1). The independent risk factors for variceal eradication were pandemic group and total number of EVL sessions ($p < 0.01$), whereas for death at 6 months were age, portal vein thrombosis, and MELD-Na ($p < 0.05$).



Conclusions COVID-19 reduced the number of prophylactic EVL sessions, and therefore variceal eradication was significantly lower in pandemic group. In contrast, bleeding post EVL-therapy and death at 6 months post-last session showed no significant difference.

eP226V A RARE CASE OF EXTENSIVE BLACK ESOPHAGUS MANAGED CONSERVATIVELY

Authors Curatolo A.¹, Soriani P.¹, Biancheri P.¹, Ottaviani L.¹, Rainer J.¹, Deiana S.¹, Impellizzeri G.¹, Gabbani T.¹, Bonura G.F.¹, Manno M.¹

Institute 1 AUSL Modena, Gastroenterology and Digestive Endoscopy Unit, Carpi, Italy

DOI 10.1055/s-0042-1745079

Acute esophageal necrosis (AEN), also known as black esophagus, is a rare condition, characterized by a circumferential black appearance of the esophageal mucosa due to acute ischemia. AEN usually develops in the context of peripheral vascular disease, sepsis, multiorgan dysfunction, diabetic ketoacidosis or alcohol intoxication.

Here we show the video-report of an 85-year-old woman who underwent urgent EGDS for hematemesis, which revealed extensive AEN. This condition was successfully managed with medical therapy. Second-look EGDS, performed after 2 weeks, showed complete resolution of the necrosis. The patient was then allowed to eat a soft diet, which she tolerated well without complications.

eP227 EFFICACY OF ENDOSCOPIC BAND LIGATION IN THE ERADICATION OF OESOPHAGEAL VARICES

Authors Dedane B.¹, Elmqaddem O.¹, Koulali H.¹, Nasiri M.², Rais K.¹, Belhorma S.¹, Zazour A.¹, Kharrasse G.¹, Ismaili Z.¹, Khannoussi W.¹

Institutes 1 University Hospital Mohammed VI, hepatogastroenterology unit, Oujda, Morocco; 2 university hospital Mohammed VI, hepatogastroenterology unit, Oujda, Morocco

DOI 10.1055/s-0042-1745080

Aims Evaluate the efficacy of endoscopic band ligation in the eradication of esophageal varices and the prevention of rebleeding in cirrhosis

Methods Retrospective Study between January 2018 and November 2021 including 66 cases cirrhotic patients who underwent endoscopic band ligation of esophageal varices for secondary prophylaxis. The sessions were planned every 3-4 weeks following a successful ligation until eradication but in some cases they were delayed due to the COVID-19 pandemic. B-blockers were systematically associated with EBL. Failure was defined as the non eradication of the esophageal varices after 6 EBL sessions.

Results 66 patients were included, 43 females (65.15%) with a sex ratio of 1,28 F / M. The average age was 55.8 years (27-88). Etiologies: viral infections 10.63%, primary biliary cirrhosis 3%, Wilson's disease 3% Alcohol and NASH 1.51% each. 55.3% of patients were Child Pugh A, 41.7% B and 2.9% were C. The eradication rate was 57.5% for an average number of sessions/patients of 2.65 (1-7). 28,9% cases varices eradicated in one session of EBL, while 31,2% required two sessions; 21% cases it took three sessions, and in 18% more than three sessions. Eradication protocol failed in 4,5%, while 25 patients are still in the course of eradication. Two cases had bleeding post ligation with good outcome. The mean duration of follow-up was 2 years. The esophageal varices recurrence rate was 10.6% and mean time to recurrence was 26 months.

Conclusions Numbers of sessions of eradication was 2,65/patients, recurrence rate was 10.6%.

eP228 EFFICACY AND SAFETY OF THE ENDOSCOPIC SEPTOSTOMY OF ZENKER'S DIVERTICULUM WITH THE SB-KNIFE

Authors del Pozo-García A.J.¹, Marín-Gabriel J.C.¹, Sáenz-López S.², Ballesteros L.², Hernán P.¹, Sánchez-Gómez F.¹

Institutes 1 Hospital Universitario 12 de Octubre, Endoscopy Unit, Gastroenterology Service, Madrid, Spain; 2 Hospital Universitario 12 de Octubre, Gastroenterology Service, Madrid, Spain

DOI 10.1055/s-0042-1745081

Aims Management of Zenker's diverticulum (ZD) through open neck surgery to perform a cricopharyngeal myotomy, and stapling through rigid endoscopes have been the standard treatments in past decades. Several endoscopic techniques have been developed. We present our experience of Zenker's diverticulotomy (ZS) using a flexible endoscope and an SB-knife™ (Sumitomo Bakelite Ltd., Japan), primarily designed for ESD.

Methods From February 2017 to October 2021 we prospectively collected the data of our first 22 ZS performed with an SB-knife. Inclusion criteria: > 18 years, symptomatic ZD diagnosed by esophagogram, CT or endoscopy, and no previous treatment. All patients signed informed consent. All procedures performed under general anesthesia and antibiotic prophylaxis, using: duck-bill diverticuloscope (Cook Endoscopy, Winston-Salem, NC, USA), stiff guidewire, flexible Fujinon videoscopes and VIO200/300 (ERBE Elektromedizin, Tübingen, Germany) electrosurgical units. Efficacy, safety and hospital stay were tested.

Results Twenty-two septostomies in 18 patients (16 male), aged 67.5, sized 37.5 (17-62) mm. Treatment completion: 100% in 29.6 minutes, using 2.4 clips. Adverse events: 1 mild haemorrhage (endoscopic tx); 1 fever (normal CT); no perforations. No surgery/death. Mean f-up: 387 days. In 21/22 patients the symptoms improved or relieved immediately. Four patients relapsed after 5.75

months, and were retreated (1 unsuccessful, submitted to surgery.) Eckardt score decreased from 5.3 to 0.5. Global long-time clinical success 21/22 (95.4%); . Mean hospital stay: 2.0 days.

Conclusions Endoscopic diverticulotomy with the SB-knife is safe, feasible and effective; with an Eckardt scale decrease from 5.3 to 0.5. Longterm global clinical success achieved 95% after retreating 4 recurrences; Adverse events rate was negligible.

eP229V ENDOSCOPIC REMOVAL OF A SHARP ESOPHAGEAL FOREIGN BODY: CHALLENGES FACED

Authors Desai P.N.¹, Patel C.¹, Prajapati R.¹, Kabrawala M.¹, Patel N.¹, Sethia M.¹, Mehta R.¹, Nandwani S.¹

Institute 1 SIDS Hospital & Research Centre, Surat, India

DOI 10.1055/s-0042-1745082

45-year-male with dysphagia one and half months after eating fish. X-ray neck – foreign body in neck. CT neck showed a V shaped bone located horizontally in proximal esophagus. No free perforation or vascular impingement. EGD revealed V shaped bone both ends and base embedded in proximal esophageal wall. Distal and proximal wings of V dislodged one by one with rat tooth and removal attempted. Failed. Base dislodged from esophageal wall taking care that end of wings did not further impinge opposite wall. The V then pulled out holding the base and two arms vertical. Ryle's tube placed for feeding.

eP230V ENDOSCOPIST'S NIGHTMARE

Authors Desai P.N.¹, Prajapati R.¹, Patel C.¹, Kabrawala M.¹, Patel N.¹, Sethia M.¹, Mehta R.¹, Nandwani S.¹

Institute 1 SIDS Hospital & Research Centre, Surat, India

DOI 10.1055/s-0042-1745083

Male 46, decompensated cirrhosis, melena. Endoscopic variceal ligation 4 weeks back. Endoscopy – large oesophageal varices with white nipple sign. Band applied over the varix including white nipple. Band slipped. Repeat banding failed. 0.5 ml cyanoacrylate glue injected. Bleeding persisted in spite of two more glue. Vision deteriorated. Distal attachment cap used. Provided space between clot and lens and better visibility. Tamponade created, exact point of bleed identified with gradual withdrawal and one more glue injected with secured haemostasis. Conclusion: Consider White nipple sign seriously. Intubate patient as they can have massive bleed. Cap helps tamponade and controlled injection in esophagus.

eP231V SLOUGHING ESOPHAGUS

Authors Dogan S.¹, Omurca F.¹, Firat E.², Farooq A.³

Institutes 1 Saglik Bilimleri University, Gastroenterology, Kayseri, Turkey;

2 Saglik Bilimleri University, Internal Medicine, Kayseri, Turkey; 3 Duke University, Gastroenterology, North Carolina, United States

DOI 10.1055/s-0042-1745084

Esophagus dissecans superficialis is a rare endoscopy finding, it is characterized by sloughing off esophagus mucosa. It has been linked to conditions such as eosinophilic esophagitis, lichen planus, pemphigus vulgaris.

Here we describe a case of 55-year-old male with no significant past medical history. Patient reports complaints of dysphagia for solid foods. We obtained biopsies and pathology was consistent with sloughing esophagitis.

The underlying etiology of sloughing esophagitis remains unknown; it can be a reaction to multiple insults such as thermal, immune-mediated, and chemical. It is mostly benign, self-limiting process but when associated with bullous dermatoses will require steroid treatment.

eP232V SOME ENDOSCOPIC TECHNICAL MODIFICATIONS IN THE TREATMENT OF ZENKER'S DIVERTICULUM

Authors Espinel J.¹, Pinedo E.²

Institutes 1 Hospital Universitario de León, Endoscopy Unit, León, Spain;

2 Hospital Universitario de León, Radiology Department, León, Spain

DOI 10.1055/s-0042-1745085

The original diverticuloscope has a 4 cm long esophageal flap and, a 2.5 cm long diverticular flap. Instead, on purpose, the length of the diverticular flap is reduced from 2.5 cm to 1 cm long through a manual semicircular cut. Thus, we achieve a progressive exposure of the septum, regardless of the size of the ZD. A "rigid" transparent cap is attached to the tip of the endoscope. This device helps to better visualize the progression of the septum dissection and myotomy. In case of bleeding, it facilitates the location of the bleeding vessel as well as its treatment.

eP233 SELF-EXPANDABLE METAL STENTS IN ESOPHAGEAL CANCER BEFORE PREOPERATIVE NEOADJUVANT THERAPY: EFFICACY, SAFETY AND LONG-TERM OUTCOMES

Authors Ferreira-Silva J.¹, Rodrigues-Pinto E.¹, Pereira P.¹, Macedo G.¹

Institute 1 Centro Hospitalar Universitário de São João, Gastroenterology, Porto, Portugal

DOI 10.1055/s-0042-1745086

Aims Evaluate self-expandable metal stent (SEMS) placement impact on clinical and oncologic outcomes in patients with esophageal cancer who underwent surgery after neoadjuvant therapy (NT).

Methods Retrospective study of esophageal cancer patients referred for esophagectomy after NT. A propensity score was built consisting of the conditional probability of having had a SEMS given a set of baseline variables. In the SEMS group, patients underwent SEMS placement followed by NT and esophagectomy, whereas in the non-SEMS group, patients underwent only NT and esophagectomy.

Results One hundred patients were included, 29 in the SEMS group and 71 in the non-SEMS group. Median follow-up was 18 months. SEMS-related adverse events occurred in 20.7 % of the patients. After propensity score analysis, SEMS use decreased delta dysphagia score (regression coefficient [RC]: - 2.69, 95 % CI - 3.18 to - 2.21), dysphagia grade before surgery (RC: - 0.74, 95 % CI - 1.22 to - 0.27), hospital readmissions at 1 month (OR 0.18; $p=0.019$), but increased overall morbidity after surgery (OR 3.02; $p=0.045$). No significant differences were found regarding delta albumin levels and albumin levels before surgery, delta weight and weight before surgery, death related to surgery, number of lymph nodes harvested, R0 resection rate, tumor recurrence, recurrence-free survival, overall survival, and 30-day, 6-month, and 3-year mortality.

Conclusions SEMS placement improved dysphagia and allowed patients to maintain an equal nutritional status compared to patients without dysphagia during NT. Although postsurgical morbidity was higher in patients with SEMS placement, postsurgical mortality and oncological outcome were not different.

eP234 GIANT ZENKER DIVERTICULA: IS ENDOSCOPIC TREATMENT AN OPTION?

Authors Ginestet C.¹, Barret M.¹, Belle A.¹, Abou Ali E.¹, Hallit R.¹, Assaf A.¹, Coriat R.¹, Chaussade S.¹

Institute 1 Cochin Hospital, Gastroenterology, Paris, France

DOI 10.1055/s-0042-1745087

Aims Zenker's diverticulum usually presents in the elderly population with symptoms of dysphagia. The endoscopic diverticulotomy can be performed using either cap or diverticuloscope assistance. The abandonment of the diverticuloscope for the treatment of diverticula allows to perform a complete septotomy of the diverticular wall in particular in the case of large diverticula

(greater than 5 cm). The aim of this study was to evaluate the safety and feasibility of complete septotomy in the setting of large Zenker's diverticula.

Methods We conducted a retrospective analysis that included all patients who had endoscopic septotomy for large Zenker diverticulum (greater than 5 cm) between January 2014 and November 2020. The procedure was performed under general anesthesia using a gastroscope with a cap assistance. The complete incision of the diverticulum septum was achieved using a Dual or TT knife, until complete effacement of the diverticulum.

The short and medium term clinical results were collected. The clinical success rate was defined as the absence of regurgitation or dysphagia-like symptoms.

Results 105 patients have been treated endoscopically for Zenker's diverticulum. Twelve patients had large diverticula. The mean size of the diverticula was 6 ± 1.15 cm. The clinical success rate was 100 % and the complication rate was 8 %. After a median follow-up of 12.5 months, the clinical success rate was 92 % in ITT and 100 % in per protocol.

Conclusions Complete endoscopic septotomy seems to be an interesting approach for the treatment of large diverticula with a high clinical success rate and low rate of morbidity.

eP235 COMPARISON OF PREOPERATIVE AND POSTOPERATIVE FUNCTIONAL LUMINAL IMAGING PROBE MEASUREMENTS IN PATIENTS UNDERGOING PERORAL ENDOSCOPIC MYOTOMY FOR ACHALASIA

Authors Gröhl K.¹, Ebigo A.¹, Schnoy E.¹, Messmann H.¹, Nagl S.¹

Institute 1 University Hospital Augsburg, Gastroenterology, Augsburg, Germany

DOI 10.1055/s-0042-1745088

Aims The functional luminal imaging probe (FLIP) is a catheter-based device that measures esophagogastric junction (EGJ) distensibility. Previous studies have demonstrated that impedance planimetry measurements can predict clinical response following peroral endoscopic myotomy (POEM). This study aims to assess changes in distensibility index (DI), intraballoon pressure (IBP), cross-sectional Area (CSA) and minimum diameter (Dmin) in patients with untreated achalasia before, during and after POEM and to determine the most predictive measures for clinical response.

Methods Untreated achalasia patients undergoing POEM were prospectively enrolled. FLIP measurements including CSA, IBP, CSA and Dmin of the lower esophageal sphincter (LES) were performed (1) at the start of the POEM procedure, (2) after POEM myotomy and (3) at a routine 3-months follow-up. Measurements were reported at a 30 ml and a 40 ml fill volume for the 8 cm FLIP (EF-325). Clinical response was defined as an Eckardt score ≤ 3 at 3-months follow-up.

Results Fourteen patients underwent FLIP measurements at time point 1 and 2. Post-operative CSA, Dmin, DI values for 30 ml and CSA, Dmin, DI and IBD values for 40 ml fill volume were significantly different from pre-operative values (30ml: $51.0 (\pm 27) \text{ mm}^2$ vs. $72.6 (\pm 28.7) \text{ mm}^2$, $P=0.009$; $7.7 (\pm 2.1) \text{ mm}$ vs. $9.9 (\pm 1.5) \text{ mm}$, $P=0.001$; $2.5 (\pm 1.7) \text{ mm}^2/\text{mmHg}$ vs. $3.9 (\pm 1.3) \text{ mm}^2/\text{mmHg}$, $P=0.004$; 40ml: $88.3 (\pm 41.9) \text{ mm}^2$ vs. $124.3 (\pm 32.6) \text{ mm}^2$, $P=0.001$; $10.3 (\pm 2.4) \text{ mm}$ vs. $12.7 (\pm 1.8) \text{ mm}$, $P=0.001$; $2.3 (\pm 1.2) \text{ mm}^2/\text{mmHg}$ vs. $3.8 (\pm 1.3) \text{ mm}^2/\text{mmHg}$, $P=0.001$; $40.5 (\pm 11.3) \text{ mmHg}$ vs. $36.0 (\pm 8.2) \text{ mmHg}$, $P=0.023$).

Conclusions CSA, Dmin and DI improve significantly after POEM. The most predictive measures for clinical response following POEM have yet to be clarified when follow-up data are available.

eP236 PORTAL HYPERTENSIVE GASTROPATHY IN CHRONIC LIVER DISEASE: PREVALENCE AND ASSOCIATED FEATURES

Authors Hassine A.¹, Mrabet S.¹, Tababi R.¹, Harbi R.¹, Akkari I.¹, Hassine A.¹, Ben Jazia E.¹

Institute 1 Hopital Farhat Hached, Sousse, Tunisia

DOI 10.1055/s-0042-1745089

Aims In terms of Portal hypertension, attention is being mostly focused on searching and treating esophageal and gastric varices. Portal hypertensive gastropathy (PHG) is usually underappreciated. However, it can cause gastrointestinal bleeding. The aim of our study is to determine the prevalence of PHG and to study the clinical and endoscopic features of patients diagnosed with PHG.

Methods Between January 2008 and December 2021, a total of 200 patients had been diagnosed with cirrhosis in our center and were included. Clinical, biological and endoscopic data were retrospectively collected

Results Two hundred patients were included in this study. The mean age was 56.9 ± 15 years. Sex ratio (M/F) was 0.79. Hepatitis B was the main etiology ($n = 60$; 30%) followed by hepatitis C ($n = 32$; 16%), nonalcoholic steato-hepatitis in 36 cases (18%), Primary biliary cholangitis in 21 cases (10.5%), autoimmune hepatitis in 10 cases (5%), chronic alcoholism in 9 cases (4.5%) and vascular diseases of the liver in 5 cases (2.5%). Cirrhosis was deemed cryptogenic in 27 (13.5%) patients. The overall prevalence of PHG in patients with cirrhosis was 71%: mild (28.8%), moderate (50%) and severe (21.1%). PHG was not significantly associated with age ($p = 0.81$), gender ($p = 0.11$), ascites ($p = 0.11$), hepatic encephalopathy ($p = 0.51$) or thrombocytopenia ($p = 0.49$). Whereas, significant association was found between PHG and hypoalbuminemia $< 35\text{g/l}$ (73.9% vs 50%; $p = 0.01$). Regarding severe PHG, a significant association was found only with male gender (87.5% vs 73.2%; $p = 0.013$).

Conclusions In our study, the overall prevalence of PHG was 71%. Hypoalbuminemia was significantly more common in patients with gastroapathy. Importantly, the prevalence of severe PHG seems to be higher in male patients.

eP237 PREDICTION OF LARGE ESOPHAGEAL VARICES IN PATIENTS WITH COMPENSATED CIRRHOSIS USING IMAGING PARAMETERS

Authors Hassine A.¹, Mrabet S.¹, Tababi R.¹, Harbi R.¹, Akkari I.¹, Hassine A.¹, Ben Jazia E.¹

Institute 1 Hopital Farhat Hached, Sousse, Tunisia

DOI 10.1055/s-0042-1745090

Aims Upper gastrointestinal endoscopy (UGE) remains the gold standard for Portal-hypertension screening. However, this method is invasive and expensive. Noninvasive methods are needed to identify clinically significant portal hypertension and esophageal varices (EV) in patients with compensated cirrhosis. This study aims to establish the role of spleen size and portal vein diameter by ultrasonography in predicting large EV.

Methods Two hundred patients with clinical, biological, endoscopic and radiologic features of cirrhosis were included in our monocentric retrospective study. All of our patients underwent UGE for detection of esophageal varices (EV) as well as ultrasonography assessments of spleen size and portal vein diameter.

Results The average age was 56.9 ± 15 years. The sex ratio H/F was 0.79. The most common cirrhosis etiology was viral hepatitis infection (46%). During the endoscopic procedure, large EV (Grade II and III) were detected in 138 (69%) patients. Ultrasonography showed splenomegaly in 169 (84.5%) patients and an enlarged portal vein in 158 (79%) patients.

There was 83% sensitivity and 76% specificity for prediction for presence of large EV when the cutoff value for portal vein diameter was 13.25 mm. There was 77% sensitivity and 73% specificity for prediction for presence of esophageal varices when the cutoff value for spleen size was 14.2 cm.

Conclusions Ultrasonography of portal vein diameter and spleen size is a reliable noninvasive tool in predicting the presence of large esophageal varices in patients with liver cirrhosis.

eP238 ENDOSCOPIC VS. SURGICAL TREATMENT IN PATIENTS WITH 'HIGH-RISK' EARLY ESOPHAGEAL CANCER – WHERE ARE THE BOUNDARIES OF ENDOSCOPIC APPROACH? : A SINGLE-CENTER EXPERIENCE

Authors Hugova K.¹, Kollar M.¹, Harustiak T.², Snajdauf M.², Pazdro A.², Kodetova D.², Vackova Z.¹, Spicak J.¹, Martinek J.¹

Institutes 1 Institute for Clinical and Experimental Medicine, Prague, Czech Republic; 2 University Hospital Motol, Prague, Czech Republic

DOI 10.1055/s-0042-1745091

Aims Our aims were to evaluate long-term results of endoscopic vs. surgical treatment in patients with 'high-risk' early esophageal cancer (HRC) and to determine its risk of generalization.

Methods We analysed the data of all (241) patients with esophageal lesion who underwent endoscopic mucosal resection or submucosal dissection at our institution. Patients with HRC, who reached 2 years of follow-up or died within 2 years after the procedure were included. We defined HRC as cancer with submucosal (sm) invasion or mucosal (m) invasion with at least one: poor differentiation, invasion to blood (A+) or lymphatic (L+) vessels or high tumor cell dissociation. Patients without contraindications were referred to surgery and their lymph nodes were evaluated for the presence of metastases and micrometastases. The remaining patients continued in endoscopic treatment, if necessary. Results of both treatment modalities were compared. Candidate variables for predictors of generalization were analysed.

Results

► Table 1

	Endoscopy only (n = 35)	Esophagectomy (n = 30)
Median of follow-up	38.5 months	24 months
Tumor-related mortality	7 (20%)	1 (3.3%)
Procedure-related mortality	0 (0%)	2 (6.7%)
Estimated 5-year disease-specific survival	70.8% (95%CI: 89.8–100)	96.4% (95%CI: 52.5–95.6)

Sixty-five patients (48 with adenocarcinoma, 17 with squamous cell carcinoma) met the inclusion criteria. The numbers of extraesophageal involvement were: m: 6% (1/17), sm1: 25% (4/16), sm2: 20% (2/10), sm3: 36% (8/22). The only significant predictor was invasion into blood or lymphatic vessels (A+: $p = 0.034$; L+: $p = 0.007$). Long-term remission was obtained in 62.9% of endoscopically treated patients. Table contains the comparison of both groups.

Conclusions Endoscopy provided long-term remission to considerable number of patients with HRC and may represent a valid treatment option in patients contraindicated to surgery. Invasion into blood or lymphatic vessels appears to be the most relevant predictor for generalization.

eP239 ENDOSCOPIC MANAGEMENT OF OESOPHAGEAL PERFORATIONS AND LEAKS- 5 YEARS SINGLE CENTRE EXPERIENCE

Authors Karagoyozov P.¹, Zhecheva I.¹, Tishkov I.¹, Minchev T.²

Institutes 1 Acibadem City Clinic Tokuda University Hospital, Interventional Gastroenterology, Sofia, Bulgaria; 2 Acibadem City Clinic Tokuda University Hospital, Thoracic Surgery, Sofia, Bulgaria

DOI 10.1055/s-0042-1745092

Aims The aim of this study is to assess the technical success and outcome of different endoscopic treatment modalities in patients with esophageal perforations.

Methods

- Data was collected retrospectively from May 2017 to September 2021.
- We present a case series of 10 patients (N = 10, 9 men, 1 woman) treated in our unit with iatrogenic and spontaneous oesophageal perforations or anastomotic dehiscences after oesophageal surgery.

Results

- The most common etiology for perforation was iatrogenic or insufficiency of esophagogastric or esophagojejunal anastomosis.
- All of the patients underwent Computed tomography (CT) of the chest and gastroduodenoscopy.
- Patients were categorized into four treatment groups: 3 primary closures (endoscopic clip placement), 1 primary diversion (stent placement), 5 combination therapy (endoscopic clip closure, followed by stent placement), and 1 endoscopic vacuum therapy.
- Technical and long-term clinical success was achieved in 90 % of the patients.
- There was one death due to sepsis and multiple organ failure.
- None of the patients required surgical repair.

Conclusions Endoscopic management of acute esophageal perforation is emerging as the primary treatment modality and is less invasive and morbid than surgery. Combination strategies including OTSC clip-closure followed by stenting demonstrates best results with low morbidity and mortality.

eP240V SUCCESSFUL REMOVAL OF A BURIED OVER-THE-SCOPE CLIP IN THE ESOPHAGEAL WALL

Authors Kuellmer A.¹, Schiemer M.¹, Mueller J.¹, Schmidt A.¹

Institute 1 University of Freiburg, Faculty of Medicine, Department of Medicine II, Medical Center, Freiburg, Germany

DOI 10.1055/s-0042-1745093

We performed an ESD on a patient with a barrett's adenocarcinoma of the distal esophagus. Resection was successful (T1a, L0, V0, Pn0; R0), but an OTSC had to be placed in the resection surface due to massive bleeding. Eight weeks later, the patient presented with severe dysphagia, caused by inflammation and scarring due to the buried OTSC. To overcome the stenosis and to facilitate radiofrequency ablation of the remaining barrett's esophagus, the decision for removal was made. A follow-up examination 4 weeks later showed no stenosis and an almost complete mucosal healing, so radiofrequency ablation can be performed.

eP241 ENDOSCOPIC OR SURGICAL MYOTOMY FOR ACHALASIA: AN OBJECTIVE PERSPECTIVE, SYSTEMATIC REVIEW AND META-ANALYSIS

Authors Kum A.S.T.¹, Turiani Hourneaux de Moura D.², Silvino Do Monte Junior E.¹, Mendonça Proença I.¹, De Moraes Bestetti A.¹, Ribeiro Jordao Sasso J.G.¹, Marques Bernardo W.¹, Turiani Hourneaux De Moura E.¹, Braga Ribeiro I.², Guimaraes Hourneaux De Moura E.¹

Institutes 1 Hospital das Clínicas, University of São Paulo School of Medicine, Gastroenterology, São Paulo, Brazil; 2 Hospital das Clínicas da Faculdade de Medicina da Universidade de São Paulo – HC/FMUSP, Gastrointestinal Endoscopy Unit, São Paulo, Brazil

DOI 10.1055/s-0042-1745094

Aims With the advent of the Lyon consensus, a modern evaluation of reflux, we aim to evaluate the literature comparing POEM to Heller myotomy (HM) for the treatment of achalasia with objective measurements.

Methods We conducted a systematic review of comparative studies between POEM and HM. The outcomes evaluated referred to efficacy, perioperative metrics, safety and updated evaluation of postoperative GERD.

Results 32 studies comparing POEM and HM were included: 30 observational studies and 2 RCTs.

The success rate (Eckardt score ≤ 3) is higher in POEM (RD 0.07; 95 % CI, 0.04 to 0.11; $p < 0.0001$).

The operative duration and the length of stay (LOS) at the hospital are both shorter in POEM (respectively, MD -34.33 minutes and -0.43 days; $p < 0.0001$ and $p = 0.005$).

The major adverse events were similar in POEM and HM throughout the Clavien Dindo II-V (RD 0.00; 95 % CI, -0.02 to 0.02; $p = 0.86$).

The GERD through the Lyon consensus assessment indicates slightly favouring of HM in early EGD within 6 months (RD 0.05; 95 % CI, -0.04 to 0.15; $p = 0.28$) reduces until similar prevalence of postoperative GERD in both approaches in more than 6 months evaluation (RD 0.00; 95 % CI, -0.04 to 0.04; $p = 0.86$).

Conclusions When compared to HM, POEM had higher success rate of treatment of dysphagia, with shorter operative duration and LOS. In addition, when GERD is evaluated through the Lyon consensus, there were a higher incidence of postoperative GERD in POEM without statistical significance. Nonetheless, the difference between the two methodologies tend to resemble with time.

eP242 ESOPHAGEAL STENT PLACEMENT FOR THE TREATMENT OF ANASTOMOTIC LEAK

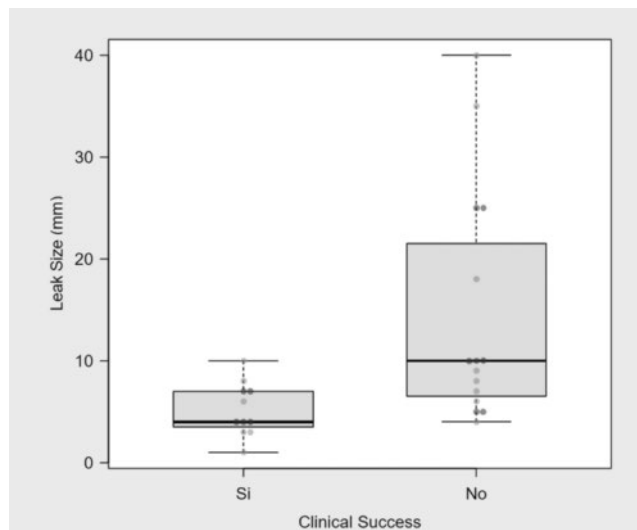
Authors Ladrón Abia P.¹, Mínguez Sabater A.¹, Martínez Delgado S.¹, Alonso N.¹, Argüello L.¹, García Campos M.¹, Bustamante Bailén M.¹, Lorenzo-Zúñiga V.¹, Pons V.¹

Institute 1 Hospital Universitario y Politécnico La Fe, Endoscopy, Valencia, Spain

DOI 10.1055/s-0042-1745095

Aims Evaluate the efficacy and safety of esophageal stent placement for the treatment of post-surgical esophageal anastomotic leaks.

Methods Retrospective observational study of esophageal anastomotic leaks treated with stents in a tertiary hospital between January 2017 and July 2021. Clinical success was defined as closure of the anastomotic leak after removal of the esophageal stent.



► Fig. 1

Results 26 patients were included. 17 patients had an esophago-gastric anastomosis and 15 an esophagojejunal anastomosis. The mean anastomotic leak size was 10.5 mm. In 57.7 % of patients, a Wallflex stent was placed and in 42.3 % a Hannarostent stent. The mean stent length was 124 mm and the mean diameter 20 mm. Placement was guided by scopy in 77 % of cases and in 23 % by direct endoscopic vision. The median time from surgery was 11 days. The median time from placement to removal of the prosthesis was 37 days. Clinical success was achieved in 14 of the 26 patients (53.8 %), in 11 of them after placement of 1 stent and in 4 after 2 stents. In the subgroup of patients with a

dehiscence <8 mm, the clinical success was 68.7 %, while in the subgroup with >8 mm, was 30 %. 11 patients had sepsis at the time of the procedure, of which 9 (81.8 %) did not achieve clinical success. Technical success was 100 %, with no immediate complications.

► Table 1

Variables	OR	Lower 95 %	Upper 95 %	P-value
Leak size	1.4	1.07	2.4	0.04
Sepsis	15.2	1.9	154	0.02
Time from surgery	1.02	0.95	1.1	0.5

Conclusions Endoscopic stent placement appears to be an effective and safe treatment for esophageal anastomotic leaks. The larger size of the dehiscence and sepsis are factors that decrease the clinical success.

eP243V A DIFFICULT Z-POEM DUE TO SEVERE FIBROSIS WAS AIDED BY A PARTIAL SEPTOTOMY WITH AN SB KNIFE AND COMPLETED WITH THE Z-POEM TECHNIQUE

Author [Lajin M.¹](#)

Institute 1 SHARP Health Care, Gastroenterology, San Diego, United States
DOI 10.1055/s-0042-1745096

A 60-year-old male presented with dysphagia and was found to have a 3 cm Zenker diverticulum. He was referred for endoscopic treatment.

A submucosal injection was followed by a mucosal incision at the septum. Severe fibrosis was encountered on the surface preventing access to the sub-mucosal space.

The SB knife was used to perform a limited septotomy. Following that the tunnel was entered and the Z poem was resumed with submucosal injections and a complete myotomy.

The mucosotomy was closed using clips.

Postoperative esophagram showed no leak. On follow-up 2 months later, dysphagia has completely resolved.

eP244V EUS-GUIDED GASTROJEJUNOSTOMY TO PALLIATE A MALIGNANT DUODENAL OBSTRUCTION IN A PATIENT WITH LOCALLY-ADVANCED PANCREATIC CANCER

Author [Lajin M.¹](#)

Institute 1 SHARP Health Care, Gastroenterology, San Diego, United States
DOI 10.1055/s-0042-1745097

A 72-year-old male with a recently diagnosed locally advanced pancreatic cancer presented with vomiting. A CT revealed duodenal obstruction at D3.

The upper endoscopy showed a malignant duodenal obstruction. The endoscope could not traverse the stricture. A wire was advanced to the proximal jejunum followed by a 7 French catheter. The endoscope was removed keeping the catheter in place.

The proximal jejunum was distended with contrast using the catheter.

The target jejunal loop was located on EUS. A 2 cm LAMS was deployed. The LAMS was dilated to 2 cm.

The patient tolerated a soft diet and was discharged home.

eP245V SUCCESSFUL TREATMENT OF ACHALASIA TYPE II WITH POEM

Author [Lajin M.¹](#)

Institute 1 SHARP Health Care, Gastroenterology, San Diego, United States
DOI 10.1055/s-0042-1745098

A 50-year-old female with Achalasia II, presented with an Eckardt score of 9. After submucosal injection, a mucosal incision was made using a triangular knife (Endocut current) at the posterior-lateral wall. The tunnel was entered and submucosal dissection was performed with spray coagulation extending the tunnel to 2 cm below the gastric cardia.

Following that myotomy was started 6 cm above the GE junction and extended till 2 cm into the gastric cardia.

The tunnel entry was closed with clips.

A water-soluble esophagram the following day showed no leak.

Follow-up 3 months later, she has no dysphagia.

eP246 ENDOSCOPIC VACUUM THERAPY FOR COMPLEX CHRONIC POSTOPERATIVE ESOPHAGEAL LEAKS

Authors [Lemos Garcia J.¹](#), [Rosa I.¹](#), [Conceição D.¹](#), [Correia Gomes L.¹](#), [Moleiro J.¹](#), [Claro I.¹](#)

Institute 1 Instituto Português de Oncologia de Lisboa Francisco Gentil, Gastroenterology, Lisbon, Portugal
DOI 10.1055/s-0042-1745099

Aims Anastomotic leak is a serious complication of esophagectomy. Endoscopic vacuum-assisted closure (EVAC) is a promising therapy, but its role in chronic leaks is not well established. We describe the case of a patient with refractory multiple esophageal leaks.

Methods A 62-year-old male with a large (7x7x5cm) symptomatic epiphrenic diverticulum underwent surgical diverticulectomy and distal oesophagus myotomy (December/2019). Due to oesophageal leak with empyema, he was re-intervened twice (leak closure, lateral oesophagostomy, oesophagus stapling plus jejunostomy), without success. Endoscopic evaluation revealed a 3mm leak, not amenable to clip closure. Esophageal stent placement was proposed, but refused. After 79 days, he was discharged with a patent small leak orifice, under antibiotics and exclusive jejunal feeding. After one year of recurrent pulmonary infections and spontaneous thoracic drainage everytime he tried to resume oral feeding, EVAC was proposed. The patient was referred to our unit and underwent endoscopic evaluation, showing a dilated, tortuous esophagus with five patent fistula openings with pale, well-defined borders. EVAC was started and the sponge was switched every two days.

Results After 29 days/12 sponges, 3 of the fistula openings were closed. There were no adverse events. Clip closure was attempted and the patient was discharged with monthly re-evaluation. After 1 month, only one orifice remained, despite the patient's non-adherence to *nil per os*.

Conclusions In a refractory chronic case, EVAC allowed closure of 4/5 fistula openings. Therefore, it seems a safe alternative to consider even in late post-surgical esophageal leaks not amenable to stent placement or surgical correction.

eP247 DEDICATED STENT WITH SHORT PROXIMAL HEAD DESIGN FOR LESIONS AFFECTING THE CERVICAL OESOPHAGUS: CUMULATIVE EXPERIENCE IN A REFERRAL CENTRE

Authors [Luna-Rodriguez D.¹](#), [Garcia-Sumalla A.¹](#), [Velasquez-Rodriguez J.G.¹](#), [Consigliieri C.¹](#), [Maisterra S.¹](#), [Calvo M.²](#), [Galan M.C.²](#), [Miro M.³](#), [Gornals J.B.¹](#)

Institutes 1 Bellvitge University Hospital, Interventional Endoscopy Unit, Barcelona, Spain; 2 Bellvitge University Hospital, Oncology Department, Barcelona, Spain; 3 Bellvitge University Hospital, General Surgery Department, Barcelona, Spain
DOI 10.1055/s-0042-1745100

Aims Analysis of our experience with this type of esophageal stent. Evaluation of its feasibility, safety and efficacy.

Methods Retrospective, single-center, and descriptive study. All those patients in whom a NITI-S Cervical Esophageal Stent (Taewoong Medical) was placed between 2012 and 2021 were identified from a specific stent-database. Demographics, technical and clinical data were collected from diagnostic tests and our health service provider.

Results Seventeen patients were identified. Demographic and clinical characteristics are summarized in Table 1. The most used stent size was: ESP1610FV (58%). Technical success was 82%. Proximal end-flare deployment: 16cm from incisors (range: 12-19cm). Clinical success (oral diet tolerance) was 100%. Adverse events: 2 distal migrations, 1 ingrowth, with endoscopic resolution; 1 proximal migration and 2 intolerances due to pain that required removal. Mean follow-up: 3 months (SD \pm 5.6). Up to 80% of the cases passed away and were related to the malignant disease's progression.

► Table 1

Gender (Male/Female)	11 (65%) / 6 (35%)
Age	Mean: 69 years
Stent Indication (Stenosis/Fistulae/Perforation/Transit reconstruction)	12 (70.6%) / 3 (18.2%) / 1 (5.9%) / 1 (5.9%)
Malignant origin (Yes/No)	13 (76%) / 4 (14%)
Type on neoplasia (Squamous cell esophageal carcinoma / Esophagus adenocarcinoma / ORL malignancy)	8 (61%) / 1 (7.6%) / 4 (31.3%)

Conclusions This is one of the most extensive case series reporting the use of this dedicated cervical oesophageal stent. The main clinical indication is palliative for severe dysphagia. This stent seems to be effective and a safe option for cervical locations.

eP248 OVERTUBES IN ENDOSCOPY: A SYSTEMATIC REVIEW

Authors Martínez-Alcalá A.¹, Fry L.¹, Mönkemüller K.¹

Institute 1 Amedeo University Teaching Hospital, Gastroenterology, Halberstadt, Germany

DOI 10.1055/s-0042-1745101

Aims Overtubes can be very helpful tools for complex endoscopies, such as foreign body extractions. Still, there is a paucity of data regarding other potential uses including placement of self-expanding metal stents and complex endoscopic resections. We aimed describe traditional and novel uses of overtubes in interventional endoscopy.

Methods A literature search was conducted with multiple variations of the search terms for overtubes in endoscopy. The search engines, Medline and Scopus, were used, from 1966 through October 2021. All human studies (case reports, case series, and cohort studies) were included. **EXCLUSION criteria:** overtube use for traditional deep enteroscopy (single-balloon, double balloon and spiral enteroscopy). We categorized findings into standard uses and novel uses.

Results The literature search yielded 1809 results with 108 relevant studies, including 502 patients. Traditional indications were: foreign body extractions, Zenker resection and endoscopic variceal ligations. New uses included: stent placement into the stomach, small bowel and colon, deployment of capsule endoscope, salvage ERCP in patients with achalasia, placement of PEJ in patients with esophageal cancer or disruption of the anastomosis. overtube-assisted enteroscopy with jejunostomy, POEM, application of radiofrequency ablation in Barrett, and ESD. Complications although rare included mucosal injury, perforation, fracture of thyroid cartilage, pancreatitis in balloon enteroscopy, and separation of overtube from bite block.

Conclusions Overtubes have two key functions: 1) as a protective barrier and 2) as a conduit for therapeutic interventions. Therapeutically, it serves as an extra working channel, facilitates intubation of otherwise difficult to reach areas, provides stability, and prevents looping of the GI tract.

eP249 LARGE SUPERFICIAL SQUAMOUS CELL CARCINOMA IN THE SETTING OF ACHALASIA TREATED BY ENDOSCOPIC SUBMUCOSAL DISSECTION: PARTICULAR FEATURES OF SUPERFICIAL CARCINOMA ON STASIS RELATED ESOPHAGEAL HYPERKERATOSIS

Authors Mesureur L.¹, Yared R.¹, Verset L.², Van Laethem J.-L.¹, Louis H.¹, Deviere J.¹, Lemmers A.¹

Institutes 1 Erasme Hospital, Gastroenterology Department, Brussels, Belgium; 2 Institut Jules Bordet, Pathology department, Brussels, Belgium
DOI 10.1055/s-0042-1745102

Aims

Methods

Results A 69-years-old man presented dysphagia and weight loss for several years was referred after the discovery of a 6mm lesion with high-grade dysplasia.

Abdominal computed tomography demonstrated stasis and wall thickening of the distal esophagus. High resolution manometry disclosed absent esophageal peristalsis but lower esophageal sphincter acceptable relaxation.

Endoscopy revealed in the lower two thirds of the esophagus a keratinized mucosa caused by food stasis in the context of achalasia. A large flat (O-IIb) suspicious squamous dysplastic lesion was observed on 50% circumference from 30 to 40cm of the incisors.

Examination using magnified narrow-band imaging and the near focus revealed Type B2 intrapapillary capillary loops in favor of mucosal lesion. Lugol chromoendoscopy confirmed the delineation of the lesion and its suspicious feature. En-bloc endoscopic resection using ESD was performed from 29 to 40cm of the incisors up to 60% of the circumference. Stricture prevention with in loco triamcinolone injection was offered associated to proton pump inhibitors treatment.

The histopathological analysis of the 118x95mm resected specimen revealed a squamous cell carcinoma in situ of 100mm with a focal 9mm site of malignancy (pT1a m3 moderately differentiated squamous cell carcinoma without lymphovascular or perineural invasion, no tumor budding). Vertical and lateral margins were free. The resection was curative.

Endoscopic follow-up showed complete healing of the ESD scar without stricture or signs of recurrence. Dysphagia and weight loss resolved in the meanwhile.

The particularity of this case is the feature of large superficial SCC in the setting of stasis and keratinized esophagus associated to achalasia.



► Fig. 1

Conclusions:

eP250 DYSPLASTIC BARRETT'S OESOPHAGUS (DBO): REAL WORLD DATA REGARDING LONG TERM FOLLOW-UP

Authors Axiaris G.¹, Ioannou A.¹, Papathanasiou E.¹, Tzakri M.¹, Leonidakis G.¹, Zampeli E.¹, Baxevanis P.¹, Michopoulos S.¹

Institute 1 Alexandra Hospital, Gastroenterology, Athens, Greece

DOI 10.1055/s-0042-1745103

Aims Evaluation of the long-term follow up of patients with DBO.

Methods Single center prospective analysis of DBO patients' data (demographic, endoscopic and histologic) with at least a 6 month follow up and the endoscopic interventions applied: endoscopic mucosal resection (EMR), argon plasma coagulation (APC), radiofrequency ablation (RFA).

Results 76 patients with DBO were evaluated from 01/2008 to 09/2021 and 69 were included in the analysis: 55(79.7%) men, mean age 55.7 (± 12.6) years with a follow-up of 396.7 patient-years (median: 4.08, 0.08-19.99). Initially 52(75.4%) had Low Grade Dysplasia (LGD), 11(15.9%) High Grade Dysplasia (HGD) and 6(8.7%) intramucosal carcinoma (ImCa). 36 had significant comorbidities and 20 were active smokers while 22 former smokers. Of the 52 LGD patients, 41 followed surveillance for 159.58 patient-years (median: 1.06, R: 0.73-11.39). Multivariate regression analysis revealed that the probability of endoscopic intervention was 5 times greater for younger patients ($p = 0.06$) and 8 times greater for BO length > 3 cm ($p = 0.058$). 19 of 41 patients with HGD presented histologic improvement inversely correlated with the initial BO length ($p = 0.09$). 26 patients (11 LGD, 9 HGD, 6 ImCa) underwent endoscopic intervention. Initial interventions were 14 EMR, 7 RFA and 6 APC. There were 62 additional endoscopic interventions with APC or RFA. Their number per person was correlated with the initial OB length ($p = 0.01$).

Conclusions 1) A significant percentage of patients with LGD DBO could safely follow endoscopic surveillance. 2) The need of endoscopic intervention is influenced by the age and the initial length of OB. 3) The initial length of OB determines the need for additional interventions

eP251 ESOPHAGEAL VESICLES: ENDOSCOPIC, HISTOLOGIC AND ELECTRONMICROSCOPIC DESCRIPTION OF NOVEL LESIONS AT THE GASTROESOPHAGEAL JUNCTION

Authors Mönkemüller K.¹, Fry L.¹, Delgado-Linares C.¹, Martínez-Alcalá A.¹

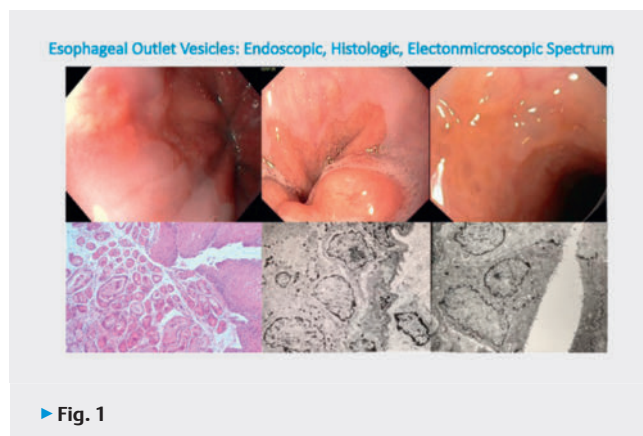
Institute 1 Amedeo University Teaching Hospital, Gastroenterology, Halberstadt, Germany

DOI 10.1055/s-0042-1745104

Aims During upper endoscopy we have often observed the presence of small yellow vesicles above the Z-line. These lesions have not been described in the literature.

Methods Patients undergoing EGD for dyspepsia and reflux symptoms were investigated using standard and high-definition white light endoscopes with magnification (up to $\times 110$) capability (Olympus, Q160Z, Germany). Histology was performed using H&E. In 100 patients we also performed electron microscopy with magnification (7000 \times , Phillips, Holland). All additional lesions found in the esophagus and stomach were carefully described. The occurrence of these yellow vesicles was analyzed in the context of these lesions using uni- and multivariate analysis, Mann-Whitney and Student t-test.

Results A total 197 were included (102 women and 95 men, mean age 55.5, SD ± 15). The incidence of yellow vesicles was 30% of EGDs. Some lesions had a shape of a "volcano" with cylindrical epithelium on its tip. Their sizes ranged from 3 mm to 10 mm. These yellow vesicles had a significant correlation with cylindrical esophageal epithelium (including Barrett esophagus) ($p = 0.009$) and inverse correlation with erosive esophagitis ($p = 0.024$) and female sex ($p = 0.011$). Histology and electron microscopy demonstrated submucosal glands and cylindrical epithelium, including pancreatic and gastric metaplasia, similar to classic "inlet patches".



Conclusions Yellow vesicles in the distal esophagus were found in 30% of patients undergoing EGD and correlated with Barrett's esophagus, with negative correlation with female sex and erosive esophagitis. These small vesicles contain submucosal glands and gastric metaplasia and could be thus considered esophageal "outlet patches" (heterotopies).

eP252 FEASIBILITY AND SAFETY OF A NOVEL OVER-THE-SCOPE DEVICE TO FACILITATE ENDOSCOPIC ARGON PLASMA COAGULATION – AN EX-VIVO STUDY

Authors Mueller J.¹, Kayser G.², Kuellmer A.¹, Bettinger D.¹, Schiemer M.¹, Offensperger F.¹, Robert T.¹, Schmidt A.¹

Institutes 1 University of Freiburg, Medicine II, Medical Center, Freiburg im Breisgau, Germany; 2 University of Freiburg, Pathology, Freiburg im Breisgau, Germany

DOI 10.1055/s-0042-1745105

Aims Argon plasma coagulation (APC) is an electrosurgical procedure used for various indications in the gastrointestinal tract, such as ablation of dysplastic Barrett's mucosa. Homogeneous and safe application can be compromised by varying distances and suboptimal angle of the probe to the tissue. The Argon Precision Cap is a novel endoscopic device developed to optimize endoluminal APC treatment. Objectives of this study were to assess feasibility and safety and to determine suitable APC settings for tissue ablation in the esophagus.

Methods Feasibility of APC treatment in different locations was assessed in 20 explanted porcine esophagi. To assess thermal effect on the tissue, additional 132 ablations of predefined areas using various APC settings were performed in the opened esophagus. Depth of thermal injury was assessed histologically.

Results Ablations in all quadrants of the esophagus were feasible. In the opened esophagus, macroscopically complete and homogeneous ablations of predefined 1.5x1.5 cm areas were performed in a median time of 25 sec (range 7-87 sec). Histologically, thermal effects involving the whole thickness of the mucosa were visible with all settings. APC with Pulsed mode resulted in deep thermal damage with all power settings. No lesions of the muscular layer occurred using Precise (E8,9) and Forced (10, 20 W) mode.

Conclusions Esophageal APC using the novel cap is feasible and safe in an ex-vivo model. The device has the potential to further improve APC treatment of larger mucosal areas. In vivo studies are necessary to further assess efficacy and safety.

eP254 DIGESTIVE NEO-EPITHELIZATION AFTER ENDOSCOPIC STENTING FOR COMPLETE UPPER DIGESTIVE TRACT DISUNION

Authors Ouazzani S.^{1,2}, Lemmers A.¹, Gonzalez J.M.², Closset J.³, El Moussaoui I.³, Deviere J.¹, Barthet M.²

Institutes 1 Erasme Hospital – ULB, Gastroenterology, Brussels, Belgium; 2 Hôpital Nord – APHM, Gastroenterology, Marseille, France; 3 Erasme Hospital – ULB, Digestive Surgery, Brussels, Belgium

DOI 10.1055/s-0042-1745107

Aims Complete digestive disunion due to anastomotic leakage is considered as a total contra-indication to endoscopic repair. However, recent publications showed possibility of endoscopic treatment by insertion of SEMS. The aim of this series is to show the possibility of endoscopic management of some selected cases with complete digestive disunion.

Methods Consecutive patients with complete and circumferential upper-GI anastomotic disunion were treated in two European tertiary care centers between 2009 and 2020 by endoscopic insertion of SEMS. Treatment was performed with therapeutic gastroscope under general anesthesia.

Results A total of 7 patients (4males; median age:60, range:49-77) with complete digestive disunion were successfully treated by endoscopy. Three patients (43 %) had a malignant disease. First endoscopy was performed after a median of 14 days after the surgery (range:2-30). In 4 patients, a previous surgical or percutaneous drainage was attempted. Three patients (43 %) experienced distal migration of SEMS (20 % of all placed stents), without precluding the healing. There was no other complication.

All completely healed after a median of 8 weeks (range:4-32) of stenting, needing a median of 3 endoscopic sessions (range:2-6) with a median number of 2 SEMS insertion (range: 1-6) by patient.

Six patients had a median follow-up of 38 months (range:20-120). Among them, three patients (50 %) experienced a stricture, all successfully treated by endoscopic dilation (median of 3 sessions; range:2-8). No patient experienced recurrence of leakage.

Conclusions This case series showed that complete digestive rupture could be, in selected cases, successfully treated by endoscopy, adding a proof-of-concept about a guided tissue regeneration alongside SEMS.

eP255 ESOPHAGEAL STENTS IN THE PALLIATIVE TREATMENT OF MALIGNANT STENOSIS

Authors Oustani M.¹, Zazour A.¹, Khannoussi W.¹, Kharrasse G.¹, Ismaili Z.¹

Institute 1 Mohammed VI University Hospital, Digestive Diseases Research Laboratory, Mohammed Ist University, Hepato-gastroenterology department, Oujda, Morocco

DOI 10.1055/s-0042-1745108

Aims To evaluate the efficiency of the placement of an esophageal stent in the palliative treatment of malignant stenosis.

Methods We conducted a descriptive retrospective study about all the patients to whom we put an esophageal stent as a palliative treatment of malignant stenosis.

Results The study was about 11 patients including 8 men (73 %) and 3 women (27 %). The average age of the patients was 53 years (30-83 years old). Six patients (54,5 %) had an esophageal adenocarcinoma, four cases (36,5 %) had an extrinsic compression of a bronchial cancer including one case complicated with an eso-bronchial fistula, and one patient had an extrinsic compression by metastatic mediastinal lymphadenopathies. The stenosis was in the lower esophageal in 6 cases (64 %) and in the middle esophageal in the rest. The average extent of the stenosis was at 2,2cm (1,5-7cm). The metallic esophageal stent was successfully put in all the patients. It was non-covered in 5 cases (45,4 %), partially covered in 3 cases (27,3 %), and fully covered for 3 patients (27,3 %) in whom one had an eso-bronchial fistula. We observed an intra-gastric migration

of a fully covered stent in one case. All our patients had presented an improvement of their swallowing quality. The dysphagia recurred 2 months after the gesture in one patient, due to the progression of his tumor.

Conclusions The placement of a metallic esophageal stent is a palliative treatment of choice for intrinsic or extrinsic esophageal malignant stenosis. It allows an improvement of the quality of life of those patients whose prognosis is bad

eP256 ACCURACY OF AAR, APRI, FIB-4 AND MELD SCORES AS PREDICTORS OF A VARICEAL SOURCE AMONG CIRRHOTIC PATIENTS PRESENTING WITH UPPER GASTROINTESTINAL BLEEDING

Authors Papastergiou V.¹, Mela M.¹, Christidou A.¹, Arvanitis K.¹, Georgiadi T.¹, Trikola A.¹, Tsatsa A.¹, Almpani F.¹, Karampekos G.¹, Chatzievangelinou C.¹, Katopodi K.¹, Viazis N.¹, Archavlis E.¹, Mantzaris G.¹

Institute 1 Evangelismos-Polyclinic General Hospitals, Gastroenterology, Athens, Greece

DOI 10.1055/s-0042-1745109

Aims In patients with cirrhosis admitted with upper gastrointestinal bleeding (UGB), identification of a variceal source prior to endoscopy would be clinically useful. We determined the accuracy of aspartate aminotransferase to alanine aminotransferase ratio (AAR), aspartate aminotransferase to platelet ratio index (APRI), fibrosis-4 index (FIB-4) and model for end-stage liver disease (MELD) in identifying a variceal origin of UGB in cirrhotic patients.

Methods Cirrhotic patients undergoing upper endoscopy for UGB between 7/2019 and 10/2021 were retrospectively reviewed. Diagnostic accuracies were assessed using the area-under-receiver-operating-characteristic-curve (AU-ROC) with 95 % confidence intervals (CIs).

Results Overall, 59 patients (74.6 % males, 61.3 ± 11.9 years) with cirrhosis of different etiologies (alcohol = 22, viral hepatitis = 18, non-alcoholic steatohepatitis = 6, other = 13) were included. Among them, 45 (76.3 %) had esophageal varices (EVs) and in 39 (66.1 %) varices were identified as the culprit of UGB. The most common cause of non-variceal bleeding were peptic ulcers (10/59; 16.9 %). The AUROCs for predicting the presence of EVs were AAR 0.51 (95 %CI: 0.35-0.67), APRI 0.54 (95 %CI: 0.35-0.73), FIB-4: 0.47 (0.31-0.64) and MELD 0.42 (95 %CI: 0.24-0.59). For identifying a variceal source of UGB, the AUROCs were AAR 0.48 (95 %CI: 0.32-0.64), APRI 0.41 (95 %CI: 0.24-0.57) FIB-4 0.41 (95 %CI: 0.25-0.57) and MELD 0.40 (0.22-0.53).

Conclusions AAR, APRI, FIB-4 and MELD exhibited low performance for predicting the presence of EVs and for identifying a variceal source in patients with cirrhosis admitted with UGB.

eP257 ENDOSCOPIC DILATATION OF ESOPHAGEAL STRICTURE IN A YOUNG ADULT WITH EPIDERMOLYSIS BULLOSA DYSTROPHICA

Authors Pappa A.¹, Florou T.¹, Manolakis A.¹

Institute 1 University Hospital of Larissa, Gastroenterology Department, Larissa, Greece

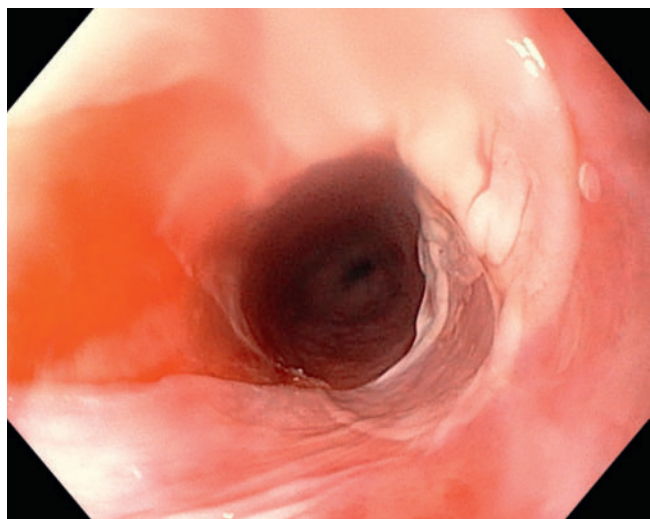
DOI 10.1055/s-0042-1745110

Aims A 26-year-old patient with a history of epidermolysis bullosa, visited our department due to gradually worsening dysphagia, mainly in solid foods, with multiple episodes of bolus infractions within a year.

Methods Cervical-chest CT scans, esophagogram and esophageal manometry were performed with no specific findings. However, the esophagogram showed a reduced width of the esophageal lumen with concomitant thickening of its mucosa and an irregular wall with filling deficits and small sharp incisions. Gastroscopy was then performed, where due to narrowing below the upper esophageal sphincter (UES), no further passage of the gastroscope was allowed.

Results The esophageal mucosa appeared hyperemic, with spontaneous fragility and oozing self-limited bleeding from vesicular overgrown lesions, which

formed and fell during endoscopy in real time, both from the infusion of the esophagus with carbon dioxide and from the contact of the gastroscope with the esophageal mucosa. A bronchoscope connected to a water pump was then used, with an outer tube diameter < 6mm that approached the 3.5cm stenosis and placed a direct atraumatic guide wire directly into the stomach. At the same time, a 10mm air balloon (3 attempts lasting 1 minute each) of the esophageal stenosis was performed with a successful passage into the stomach and without immediate complications. The patient was immediately placed in a high viscosity oral solution of budesonide 1mg/10ml for 1 month with concomitant antifungal gel.



► Fig. 1

Conclusions Finally, the optimal endoscopic and pharmacological management and treatment of specific adult patients with esophageal recurrent stenoses of the blistering epidermolysis type remains the subject of further research and study.

eP258 ENDOSCOPIC VACUUM THERAPY FOR PATIENTS WITH ESOPHAGEAL PERFORATION: A MULTI-CENTER RETROSPECTIVE COHORT STUDY

Authors Luttikhoud J.¹, Pattynama L.M.D.^{2,3}, Seewald S.⁴, Groth S.⁴, Morell B.⁵, Eshuis W.J.³, Pouw R.E.²

Institutes 1 Karolinska University Hospital, Division of Surgery, Dept. of Upper Abdominal Diseases, Stockholm, Sweden; 2 Amsterdam University Medical Centers, Dept. of Gastroenterology and hepatology, Amsterdam, Netherlands; 3 Amsterdam University Medical Centers, Dept. of Surgery, Amsterdam, Netherlands; 4 Klinik Hirslanden, Centre of Gastroenterology, Zürich, Sweden; 5 University Hospital, Dept. of Gastroenterology and hepatology, Zürich, Switzerland

DOI 10.1055/s-0042-1745111

Aims Esophageal perforations, due to vomiting (Boerhaave syndrome) or iatrogenic cause, are associated with high morbidity and mortality. Recently, endoscopic vacuum therapy (EVT) was introduced as new treatment option for esophageal perforations. The aim of this study was to describe outcomes of initial experiences with EVT for treatment of these perforations.

Methods For this retrospective multi-center cohort study, all patients primarily treated with EVT for esophageal perforation at three European centers, from Jan 2018-Oct 2021, were included. Data on patient characteristics, EVT and outcomes were analyzed. The primary endpoint was success rate, meaning closure of the defect, assessed by endoscopy or CT-scan.

Results 18 patients were included (Table 1). Successful EVT was achieved in 16 patients, with 12 patients using EVT alone. Additional treatment modalities (stent, clips or intercostal muscle-flap placement intracavitary) were used in 4 patients. In 2 patients EVT failed: 1 deceased during treatment (unknown cause) and 1 underwent additional esophagectomy because the defect persisted.

Median hospital stay was 17 days, with median EVT-duration of 11 days and 3 EVT-related endoscopies. Six patients received additional percutaneous/surgical drainage. EVT-associated complications occurred in 2 patients: 1 iatrogenic increase of the defect occurred during overtube placement, and 1 hemorrhage occurred, requiring blood transfusion, which spontaneously stopped.

► **Table 1** Baseline characteristics.

Total number of patients, <i>n</i>	18
Male	10
Female	8
Age in years, <i>mean (range, SD)</i>	69.9 (39–81, 11.8)
Etiology of defect, <i>n</i>	18
ESD	5
Boerhaave syndrome	3
Dilation	3
EUS	1
Glass ingestion	1
Diverticulotomy of Zenker's diverticulum	1
Placement of duodenal tube	1
Rigid esophagectomy with removal of a foreign body	1
ERCP	1
TEE	1

Conclusions EVT is a promising organ-preserving treatment for esophageal perforation, with a success rate of 89%. Although additional intervention was necessary in some cases, esophagectomy was only required in one patient. More experience with the technique and indications for use will likely improve success rates.

eP259 VARICEAL BLEEDING DIFFERENCES BETWEEN 2010 AND 2020 – A SINGLE CENTRE EXPERIENCE

Authors Pelajić S.¹, Budimir D.¹, Bakula D.¹, Nikolić M.¹, Tomašić V.¹, Kovačina M.², Hrabar D.¹, Pavić T.¹

Institutes 1 University of Zagreb, Department of Internal Medicine, Division of Gastroenterology, «Sestre Milosrdnice» University Hospital Center, Zagreb, Croatia; 2 University of Zagreb, Department of Internal Medicine, Division of Gastroenterology, OB Bjelovar, Bjelovar, Croatia
DOI 10.1055/s-0042-1745112

Aims The aim of this study was to demonstrate differences in epidemiological, clinical and endoscopic characteristics of variceal bleeding and outcomes between 2010 and 2020.

Methods From January to December 2010 a total of 20 patients and from January to December 2020 a total of 14 patients were treated for variceal bleeding. They were screened and enrolled in the study.

Results There was no significant difference in age [2010 (53.3 ± 10.1) vs. 2020 (62.0 ± 15.7)]. Majority of patients were men [2010 (16/80%) vs. 2020 (11/79%)]. In

2010 all patients had alcohol-related liver disease (ARLD) as the cause of portal hypertension (PH) while in 2020 10/70 % of the patients had ARLD ($P < 0.001$). Other causes of PH were primary biliary cirrhosis, hepatitis B and hepatocellular carcinoma. Initial haemostasis was successful in the majority of patients [2010 17 (85 % vs. 2020 14 (100 %)]. N-butyl cyanoacrylate was used for initial haemostasis for 15 (75 %) of patients in 2010. In 2020 gummi band and mini loop ligation were used in 9 (64 %) patients, which is a significant rise ($P = 0.006$). The most common type of bleeding prophylaxis were gummi band and mini loop ligation for both time periods [2010 10 (50 %) vs. 2020 11 (78 %)]. 30-day mortality was not significantly different [2010 1 (5 %) vs. 2020 1 (7 %)].

Conclusions Patients with variceal bleeding were predominately men and leading cause of PH was ARLD in both time periods. Majority of patients had initial haemostasis with N-butyl cyanoacrylate in 2010, while in 2020 gummi band and mini loop ligation were more prevalent.

eP260 CHROMOENDOSCOPY WITH IODINE-POTASSIUM IODINE SOLUTION IMPROVES THE DETECTION OF EOSINOPHILIC ESOPHAGITIS

Authors Pham K.D.-C.¹, Lauritzen S.S.¹, Tjora E.², Sætran H.³, Gilja O.H.¹, Hatlebakk J.G.¹, Havre R.F.¹

Institutes 1 Haukeland University Hospital, Dept. of Medicine, Bergen, Norway; 2 Haukeland University Hospital, Dept of Children and Adolescence, Bergen, Norway; 3 Haukeland University Hospital, Dept. of Pathology, Bergen, Norway

DOI 10.1055/s-0042-1745113

Aims Eosinophilic esophagitis (EoE) is a chronic immune-mediated condition characterized by eosinophilic infiltration of the esophageal mucosa. Endoscopic findings in EoE may be non-specific. The diagnosis is confirmed on histology. Multiple biopsies from ≥ 2 segments are generally recommended but are occasionally negative due to a patchy distribution of EoE. This study aimed to evaluate whether chromoendoscopy with Iodine-Potassium iodine (IPI) in the esophagus can improve the detection of EoE.

Methods Patients with dysphagia and suspected EoE underwent gastroscopy with IPI 1 % staining of the esophagus. An adequate number of biopsies were taken in ≥ 2 segments of the esophagus. In patients with heterogeneous staining from IPI, selective biopsies were taken from areas with and without IPI staining.

Results 50 patients were included, of whom 30 had histologically proven EoE. All patients with EoE had diminished uptake of IPI. Among patients with EoE, five had segmental and nine had a patchy disease. Six patients with other esophageal mucosa diseases, but no EoE had diminished uptake of IPI. In patients with segmental or patchy EoE, the median number of eosinophils was significantly higher in areas with diminished uptake of IPI, compared to areas with normal uptake (86 versus 7 eosinophils/high power field, $p = 0.01$).

Conclusions Chromoendoscopy with IPI may be a useful in vivo technique for identifying EoE during endoscopy, and may allow targeted biopsies in patients with segmental or patchy disease.

eP261 PREDICTIVE FACTORS OF REBLEEDING AFTER THE FIRST ENDOSCOPIC THERAPY OF ESOPHAGEAL VARICEAL HEMORRHAGE

Authors Rais K.¹, El Mqaddem O.¹, Dedane E.¹, El Eulj O.¹, Zazour A.¹, Kharasse G.¹, Ismaili Z.¹, Khannoussi W.¹

Institute 1 University Hospital Center of Mohammed VI, Hepato Gastro Enterology, Oujda, Morocco

DOI 10.1055/s-0042-1745114

Aims Variceal rebleeding describes bleeding that occurs ≥ 120 hours after the first hemorrhage provided that hemostasis was initially achieved. It is associated with a high rate of mortality. This study aims to determine the independent factors associated with recurrent variceal bleeding in cirrhotic patients.

Methods 70 cirrhotic with esophageal variceal bleeding (EVB) admitted to our hospital between 2018 and December 2021 were retrospectively analyzed. We distinguish between rebleeding and non-rebleeding group. Demographic information, medical histories, and laboratory test results were collected. The multivariate analysis was performed using Cox regression test to identify independent risk factors of rebleeding. Survival analysis was estimated using the Kaplan-Meier method and compared using the log-rank test.

Results The incidence of rebleeding after EVL was 64 %. By univariate regression analysis, the statistically significant predictor for variceal rebleeding was the presence of high stigmata of bleeding on upper endoscopy ($p: 0.05$). Furthermore, we presume that recurrent hemorrhage is associated with a higher incidence of bacterial infection ($p: 0.006$). However, we found that other parameters such as age, gender, etiology, severity of liver disease (ascites, encephalopathy, hepatocellular carcinoma, portal vein thrombosis), severity of EVB (hemoglobin, blood pressure, requirements of blood transfusion), the presence of large varices or the number of endoscopic variceal banding had no significant influence in the risk of rebleeding. The median survival was lower in rebleeding group calculated at 6 years versus 10 years in the non-rebleeding group ($p: 0.097$).

Conclusions This study provides evidence that recurrent hemorrhage is significantly associated with a higher incidence of bacterial infection and stigmata of bleeding on upper endoscopy. We conclude also that there is no significant difference in median survival between bleeding and non-rebleeding groups.

eP262 CLINICAL AND ENDOSCOPIC CHARACTERISTICS OF PATIENTS WITH RECURRENT ESOPHAGEAL VARICEAL HEMORRHAGE

Authors Rais K.¹, El Mqaddem O.¹, Oustani M.¹, Tammouch Z.¹, Zazour A.¹, Kharasse G.¹, Ismaili Z.¹, Khannoussi W.¹

Institute 1 University Hospital Center of Mohammed VI, Hepato Gastro Enterology, Oujda, Morocco

DOI 10.1055/s-0042-1745115

Aims Esophageal variceal bleeding is the most severe complication in cirrhotic patients with high frequency of rebleeding and mortality. This study aimed to identify characteristics and mortality rate of cirrhotic patients with recurrent variceal hemorrhage.

Methods Retrospective study conducted between 2018-December 2021; include cirrhotic patients with early recurrent VH within 6 weeks (group A) and late rebleeding (group B). Clinical and endoscopic characteristics of patients were analyzed.

Results 45 patients with recurrent VH were included in this study. 13 patients had an early recurrent VH and 35 patients had late rebleeding. Median age was 61 VS 68 years with female predominance in the second group (B). 71 % in group A had an advanced hepatopathy; however 50 % of patients in group B had compensated cirrhosis. All patients benefited from medical management of variceal hemorrhage. 42 % of group A VS 12 % of group B had hemodynamic instability at admission, 50 % required blood transfusion in group A [2-5 CGR] and 48 % in group B [1-3 CGR]. 50 % VS 22 % of patients in two groups respectively had high risk stigmata of bleeding in gastroscopy. The most frequent bleeding source was esophageal varices (100 % VS 75 % of large varices with red markers in group A and B respectively) followed by gastroduodenal ulcer bleeding (7 % in only group A) and gastric varices (6 % in group B exclusively). The mortality rate of patients with early recurrent hemorrhage was 42 % VS 25 % in the second group ($p: 0.03$); taking into account that 66 % of those patients in group A VS 37 % of group B died of uncontrolled bleeding.

Conclusions This study provides evidence that cirrhotic patients with early rebleeding are unstable, had an advanced hepatopathy, more stigmata of bleeding on gastroscopy and high risk of mortality.

eP263 ANTI-REFLUX VERSUS CONVENTIONAL SELF-EXPANDING METAL STENTS (SEMS) IN THE PALLIATION OF ADVANCED ESOPHAGEAL CANCER: A SYSTEMATIC REVIEW AND META-ANALYSIS OF RANDOMIZED CLINICAL TRIALS

Authors Ribeiro Jordão Sasso J.G.¹, Mendonça Proença I.¹, Silvino do Monte Junior E.¹, Sánchez-Luna S.A.², Braga Ribeiro I.¹, Moraes Bestetti A.¹, So Taa Kum A.¹, Turiani Hourneaux de Moura D.^{3,1}, Eduardo Lera dos Santos M.¹, Silva de Paula Rocha R.¹, Marques Bernardo W.¹, Guimarães Hourneaux de Moura E.¹

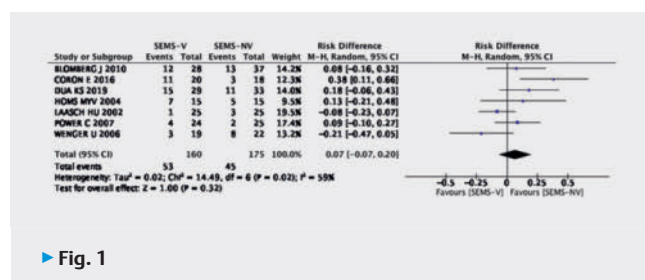
Institutes 1 Hospital das Clínicas da Faculdade de Medicina da Universidade de São Paulo – HC/FMUSP, Gastrointestinal Endoscopy Unit, São Paulo, Brazil; 2 University of Alabama at Birmingham Heersink School of Medicine, Department of Internal Medicine Division of Gastroenterology & Hepatology, Birmingham, United States; 3 Brigham and Women's Hospital – Harvard Medical School, Gastroenterology, Hepatology and Endoscopy, Boston, United States

DOI 10.1055/s-0042-1745116

Aims Conventional self-expanding metal stents (SEMS-NV) are an effective palliative therapy to reduce dysphagia and improve the patient's nutritional status. Gastroesophageal reflux disease (GERD) is a common adverse event after the use of SEMS, and it has been proposed that valved SEMS (SEMS-V) could improve the quality of life of patients. This is a systematic review and meta-analysis that includes only randomized clinical trials (RCTs) and that aimed at comparing SEMS-V versus SEMS-NV in the palliation of advanced esophageal cancer.

Methods A comprehensive search of multiple electronic databases to identify RCTs comparing SEMS-V and SEMS-NV was performed following the PRISMA guidelines. The risk of bias was assessed by RoB 2 tool, data were analyzed with Comprehensive Meta-Analysis V5.4, and quality of evidence by GRADE.

Results Ten RCTs evaluating a total of 467 patients, with 234 in the intervention group (SEMS-V) and 233 in the comparison group (SEMS-NV). There were no statistically significant differences in post-procedure dysphagia (RD -0.07; 95% CI -0.19, 0.06; $p = 0.30$; $I^2 = 0\%$), post-procedural complications (RD 0.07; 95% CI -0.07, 0.20; $p = 0.32$; $I^2 = 59\%$), or technical success (RD -0.03; 95% CI -0.07, 0.01; $p = 0.16$; $I^2 = 0\%$). Regarding stent migration, no significant difference was identified (RD 0.07; 95% CI -0.02, 0.15; $p = 0.11$; $I^2 = 0\%$).



► Fig. 1

Conclusions SEMS-V and SEMS-NV are both safe and effective therapies in the palliation of advanced esophageal cancer. Our study grouped SEMS-V with different anti-reflux mechanisms and therefore future clinical trials are warranted to evaluate potential differences in GERD between different mechanisms.

eP264V ENDOSCOPIC TREATMENT OF ZENKER'S DIVERTICULUM WITH A SURGICAL DEVICE FOR TISSUE SEALING

Author Rizzo G.¹

Institute 1 Azienda Ospedaliera Universitaria di Sassari, Chirurgia Generale 2, Sassari, Italy

DOI 10.1055/s-0042-1745117

Using a standard or pediatric gastroscope, we expose the cricopharyngeal septum with a "duck's beak" overtube. Under endoscopic view, we use the Ligasure (a surgical device normally used in laparoscopic surgery) to cut the septum. This allow a precise section, sealing and hemostasis of the tissue. The tip of the device is about 2 cm long, usually no more than 2-3 cuts are necessary. The advantages over other methods is that it's easy, safe and very fast to use.

eP265V ESOPHAGEAL STRICTURE SECONDARY TO A LARGE CIRCUMFERENTIAL SQUAMOUS LESION REMOVED BY MULTI-TUNNEL ENDOSCOPIC SUBMUCOSAL DISSECTION

Authors Rodríguez de Santiago E.¹, Peñas García B.¹, Parejo Carbonell S.¹, García García de Paredes A.¹, Vazquez-Sequeiros E.¹, Albillos Martínez A.¹

Institute 1 Hospital Universitario Ramón y Cajal, Universidad de Alcalá, IRYCIS, Gastroenterology and Hepatology, Madrid, Spain

DOI 10.1055/s-0042-1745118

A 56-year-old female presented with food impaction. From 16 to 29 cm from the incisors, we visualized a circumferential IIb lesion that prevented the passage of the conventional gastroscope. We made a first submucosal tunnel up to 29 cm from the incisors. Submucosal dissection of the stenotic area (fibrotic and highly vascularised) allowed subsequent access to the distal margin so that we could carry out the distal circumferential incision. We then performed two additional parallel submucosal tunnels. We used traction (clip + thread) to facilitate dissection of the intertunnel submucosa. Size: 130x30mm. Histology: pT1a squamous cell carcinoma with lymphovascular invasion.

eP266 RISK FACTORS FOR REFRACTORY BENIGN ESOPHAGEAL STRICTURES

Authors Sair A.¹, Benhamdane A.¹, Addajou T.¹, Mrabti S.¹, Osman M.¹, Berraida R.¹, Sentissi S.¹, Elkoti I.¹, Rouibaa F.¹, Benkirane A.¹, Seddik H.¹

Institute 1 University of Mohamed V, Rabat, Morocco

DOI 10.1055/s-0042-1745119

Aims Endoscopic dilatation remains the mainstay of therapeutic management of benign esophageal strictures. They can be caused by various disorders or lesions of the esophagus.

Our aim is to report the results of dilatation, as well as the different risk factors of refractory benign esophageal strictures.

Methods This is a retrospective descriptive and analytical study of 33 patients with benign esophageal stenosis who underwent esophageal dilation between 2016 and 2021. Refractory (or recurrent) stenosis was defined as the inability to maintain esophageal caliber at 14 mm diameter over 5 dilatation sessions, or the inability to maintain satisfactory luminal diameter for 4 weeks once a 14 mm diameter was achieved.

Results Of the 33 patients who underwent dilatation for benign esophageal strictures, 38.7% had refractory strictures. The mean age was 50 ± 20.9 years with a sex ratio (M/F) of 2.

All patients had dysphagia and 45.5% had chronic gastroesophageal reflux disease (GERD). Endoscopy revealed low stenosis in 65.6%, medium in 15.6% and high in 18.8%. 50% had peptic stenosis, 31.3% achalasia, 9.4% anastomotic, 6.3% Schatzki ring and 3.1% caustic.

78.8% of the stenoses were dilated by balloon and 21.2% by candles with a mean dilatation caliber of 18.8 ± 6.8 mm.

After univariate analysis, refractory stenoses were associated with the presence of a peptic stenosis ($p = 0.002$) and dilatations of caliber less than 16mm ($p = 0.012$), after multivariate analysis only peptic stenosis was associated with refractory stenoses ($p = 0.034$).

Conclusions In our series, refractory stenosis was present in 38.7%. Peptic stenosis was statistically significantly associated with refractory oesophageal stenosis.

eP267 INFLUENCE OF ANTICOAGULATION THERAPY ON THE OUTCOME OF NONVARICEAL UPPER GI BLEEDING IN PATIENTS REQUIRING INTENSIVE CARE TREATMENT

Authors Schlottmann J.¹, Messmann H.¹, Braun G.¹

Institute 1 University Hospital Augsburg, Augsburg, Germany

DOI 10.1055/s-0042-1745120

Aims To assess therapeutic anticoagulation influence on therapy of patients requiring admission to the ICU due to nonvariceal upper GI bleeding.

Methods Comparison of 50 patient cases of nonvariceal upper GI bleeding admitted to ICU with therapeutic anticoagulation to 50 without over the course of 5 years.

These were compared in duration of ICU stay, hemodynamics, lactate and Hb levels, vasopressor therapy, transfusion needs, endoscopic treatment, Forrest classification of ulcer and OTSC usage.

These were compared using Chi-Square test and t-test.

Results On arrival patients undergoing anticoagulation therapy showed a similar median systolic blood pressure of 102.10 mmHg (SD = 25.37), compared to 106.25 mmHg (SD = 30.86; $p = 0.459$), without relying on vasopressor support more frequently (13 / 25.5 % vs. 16 / 31.4 %; $p = 0.510$). The mean Hb was 7.6 g/dl (SD = 2.92) compared to 7.8 g/dl (SD = 2.81). 23 patients required transfusion therapy (45.1 %) compared to 22 (43.1 %; $p = 0.842$). Lactate showed higher in anticoagulation group, marginally statistically insignificant (3.9 vs 2.7; $p = 0.061$). The amount of OTSC usage did not differ (22/22) with similar rates of Fla and FIIa ulcer among both groups (anticoagulant therapy: 16x Fla, 10x FIIa vs control group: 20x Fla, 13x FIIa). The amount of recurrent bleeding was not increased in the anticoagulation group (total 12 vs 16; 23.5 % vs. 31.4 %; $p = 0.375$).

Conclusions Patients with nonvariceal upper GI bleeding admitted to the ICU receiving therapeutic anticoagulation showed similar therapeutic needs compared to those without. Particularly the recurrent bleeding episodes did not increase.

Limitations included retrospective study design and missing follow-up and data on the quality of anticoagulation.).

eP268V CIRCUMFERENTIAL ENDOSCOPIC SUBMUCOSAL DISSECTION FOR LONG-SEGMENT BARRETT'S ADENOCARCINOMA: THE DOUBLE-TUNNEL AND SINGLE CLIP-AND-LOOP TRACTION METHOD

Authors Sferazza S.¹, Crispino F.², Vieceli F.¹, Fiorentino A.³, Michielan A.¹, de Pretis G.¹

Institutes 1 Gastroenterology and Endoscopy Unit, Santa Chiara Hospital, APSS, Trento, Italy; 2 Gastroenterology & Hepatology Section, PROMISE, University of Palermo, Italy; 3 Gastroenterology, Department of Clinical Medicine and Surgery, University of Naples, Italy

DOI 10.1055/s-0042-1745121

We report a successful endoscopic submucosal dissection of a long-segment Barrett's esophagus (C10M12) adenocarcinoma, using a double-tunnel and single clip-and-loop traction method. After placing markings and submucosal injections, a distal mucosal incision was performed to set up the tunnel distal limit. A submucosal tunnel was created on the anterior wall, where good access is allowed by gravity, and it was extended in the cranial-caudal direction. Subsequently, a posterior tunnel was created with a loop-clip applied on the inferior pillar, to facilitate the anti-gravity access and expedite the submucosal exposure. A 12 cm en-bloc specimen (T1, R0) was extracted in 300 minutes.

eP269 SAFETY AND EFFECTIVENESS OF ENDOSCOPIC SAVARY-GILLIARD DILATOR IN PATERSON-BROWN-KELLY SYNDROME PATIENTS

Authors Chtourou L.¹, Smaoui H.¹, Khrouf O.¹, Kallel R.¹, Gdoura H.¹, Boudabbous M.¹, Mnif L.¹, Amouri A.¹, Tahri N.¹

Institute 1 Hedi Chaker University Hospital, Gastroenterology, Sfax, Tunisia

DOI 10.1055/s-0042-1745122

Aims Paterson-Brown-Kelly syndrome (PBKS) is a rare entity characterized by iron-deficiency anemia, dysphagia, and upper esophageal webs. Treatment consists of mechanical dilation and iron supplementation. The aim of the study was to evaluate safety and effectiveness of Savary-Gilliard bougies dilation for the treatment of PBKS.

Methods This is a descriptive, retrospective study of PBKS patients followed up at a tertiary center from 2009 to 2018 who underwent endoscopic dilation of the web by Savary-Gilliard bougie dilator. For each patient, we collected clinical data, therapeutic procedure and outcome.

Results Twenty patients were enrolled with a median age of 47.36 years and a sex ratio of 0.05. The median duration of dysphagia was 39 months. Iron deficiency anemia was present in all patients with a mean value of hemoglobin of 8.6 g/dL. Upper endoscopy confirmed the presence of a web in the cervical oesophagus in 100 % of cases. Treatment was based on iron supplementation followed by endoscopic dilatation with Savary-Gilliard dilators. There was no complication as serious bleeding or perforation after dilation session and endoscope passed through the esophagus easily. Dysphagia recurred in 4 patients after a median of 25.7 months.

Conclusions Our series confirms that endoscopic Savary-Gilliard dilation, associated with iron supplementation, is safe and effective for the management of esophageal webs in PBKS patients.

eP270 CLINICAL OUTCOMES AFTER ENDOSCOPIC DILATATION OF EOSOPHAGEAL PEPTIC STRICTURE

Authors Chtourou L.¹, Smaoui H.¹, Hachicha I.¹, Kallel R.¹, Gdoura H.¹, Boudabbous M.¹, Mnif L.¹, Amouri A.¹, Tahri N.¹

Institute 1 Hedi Chaker University hospital, Gastroenterology, Sfax, Tunisia

DOI 10.1055/s-0042-1745123

Aims Esophageal peptic stricture (EPS) is the endstage result of chronic gastroesophageal reflux disease. Treatment usually include endoscopic dilation combined with medical therapy. We aimed to determine the procedural outcomes and recurrence rates after endoscopic dilation of EPS.

Methods Patients who underwent endoscopic dilation of an EPS in a university Hospital (2002- 2017) were retrospectively reviewed. We studied the endoscopic and therapeutic parameters. Procedure dilation was performed with Wire-guided dilators (Savary-Gilliard) or Polyethylene balloon dilators. Technical success was defined as resolved dysphagia.

Results Thirty-eight patients were enrolled (66 % male ; mean age 61.2 ± 4 years). All patients had dysphagia at the time of diagnosis. Stricture was located in the lower third of the esophagus in 37 cases. Its average extent is 34.24 mm. A hiatus hernia was associated in 22 cases. Brachyoesophagus was observed in 7 cases. Clinical success of first endoscopic dilation associated with proton pump inhibitors (PPI) therapy was attempted in 80 % of cases. Two dilation sessions (1 – 5) were needed, on average, to achieve remission. No serious complications were reported. Surgery was indicated in 7 cases after failure of endoscopic dilations. The failure of endoscopic dilation was significantly associated with an age < 50 years ($p = 0.006$). Brachyoesophagus was more frequent in operated patients ($p = 0.07$). Gender, smoking, and hiatus hernia were not associated with endoscopic dilation failure.

Conclusions Based on our experience, endoscopic dilation associated with PPI therapy is safe and effective for the management of EPS. Young patient and brachyoesophagus seem to be associated with the failure of this technique.

eP271 THE RELATIONSHIP BETWEEN PORTAL HYPERTENSIVE GASTROPATHY AND GASTROESOPHAGEAL VARICES

Authors Tababi R.¹, Mrabet S.¹, Hassine A.¹, Harbi R.¹, Akkari I.¹, Hassine A.¹, Ben Jazia E.¹

Institute 1 Farhat Hached University Hospital, Gastroenterology, Sousse, Tunisia

DOI 10.1055/s-0042-1745124

Aims So far, the connection linking portal hypertensive gastropathy (PHG) and other endoscopic portal hypertension signs is still unclear. Our study aimed to determine the correlation between PHG and oesophageal varices (OV) as well as gastric varices (GV).

Methods In this single-centre retrospective study, we included all cirrhotic patients from 2008 to 2021. We used the endoscopic grading of New Italian Endoscopic Club (NIEC) for PHG and OV. Sarin's classification was used for GV.

Results We collected data of 200 patients whose mean age was 56.9 years \pm 15 years and with a sex-ratio(M/F) of 0.79. PHG was found in 143 patients: mild (28.7%), moderate (49.6%) and severe (21.7%). Only 9% of patients had no OV. Grade1, grade2 and grade3 OV were observed in 22%, 51% and 18% respectively. There were no IGV1 or IGV2, whereas GOV1 and GOV2 were found in 4.5% and 3% of patients consecutively. PHG was significantly associated with large OV (large-OV: 76.8%, small-OV: 59.7%, $p=0.01$) and GV (93.3% vs 69.7%, $p=0.04$) but not with OV NIEC-grade ($p=0.11$) or GV-type (GOV1: $p=0.22$, GOV2, $p=0.13$). Besides, both mild and moderate PHG were associated with large OV (large-OV: 16.7%, small-OV: 29%, $p=0.04$ in mild PHG; large-OV: 42%, small-OV: 21%, $p<0.01$ in moderate PHG) and correlated to its NIEC-grade (Mild PHG: $r=-0.14$, $p=0.04$; Moderate PHG: $r=0.15$, $p=0.04$). Severe PHG was associated with neither large OV ($p=0.13$) nor OV NIEC-grade ($p=0.13$).

Conclusions Apart from severe form, PHG was associated with large OV along with its grade. It was also associated with GV presence.

eP272V TRANSORAL INCISIONLESS FUNDOPLICATION WITH ESOPHYX-Z 2.0 FOR THE TREATMENT OF GASTROESOPHAGEAL REFLUX AFTER LAPAROSCOPIC HERNIA REPAIR (CTIF). FIRST PROCEDURE IN EUROPE

Authors Temiño López-Jurado R.¹, Turró Arau R.¹, Osorio Aguilar J.², Martí Ragué M.², Rosinach Ribera M.¹, González Suárez B.¹, Ble Caso M.¹, Ortega Sabater A.¹, Espinós Pérez J.C.¹

Institutes 1 Centro Medico Teknon Grupo Quiron Salud, Gastroenterology and Endoscopic Unit, Barcelona, Spain; 2 Centro Medico Teknon Grupo Quiron Salud, Surgery. Institut J Martí- Ragué – A Saenz, Barcelona, Spain
DOI 10.1055/s-0042-1745125

A laparoscopic repair of diaphragmatic crura is done under general anesthesia. Immediately after the hernia repair is completed the EsophyX-Z is introduced through the mouth and advanced into the stomach under direct visualization with the scope inside the device. Then in a retroflexed position an helical retractor is directed towards the Z line, where the tissue is nailed and pulled into the mold, while the device is rotated. Each shot releases two fasteners, which produces the apposition of esophageal and fundic tissue. This process is repeated to create a partial fundoplication of 270 degrees (20 fasteners).

eP274V INTRADIVERTICULAR BARRETT'S ESOPHAGUS ABLATION WITH CHANNEL RADIOFREQUENCY ENDOSCOPIC CATHETER

Authors Torres Monclus N.¹, Miguel Salas I.¹, Torres Vicente G.¹, Bayas Pastor D.¹, Vazquez Gomez D.¹, Pijoan Comas E.², Zaragoza Velasco N.¹, Gonzalez-Huix Llado F.²

Institutes 1 Hospital Arnau de Vilanova, Lerida, Spain; 2 Clínica Girona, Girona, Spain

DOI 10.1055/s-0042-1745127

A 75-year-old man diagnosed with Barrett's C3M7 esophagus which practically extends entirely inside a distal esophageal diverticulum. Two radiofrequency sessions were performed using a 360° circumferential ablation catheter and a third session using a 90° focal ablation catheter. There was evidence of persistence of focal lesions in the intra diverticular area. We used a catheter inserted through the endoscope channel with a 90° flexible blade, which allowed the access to all the walls of the diverticulum. After a single radiofrequency session with this catheter, complete ablation of the metaplasia within the diverticulum was achieved.

eP275 UPPER DIGESTIVE HEMORRHAGE: CLINICAL, ENDOSCOPIC AND EVOLUTIONARY PARTICULARITIES BETWEEN PATIENTS WITH COMMUNITY AND INTRA-HOSPITAL HEMORRHAGE, PROSPECTIVE STUDY

Authors Touibi A.¹, Benhamdane A.¹, Addajou T.¹, Rokhsi S.¹, Sair A.¹, Mrabti S.¹, Berraida R.¹, El Koti I.¹, Rouibaa F.¹, Benkirane A.¹, Seddik H.¹

Institute 1 Militar hospital Mohamed V, gastroenterology II, Rabat, Morocco
DOI 10.1055/s-0042-1745128

Aims The aim of this study is to compare the clinical, endoscopic and evolutionary particularities between patients with community and intra-hospital hemorrhage.

Methods This is a prospective cross-sectional study of 332 patients, conducted over a one-year period between June 2020 and August 2021.

We divided our patients into 2 groups:

- groupe A : patients with community hemorrhage
- group B : patients with in-hospital hemorrhage.

Results For group A the mean age was 58.8 \pm 17.2 years with a sex ratio of 2.2. 20.44% had comorbidities, the endoscopy was abnormal in 88.9% of cases, the cause was dominated by ulcer origin in 42% of cases, active bleeding was found in 13.3% of cases.

For group B, the average age was 61.7 \pm 14.2 years with a sex ratio of 3.5. 58.7% had comorbidities, the endoscopy was abnormal in 85.7% of the cases, the cause was dominated by ulcer origin in 51%, active bleeding was found in 26.9% of the cases, 3 cases of death.

A statistically significant difference between the two groups concern the presence of comorbidities ($p=0.01$), the use of anti-thrombotic drugs ($p=0.012$), the presence of active bleeding ($p=0.008$), use of endoscopic haemostatic procedure ($p=0.04$), and need for transfusions ($p=0.002$). The median Blatchford score was 9 \pm 3.5 and 12 \pm 3 respectively ($p<0.001$). The Rockall score was 4.22 \pm 0.079 and 5.04 \pm 0.131 respectively ($p<0.01$).

Conclusions Ulcer disease was the main cause. There was a higher transfusion requirement, active bleeding rate, use of endoscopic hemostasis, and mortality for in-hospital bleeding. This appeared to be related primarily to higher comorbidities.

eP276 BLACK ESOPHAGUS – ACUTE NECROTIZING ESOPHAGITIS (ANE)

Author Válek J.¹

Institute 1 Hospital Jablonec nad Nisou, p.o., Gastroenterology, Jablonec nad Nisou, Czech Republic

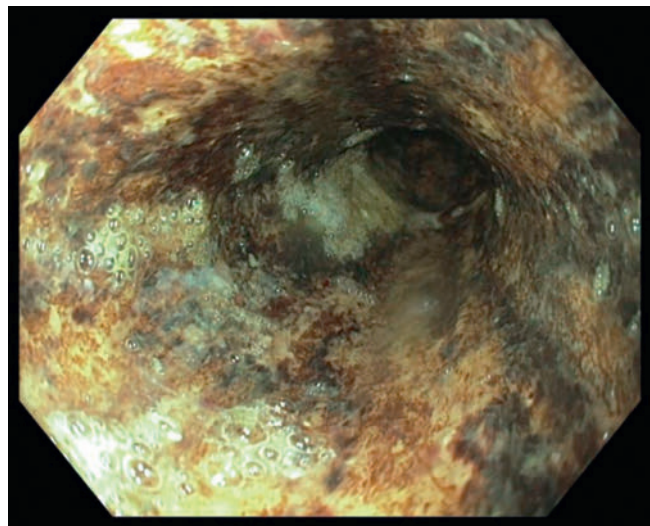
DOI 10.1055/s-0042-1745129

Aims Acute necrotizing esophagitis is a rare disease diagnosed in critically ill patients. It arises from the corrosive effect of gastric juices on the susceptible, ischemic esophageal mucosa. The main symptoms are coffee ground emesis, melena, dysphagia and epigastric pain. Typically in the distal esophagus we see circumferential, black-appearing esophageal mucosa that sharply stops at the GEJ. The patient is kept nil per os and sufficiently intravenously hydrated. Antibiotics and PPI are also given intravenously. Mediastinitis due to esophageal perforation is a severe complication. Chronic complication is a stenosis treated by balloon dilation.

Methods Our cohort included four elderly male with many comorbidities, hospitalized with abdominal pain and shortness of breath.

Gastroscopy was indicated for the presence of coffee ground emesis in two patients, once due to hematemesis and once due to melena. The parenteral nutrition, antibiotics and PPI were the mainstay of the treatment. In spite of the treatment two of the four patients died.

Results Pneumonia combined with the progression of the main disease led to the death of the two patients. Chronic symptomatic esophageal stenosis resulted from the ANE in one patient. The stenosis is frequently dilated due to its short-term effect.



► Fig. 1

Conclusions ANE is a rare but severe disease with the mortality up to 50%. The possibility of the disease must be considered in severely ill polymorbid patients with coffee ground emesis, hematemesis, or melena. Diagnostic endoscopy must be performed very carefully. The main goal of the complex therapy is to stabilize the patient leading to the reperfusion of the esophagus.

eP277 THE NATURAL COURSE OF UNTREATED NEOPLASIA IN BARRETT'S ESOPHAGUS – A CASE-SERIES

Authors Verheij E.P.D.¹, van Munster S.N.¹, Cotton C.C.², Weusten B.L.A.M.^{3,4}, Alvarez Herrero L.⁴, Alkhalaf A.⁵, Schenk B.E.⁵, Schoon E.J.⁶, Curvers W.⁶, Koch A.D.⁷, de Jonge P.J.F.⁷, Tang T.J.⁸, Nagengast W.B.⁹, Westerhof J.⁹, Houben M.H.M.G.¹⁰, Shaheen N.J.², Bergman J.J.G.H.M.¹, Pouw R.E.¹

Institutes 1 Amsterdam University Medical Centers, Gastroenterology and Hepatology, Amsterdam, Netherlands; 2 University of North Carolina, Gastroenterology and Hepatology, Chapel Hill, United States; 3 University Medical Center, Utrecht University, Gastroenterology and Hepatology, Utrecht, Netherlands; 4 St. Antonius Hospital, Gastroenterology and Hepatology, Nieuwegein, Netherlands; 5 Isala Clinics, Gastroenterology and Hepatology, Zwolle, Netherlands; 6 Catharina Hospital, Gastroenterology and Hepatology, Eindhoven, Netherlands; 7 Erasmus University Medical Center, Gastroenterology and Hepatology, Rotterdam, Netherlands; 8 IJsselland Hospital, Gastroenterology and Hepatology, Capelle aan den IJssel, Netherlands; 9 University Medical Center Groningen, University of

Groningen, Gastroenterology and Hepatology, Groningen, Netherlands; 10 Haga hospital, Gastroenterology and Hepatology, Den Haag, Netherlands
DOI 10.1055/s-0042-1745130

Aims Endoscopic therapy (ET) is initiated for Barrett's Esophagus with HGD to prevent non-curable esophageal adenocarcinoma (EAC). Risk estimates for progression to clinically evident EAC are crucial for rational use of ET. We aimed to evaluate time between HGD-diagnosis in BE and development of clinically evident EAC.

Methods From the nationwide Dutch Barrett Expert Center registry cases with untreated HGD and follow-up > 12 months were selected. Data was retrospectively collected. Endoscopic follow-up: time between HGD-detection (baseline) and last endoscopy. Vital follow-up: time between baseline and symptomatic EAC, death, or last data collection. Primary outcome: time of progression to clinically evident EAC (= symptomatic EAC (dysphagia) or EAC-related death).

Results Eleven cases met inclusion criteria (n = 11/2091; mean age 78) with HGD-diagnosis from abnormalities (9/11 pts; 82%) or in random biopsies from flat BE (2/11 pts; 18%). Median endoscopic follow-up was 21 months (IQR 2-32) and median vital follow-up 27 months (IQR 21-45). Overall, 4/11 patients (36%) progressed to clinically evident symptomatic EAC after median 52 months (range 17-78) and eventually died from EAC. Endoscopic follow-up was terminated median 30 months (IQR 16-44) prior to progression. Three patients (3/11) had endoscopic suspicion of progression and underwent endoscopic resection for HGD (n = 1) or T1-EAC (n = 2) after 19-21-26 months. The remaining patients had median 26 months vital follow-up (IQR 16-41) without progression and unrelated death (n = 3), or were alive (n = 1).

Conclusions Even though HGD and early EAC are logical targets for ET, the actual progression to symptomatic disease had a significant duration and this delay may be relevant to consider in patients with a limited life expectancy.

eP278 EFFECTIVENESS OF MODERN ENDOSCOPIC TECHNIQUES IN THE THERAPY OF UPPER VARICEAL DIGESTIVE BLEEDING IN THE ENDOSCOPIC EMERGENCY SERVICE

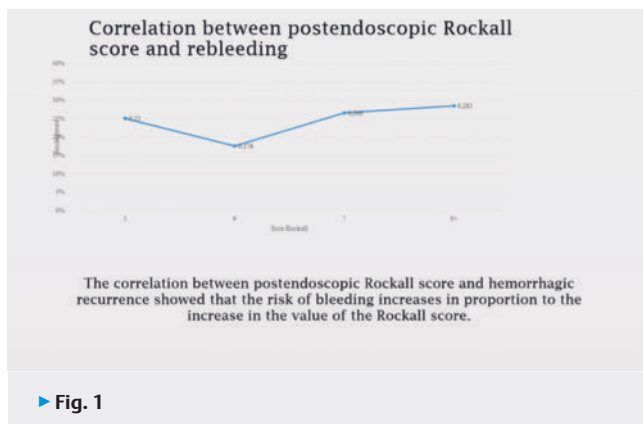
Authors Vlad A.M.¹, Mihalache C.²

Institutes 1 Emergency Clinical County Hospital of Oradea/University of Oradea, Gastroenterology, Oradea, Romania; 2 University of Oradea, Oradea, Romania
DOI 10.1055/s-0042-1745131

Aims An important aspect of upper gastrointestinal bleeding is, in addition to the emergency addressability in the endoscopy service, the risk of rebleeding after procedure and the postendoscopic prognosis of patients with variceal digestive hemorrhage. The paper aims to analyze the risk of rebleeding after the endoscopic procedure of emergency hemostasis and the post-interventional prognosis of patients with upper variceal gastrointestinal bleeding.

Methods The retrospective study was performed on groups of patients who presented to the Emergency Service of the County Emergency Clinical Hospital of Oradea, Romania, in period 1.01.2018-30.08.2018, with clinical manifestation of upper gastrointestinal bleeding and whose endoscopic gastroduodenal hemorrhagic lesion of various etiologies were determined. Following endoscopic, clinical and paraclinical analyses, Rockall severity was established in patients, predicting the predictability of hemorrhagic recurrence and mortality.

Results The correlation between postendoscopic Rockall score and hemorrhagic recurrence showed that the risk of rebleeding increases in proportion to the increase in the value of the Rockall score. Rockall score below 3 have a low risk of bleeding and death, those with a score between 3 and 4 have a moderate risk, scores higher than 4 signifying an increased risk of recurrence of bleeding and unfavorable evolution.



Conclusions The Rockall score is a good predictor of the possibility of rebleeding, post-procedure endoscopic evolution and mortality. The rate of rebleeding, length of hospital stay and mortality in variceal upper gastrointestinal bleeding are directly proportional to the increase in the prognostic risk score.

eP279 3D IMPEDANCE PLANIMETRY IMPROVES PERI-INTERVENTIONAL PROCEDURE IN ENDOSCOPIC THERAPY OF COMPLEX ESOPHAGEAL STENOSIS

Authors Sturm N.^{1,2}, Kalner A.^{2,3}, Binzberger M.^{2,3}, Wagner M.^{2,3}, Seufferlein T.², Walter B.^{1,3,2}

Institutes 1 University Hospital Ulm, Endoscopic Research Unit, Ulm, Germany; 2 University Hospital Ulm, Gastroenterology, Ulm, Germany; 3 University Hospital Ulm, Endoscopy Unit, Ulm, Germany

DOI 10.1055/s-0042-1745132

Aims Non-malignant strictures in the upper GI tract causing dysphagia have significant impact on QoL in patients. Esophageal dilation using fluoroscopic control is standard. Especially complex stenosis challenge the interventional endoscopist regarding size and tissue compliance. Tools to evaluate exact stenosis configuration without additional X-ray exposure are mandatory. 3D-planimetry could offer the possibility to estimate exact size, diameter and tissue resistance.

Methods A prospective, interventional study was conducted at our endoscopy unit. Patients with complex benign stenosis and clinical symptoms were included. 3D-planimetry supported measurement was performed prior and after bougienage. Primary endpoint was success of endoscopic dilation. Success was defined as sufficient dilation of the stenosis in one endoscopic session with endoscopic passage possible after bougienage. Objectifiable differences were analyzed by 3D-planimetry.

Results 26 patients (m/f, 11/14) participated, mean age was 49.5 years (± 23.2) (range 21-82). Etiology of strictures was peptic ($n = 2$), radiation ($n = 10$), anastomosis ($n = 5$), caustic ingestion ($n = 7$) or EoE ($n = 2$). Median diameter of strictures before treatment was 6.8mm (± 2.1) and 8.7mm (± 2.6) after, median length 23.4mm (± 16.5). Successful dilatation was possible in 96.1% ($n = 25$). No severe complications or adverse events were reported. Length of respective stenosis was underestimated by endoscopist in comparison to 3D-supported measurement ($p = 0.016$). Analysis of diameter of stenosis ($p = 0.014$) and CSA ($p = 0.037$) revealed an objectifiable impact by dilation procedure.

Conclusions Periinterventional measurement by 3D-planimetry enables as well direct visual control of stenosis configuration as documentation of postinterventional dilation effect. This might help to adapt more precisely to the stricture, avoiding additional radiation exposure in endoscopic treatment.

eP280 EARLY VERSUS DELAYED ENTERAL NUTRITION FOLLOWING ENDOSCOPIC VARICEAL BANDING IN LIVER CIRRHOSIS: A SYSTEMATIC REVIEW AND META-ANALYSIS

Authors Yadav A.¹, Qaider H.², Slattery E.¹

Institutes 1 University Hospital Galway, Gastroenterology, Galway, Ireland; 2 Mayo University Hospital, Gastroenterology, Castlebar, Ireland

DOI 10.1055/s-0042-1745133

Aims Bleeding oesophageal varices is a common complication of liver cirrhosis and are associated with high mortality. It is common practise to fast patients for 24 to 48 hours post variceal band therapy. However, there is paucity of evidence behind this practise and delayed nutrition can be detrimental to this cohort of patients. Our aim for conducting this systematic review was to explore the efficacy and safety of early enteral nutrition versus delayed enteral nutrition post endoscopic variceal banding.

Methods An extensive search was conducted via online databases to find RCTs comparing early versus delayed enteral nutrition in patients post endoscopic variceal banding. The outcomes we evaluated were early re-bleeding rates, delayed re-bleeding rates, overall mortality, new infection rates, new ascites, new dysphagia, chest discomfort rates and length of hospitalisation. Data was pooled using the random-effects model, and the results were presented as Odds Ratio (OR) or Mean Difference (MD) with corresponding 95 % Confidence Interval (CI).

Results A total of 283 participants from four RCTs were included in this meta-analysis. Early enteral nutrition was associated with shorter length of stay (Mean Difference: -1.49; 95 % CI: -2.17, -0.81; $P < 0.0001$). There was no significant difference between the early enteral nutrition and delayed nutrition groups for rates of early re-bleeding, delayed re-bleeding, mortality, dysphagia, new infection, chest discomfort or new ascites.

Conclusions Early enteral nutrition does not increase the risk of early or delayed re-bleeding and reduces the length of hospitalisation for patients post endoscopic variceal band ligation.

eP281 PREDICTORS OF BLEEDING AFTER ENDOSCOPIC VARICEAL LIGATION

Authors Yavuz A.¹, Akbas M.M.², Akan K.¹, Tuncer I.¹

Institutes 1 Istanbul Medeniyet University, Gastroenterology, Istanbul, Turkey; 2 Istanbul Medeniyet University, Internal Medicine, Istanbul, Turkey

DOI 10.1055/s-0042-1745134

Aims This study aims to assess the predictive value of indices as FIB-4 score, APRI score, platelet count/spleen diameter ratio, spleen size, portal vein diameter, MELD score, Child score, laboratory parameters on the presence of bleeding within two months after EVL in the cirrhotic patient.

Methods We retrospectively reviewed endoscopy reports of cirrhotic patients between February 2010-February 2020. Patients with splenectomy, hematological disease, and incomplete data were excluded from the study. Statistical analyses were performed using SPSS. ROC curve analysis was used to determine the cut-off values for predicting post-EVL bleeding.

Results Out of 143 patients, the data of 43 patients were involved. While EVL was performed on 27 (62.8 %) patients for secondary prophylaxis, it was performed on 16 (37.2 %) patients for primary prophylaxis. The control group consisted of 30 (69.8 %) patients. 13 (30.2 %) patients had bleeding in 2 months after EVL. 6 (46.2 %) patients had post-banding ulcer bleeding, 6 (46.2 %) patients had variceal bleeding, 1 (7.6 %) patient had portal hypertensive gastropathy related bleeding. There was a significant difference between bleeding and control cases by means of APRI score ($p = 0.04$), platelet count ($p = 0.04$). According to ROC curve analysis best cut-off APRI score to differentiate between patients with post-EVL bleeding from control group was 1.2 (Sens: 61; Spec: 63), and the best cut-off for platelets was 74.950/mcl (Sens: 67; Spec: 62).

Conclusions Among all parameters, APRI score and platelet count were statistically significant. Both parameters may be used to predict bleeding events after EVL. Large-scale, prospective studies are needed for further conclusions.

eP282 GERD QUESTIONNAIRE SCORE IS A SIGNIFICANT PREDICTOR OF HISTOLOGICALLY PROVEN REFLUX ESOPHAGITIS

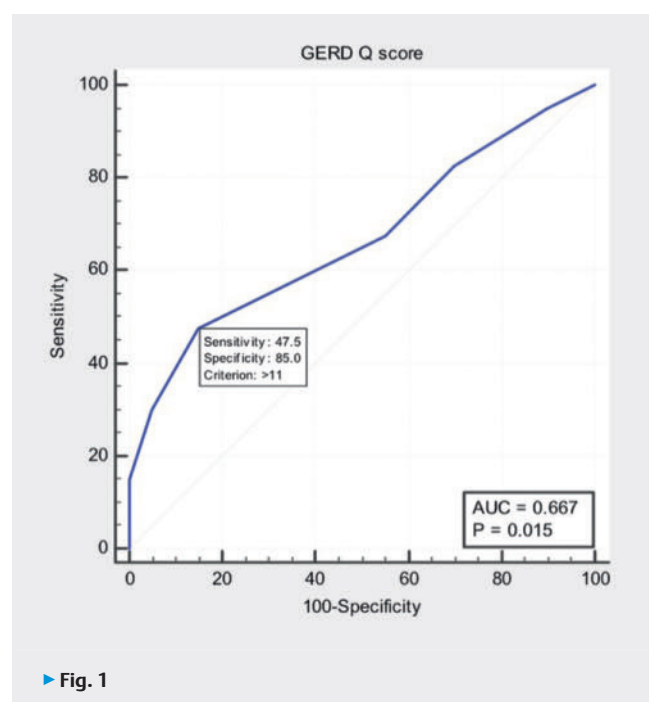
Authors Saad M.¹, Abd El moneim S.¹, Shabana H.², Ibrahim D.³

Institutes 1 Mansoura University, Specialized Medical Hospital, Internal Medicine Dep. Hepatology & Gastroenterology unit, Mansoura, Egypt; 2 Mansoura University – Faculty of Medicine, Internal Medicine Dep. Hepatology & Gastroenterology unit, Mansoura, Egypt; 3 Mansoura University – Faculty of Medicine, Pathology Dep., Mansoura, Egypt
DOI 10.1055/s-0042-1745135

Aims To study the predictive value of GERD Q score in the diagnosis of histologically proven reflux esophagitis (HPRE).

Methods GERD questionnaire(Q) is composed of 6 items, 4 positive predictors for GERD: heartburn, regurgitations, sleep disorders and use of over-the-counter products & 2 negative predictors, nausea and epigastric pain. Score of symptoms (during last week) using a scale from 0 to 3 for positive predictors and from 3 to 0 for negative predictors. It was considered positive if the score was >8 points. Los Angeles (LA) class of GERD using both white light endoscopy (WLE) & I-scan 2 was done. Biopsies was taken from the four quadrants of the lower esophagus. Histological examination of the samples was performed and combined severity score (CSS) was calculated.

Results This study involved 60 patients, 28 males (46.7 %) and 32 females (53.3 %) with median age of 40 (30.3 – 59.8) years. GERD Q was higher (11.4 ± 1.8) in cases with HPRE than cases without (10.3 ± 1.3) ($p = 0.026$). There was a statistically significant positive correlation between GERD Q score and both CSS ($r = 0.311$ & $P = 0.016$) and LA class by I-Scan 2 ($r = 0.280$ & $P = 0.030$). Male gender & GERD Q score ≥ 12 were significant independent predictors of HPRE (OR = 6.8 & 95 % CI = 1.8-26, OR = 6 & 95 % CI = 1.4-26 respectively). At cut off value of GERD Q = 11 points, the AUC for prediction of HPRE was 0.66, sensitivity was 47.5 % & specificity was 85 % (curve).



Conclusions GERD questionnaire score is a significant predictor of histologically proven reflux esophagitis. It correlates with the combined severity score & Los Angeles classification of GERD.

eP283 SCREENING FOR HEAD AND NECK TUMOURS IN PATIENTS WITH OESOPHAGEAL SQUAMOUS CELL CARCINOMA AND VICE VERSA: A NATIONWIDE SURVEY AMONG MEDICAL SPECIALISTS

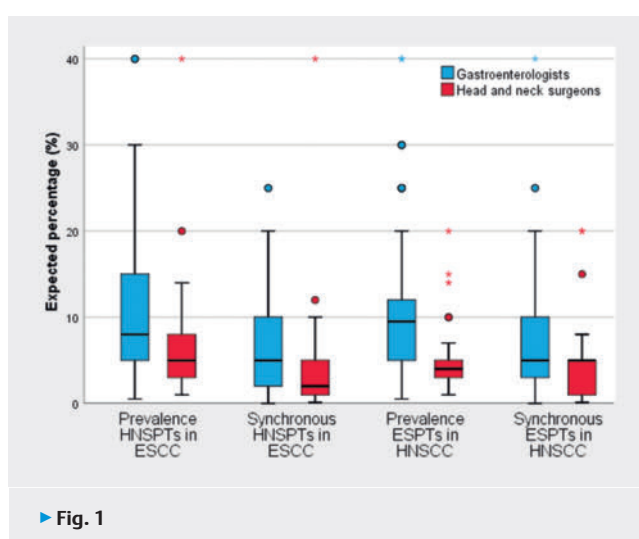
Authors van Tilburg L.¹, van den Ban S.A.¹, van de Ven S.E.¹, Sewnaik A.², Bruno M.J.¹, Spaander M.C.¹, Baatenburg de Jong R.J.², Koch A.D.¹

Institutes 1 Erasmus MC Cancer Institute, Gastroenterology and Hepatology, Rotterdam, Netherlands; 2 Erasmus MC Cancer Institute, Otorhinolaryngology and Head and Neck Surgery, Rotterdam, Netherlands
DOI 10.1055/s-0042-1745136

Aims In retrospective studies, minimally 5 % of oesophageal (ESCC) and 11 % of head and neck squamous cell carcinoma (HNSCC) patients in Western countries developed a second primary tumour (SPT). This study aimed to assess the knowledge and opinions regarding screening for head and neck SPTs (HNSPTs) in ESCC patients and oesophageal SPTs (ESPTs) in HNSCC patients in the Netherlands.

Methods A nationwide survey among gastroenterologists and head and neck (HN) surgeons was conducted between December 2020 and March 2021. The survey focused on the knowledge of medical specialists of the prevalence and opinions towards implementing screening for HNSPTs in ESCC patients and vice versa.

Results 128 gastroenterologists (16.0 %) and 31 HN surgeons (50.0 %) completed the survey. The expected median prevalence of HNSPTs in ESCC was 7.0 % (IQR 5.0-15.0) among gastroenterologists and 5.0 % (IQR 3.0-8.0) among HN surgeons. For ESPTs in HNSCC, the expected median prevalence was 9.5 % (IQR 5.0-12.0) among gastroenterologists and 4.0 % (IQR 2.0-5.0) among HN surgeons. Screening for HNSPTs and ESPTs was considered promising by 35.2 % and 39.6 %, respectively, which increased to 54.7 % of the specialists after providing SPT incidence data. 41.3 % of HN surgeons felt equally capable as gastroenterologists to perform oesophageal screening.



Conclusions This Dutch nationwide survey revealed a lack of knowledge and different perspectives regarding screening to detect SPTs in ESCC and HNSCC patients among specialists. Adequate education seems essential to increase awareness among specialists and improve detection of SPTs, independent of the need for implementation of screening for SPTs in ESCC and HNSCC patients.

eP284 CLINICAL OUTCOMES IN SEVERE OESOPHAGITIS

Authors Grant R.¹, Brindle W.¹, Rycroft E.¹, Oyewole O.¹, Morgan S.¹, Watson E.², Masterton G.¹, Kalla R.¹

Institutes 1 Royal Infirmary of Edinburgh, The Centre for Liver and Digestive Disorders, Edinburgh, United Kingdom; 2 Western General Hospital, The Edinburgh IBD Unit, Edinburgh, United Kingdom

DOI 10.1055/s-0042-1745137

Aims To determine if there are differences in clinical outcomes between those with LA grades C and grade D oesophagitis at index oesophago-gastro-duodenoscopy (OGD1).

Methods Patients in NHS Lothian with grades C or D reflux oesophagitis at OGD1 between 01/01/14 – 31/12/15 were identified. Univariate analysis identified factors significantly associated with grade.

Results 964 patients had severe oesophagitis, 61.7 % grade C, 38.3 % grade D. Median age was 64.0 years; 54.6 % were male. Patients with grade D were more likely to be a current ($p = 0.002$) or ex-smoker ($p = 0.013$), have a history of alcohol excess ($p = 0.050$), have a stricture ($p = 0.024$), present with a gastrointestinal bleed ($p = <0.001$), be inpatients ($p = <0.001$), live in a more deprived deprivation decile ($p = 0.001$), be deceased at 6 ($p = 0.001$) and 12 ($p = <0.001$) months post-OGD1 and at time of notes follow-up ($p = <0.001$). 39.7 % with grade C and 40.4 % with grade D had a follow-up OGD (OGD2) (at median of 10.1 weeks). Differences between grades were not statistically significant for Barrett's oesophagus, dysplasia or oesophageal cancer at OGD1 or OGD2; there was no significant difference regarding strictures on OGD2. (Table 1)

► Table 1 Clinical outcomes.

OUTCOME	OGD1 C [n = 595]	OGD1 D [n = 369]	OGD2 C [n = 236]	OGD2 D [n = 149]
Barrett's oesophagus with intestinal metaplasia, % (N)	6.4 (38)	6.0 (22)	4.7 (11)	10.7 (16)
Stricture, % (N)	6.7 (40)	10.8 (40)	1.7 (4)	3.4 (5)
Dysplasia, % (N)	0.3 (2)	0.8 (3)	0.4 (1)	0.7 (1)
Oesophageal cancer, % (N)	0.8 (5)	0.3 (1)	0.4 (1)	0 (0)

Conclusions Patients with grade D oesophagitis at OGD1 were not at greater risk of Barrett's oesophagus, dysplasia or oesophageal cancer. However, the higher mortality in grade D patients indicates that they may have increased frailty and co-morbidities. As current British Society of Gastroenterology guidance recommends repeat endoscopy in all with grade D, these data may have implications in the decision to perform further endoscopic procedures in this cohort.

eP285 TIMING OF ENDOSCOPY FOR UPPER GASTROINTESTINAL BLEEDING IN PATIENTS WITH CIRRHOSIS: IS URGENT ENDOSCOPY REALLY NECESSARY?

Authors Freitas M.^{1,2,3}, Capela T.^{1,2,3}, Macedo Silva V.^{1,2,3}, Xavier S.^{1,2,3}, Cúrdia Gonçalves T.^{1,2,3}, Magalhães J.^{1,2,3}, Marinho C.^{1,2,3}, Cotter J.^{1,2,3}

Institutes 1 Gastroenterology Department, Hospital da Senhora da Oliveira, Guimarães, Portugal; 2 Life and Health Sciences Research Institute (ICVS), School of Medicine, University of Minho, Braga, Portugal;

3 ICVS/3B's, PT Government Associate Laboratory, Braga/Guimarães, Portugal

DOI 10.1055/s-0042-1745138

Aims Current recommendations suggest that patients with cirrhosis presenting with acute upper gastrointestinal bleeding (UGIB) should perform endoscopy as soon as possible within the first 12 hours after admission.

Aim To evaluate whether urgent endoscopy (≤ 12 hours) improves outcomes in patients with cirrhosis complicated with UGIB and to assess it in patients with variceal UGIB versus non-variceal UGIB.

Methods Retrospective cohort study that included consecutive patients with cirrhosis admitted for UGIB between January 2011 and June 2020. Demographic, clinical, laboratory and endoscopy data were obtained. Patients were stratified regarding the timing of endoscopy in urgent (≤ 12 hours) and early groups (12-24 hours).

Results One hundred forty-nine patients were included, of whom 74.5 % were male, with mean age of 57.4 ± 12.1 years, and 65.8 % with variceal UGIB. Endoscopy was performed within 12 hours in 62.4 % of patients, with a median timing of endoscopy of 10.3 ± 6.7 hours. Performing endoscopy within 12 hours was associated with higher need of endoscopic treatment (44.3 % vs 32.9 %; $p = 0.02$). There were no significant differences in need for transfusion ($p = 0.19$), length of stay ($p = 0.84$), rebleeding ($p = 0.15$), in-hospital mortality ($p = 0.59$), 30-day mortality ($p = 0.75$) and 30-day readmission ($p = 0.92$), between performing endoscopy within 12 hours versus 12-24 hours. Regarding patients with variceal UGIB versus non-variceal UGIB, there were no statistically significant differences in UGIB outcomes in performing endoscopy within 12 hours in the two groups.

Conclusions In our cohort, in patients with cirrhosis admitted for acute UGIB, urgent endoscopy was associated with higher need of endoscopic treatment but was not associated with improved outcomes, when compared to early endoscopy.

eP286 TO STUDY THE ACIDIFICATION PATTERN IN GASTROESOPHAGEAL REFLUX DISEASE PATIENTS WITH INEFFECTIVE ESOPHAGEAL MOTILITY ON AMBULATORY TWENTY FOUR HOUR PH IMPEDANCE STUDY

Authors Singla N.¹, Singh A.P.¹, Inavolu P.¹, Kalapala R.¹

Institute 1 AIG Hospitals, Hyderabad, Medical Gastroenterology, Hyderabad, India

DOI 10.1055/s-0042-1745139

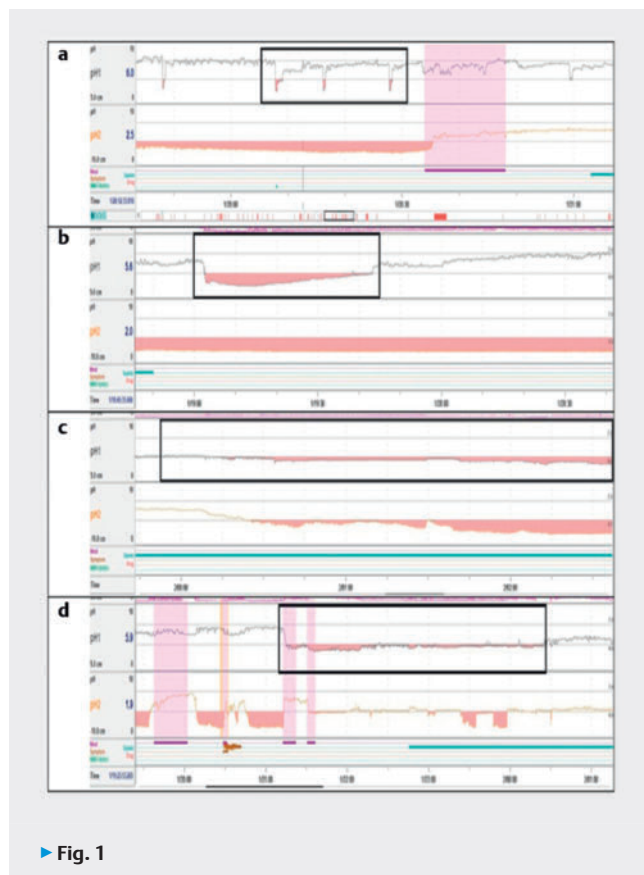
Aims Five different acidification patterns have been reported in Achalasia cardia patients, who have reflux symptoms post endoscopic or surgical myotomy. These patient have ineffective motility (IEM) with acid fermentation as predominant acidification pattern on twenty hour pH impedance study. We describe the predominant acidification pattern in GERD patients with IEM as compared to those with normal esophageal motility (NEM).

Methods Prospective observational study, age > 18 years, 40 patients with IEM and 20 patients with NEM, was done from September 2021 to November 2021. Patients with GERD symptoms underwent esophageal manometry and twenty hour pH impedance study after stopping acid lowering one week prior. Acidification patterns (see Table 1) were studied in IEM patients as compared to those with NEM, with manual review of pH tracings.

► Table 1

Acid reflux with normal esophageal clearance	Rapid drop in pH < 4, drop rate ≥ 1 pH unit/second	10 seconds to 5 minutes
Acid reflux with delayed esophageal clearance	Rapid drop in pH < 4, drop rate ≥ 1 pH unit/second	> 5 minutes
Acid fermentation	slow drop in pH to < 4, drop rate < 1 unit/minute	> 5 minutes
Stasis of ingested acidic food	pH drop to < 4 after ingestion of acidic food or drink	> 5 minutes
Unclassified	pH drop to < 4	Not specified

Results Mean age was similar, 40.7 years (60 % males) in IEM group vs 43.3 years in the NEM group (60 % males), $p = 0.498$. Mean DCI was significantly lower (272.2 ± 132.9 vs. 2020.6 ± 559.4 ; $p = < 0.001$) in IEM group. AET (38.7 ± 85.4 vs. 6.7 ± 6.5 ; $p = 0.02$) & Demeester score (72.2 ± 56.5 vs. 24.9 ± 21.6 ; $p = < 0.001$) were significantly higher in IEM group. Most common acidification pattern in IEM group was ARD (26/40; 65 %) followed by ARN (11/40; 27.5 %) and AF (3/40; 7.5 %). Predominant pattern in NEM group was ARN (13/20; 65 %), followed by ARD (5/20; 25 %) and AF (2/20; 10 %).



► Fig. 1

Conclusions Predominant acidification pattern in GERD patients with IEM was found to be ARD. Future large prospective controlled trials are required to determine the implications of different acidification patterns in patients with IEM.

eP287V RARE LONG-TERM SEQUELAE OF USE OF CARDIAC SEPTAL OCCLUDER DEVICE FOR TRACHEO-OESOPHAGEAL FISTULA CLOSURE IN COVID TIMES

Authors Kale A.¹, Dodmani M.¹, Satai M.¹, Sundaram S.¹, Singh A.¹, Aggarwal M.¹, Shukla A.¹

Institute 1 Seth G S Medical College and King Edward Memorial Hospital, Department of Gastroenterology, Mumbai, India

DOI 10.1055/s-0042-1745140

Long-term outcomes of tracheo-esophageal fistula (TEF) closure using atrial septal defect occluder (ASDO) are unknown.

30 year male with post-tubercular TEF underwent closure using ASDO-no-10 (Waist-10mm, oesophageal-22mm, tracheal-18mm) (Lifetech scientific, Schenzen). At 4 months, gastroscopy, bronchoscopy showed partially embedded device with obliterated fistula. At 6 months, he developed COVID pneumonia and subsequently complained of recurrence of aspiration. Gastroscopy showed a patent fistulous tract with no device in situ (Video). Sudden forceful dislodgement of ASDO due to high airway pressure during a bout of cough may have led to migration. Migration of ASDO after 6 months is not previously reported in literature.

eP288 ELDERLY VS. YOUNG PATIENTS : CLINICAL, ENDOSCOPIC AND PROGNOSTIC PARTICULARITIES IN CASE OF UPPER GASTROINTESTINAL HEMORRHAGE : PROSPECTIVE STUDY

Authors Touibi A.¹, Benhamdane A.¹, Addajou T.¹, Sair A.¹, Rokhsi S.¹, Mrabti S.¹, Berraida R.¹, El Koti I.¹, Rouibaa F.¹, Benkirane A.¹, Seddik H.¹

Institute 1 Militar hospital Mohamed V, gastroenterology II, Rabat, Morocco

DOI 10.1055/s-0042-1745141

Aims The aim of our study is to compare the epidemiological, clinical, endoscopic, therapeutic and prognostic characteristics of UDH in young vs. elderly subjects.

Methods This is a single-center prospective cross-sectional study about 332 patients, conducted over a one-year period between June 2020 and August 2021.

We divided our patients into 2 groups, group A corresponding to subjects aged ≥ 65 years and group B corresponding to patients < 65 years.

Results Of the 332 endoscopies performed for UDH, 38.9 % were older than 65 years. The sex ratio was 2.79. 31.8 % of patients were on antithrombotic therapy, and 38.8 % had comorbidities.

There was no statistically significant difference between the two groups regarding the origin of UDH, however there was a difference between the two groups regarding the use of antithrombotics (31.8 % vs 10.8 %, $p < 0.001$) the presence of comorbidities (39.1 % vs. 20.7 % $p < 0.001$) the presence of active bleeding (9.3 % vs 18.7 %, $p = 0.019$) and the use of endoscopic hemostasis (8.5 % vs 17.7 %, $p = 0.019$).

In multivariate analysis and adjusting for the studied parameters of age, sex, comorbidities, presence of active bleeding and use of antithrombotic drugs; only the presence of active bleeding could predict the need for endoscopic hemostasis (OR: 29.62, CI: 13.52-64.90, $p < 0.001$), while the use of antithrombotic drugs and age ≥ 65 years had no influence on this risk.

Conclusions Although older subjects had more comorbidities, more use of antithrombotics, UDH in this age group does not appear to be more severe with a lower rate of active bleeding at endoscopy implying a less frequent need for endoscopic hemostasis.

eP289 ENDOSCOPIC DRAINAGE IN PATIENTS WITH HILAR CHOLANGIOCARCINOMA BISMUTH IV

Authors Aabdi B.¹, Elmqaddem O.², Zazour A.³, Khannoussi W.³, Kharrasse G.³, Ismaili M.Z.²

Institutes 1 University Hospital Mohammed VI, hepatogastroenterology unit, Oujda, Morocco; 2 University Hospital Mohammed VI, hepatogastroenterology unit, Oujda, Morocco; 3 University Hospital Mohammed VI, Oujda, Morocco

DOI 10.1055/s-0042-1745142

Aims Evaluate the endoscopic drainage in patients with hilar cholangiocarcinoma (CCK) bismuth IV using metallic stents (MS) and plastic stents (PS) versus percutaneous approach.

Methods This is a retrospective study including all patients who had endoscopic retrograde cholangiopancreatography (ERCP) for Bismuth IV CCK between March 2017 and November 2021, parameters evaluated : technical success, efficacy of drainage, complication rate, stent patency and survival.

Results 13pts were included, the technical success was 77 % (n = 10), effective in 7 patients (53.83 %). Unilateral biliary drainage was performed in 11 patients (84.61 %) including 8 PS (72.7 %) and 3 MS (27.2 %). patients who had PS, 6 of them (46.14 %) required a stent change and 2 patients (15.38 %) required second stent. Complications such as migration and stent obstruction occurred in 5 % in case of PS and (0.3 %) in case of a MS. The median duration of stent patency was 3.8 months in patients treated with PS and 6.5 months in patients treated with MS. For unilateral and bilateral stent placement, the median PS patency time was 19 weeks and 21 weeks, respectively. For unilateral MS placement, the median patency time was 36 weeks. Percutaneous drainage was performed in 30.76 % with an estimated technical success of 75 %. Median duration of drain was 3weeks. The median survival with successful endoscopic biliary drainage was 6.5 months, 8.2 months in successful percutaneous drainage.

Conclusions The endoscopic approach in bismuth IV cholangiocarcinoma is the treatment of choice despite the technical difficulties, it improves quality of life with lower complication rates and a superior cumulative stent patency.

eP290 DEVICE RELATED PROBLEMS AND PATIENT-RELATED ADVERSE EVENTS WITH SPYGLASS CHOLANGIOSCOPE: A MANUFACTURER AND USER FACILITY DEVICE EXPERIENCE (MAUDE) DATABASE ANALYSIS

Authors Achanta C.R.¹, Singh A.¹, Imandi V.¹, Kinhal S.¹

Institute 1 KIMS ICON Hospital, Visakhapatnam, India

DOI 10.1055/s-0042-1745143

Aims The spyglass cholangioscope system has been available for over a decade and is used to diagnose and treat many pancreaticobiliary problems. Its safety and efficacy have been proven in many studies. However, limited data is available regarding the specific device-related problems and patient-related adverse events. We aimed at analyzing the device-related problems and patient-related adverse events with the spyglass cholangioscope system reported to the MAUDE database in the last decade.

Methods The reports from March 2011 till November 2021 were collected using the search terms "spyglass", "spyscope", and "spybite"

Results 1623 problems were reported in the MAUDE database in 1612 patients. The highest events were reported in the year 2018 (n = 639, 39.64 %). Device related events happened in 96.84 % (n = 1561), patient-related injury in 2.98 % (n = 48) and mortality in 0.19 % (n = 3). Device-related problems reported were material protrusion/extrusion (n = 1052; 65.26 %) and optical problem/low quality (n = 285; 17.68 %). (Figure 1) More than one device-related issue was reported in 8.25 % (n = 133) cases. The number of problems with respect to the type of device was depicted in Table 1. These device-related issues didn't

cause any patient-related injuries in the majority (n = 1554; 95.75 %). Perforation (n = 22, 1.36 %), haemorrhage (n = 17, 1.05 %), infection/inflammation (n = 12, 0.74 %), air embolism (n = 5, 0.31 %), and pancreatitis (n = 2, 0.12 %) were the complications reported.

► Table 1

TYPE OF DEVICE	n (%)	TYPE OF DEVICE	n (%)
Spyscope DS	1272 (78.91 %)	Spybite	12 (0.74 %)
Spyscope DS II	253 (15.69 %)	Spyglass Retrieval Basket	9 (0.56 %)
Spyglass Direct Visualization System	35 (2.17 %)	Spyglass Discover Digital Catheter	6 (0.37 %)
Spyglass DS Digital Controller	17 (1.05 %)	spyglass retrieval snare and miscellaneous	3 (0.19 %) and 5 (0.31 %)

Device-related problems	n (%)
Material Protrusion/Extrusion	1052 (65.26%)
Optical problem/Low quality	285 (17.68%)
Multiple issues	133 (8.25%)
Others	48 (2.98%)
Adverse Event Without Identified Device or Use Problem	34 (2.11%)
Detachment Of Device Component	26 (1.61%)
Manufacturing Defect/ Break	15 (0.93%)
Difficulty to advance scope	10 (0.62%)
Failure to power up	5 (0.31%)
Contamination	4 (0.25%)

► Fig. 1

Conclusions Spyglass cholangioscope system is highly effective and safe. Patient-related injuries were minimal and rarely cause mortality. Material protrusion/extrusion and optical problem/low quality were the predominant device-related problems. Continuous innovations and improvements are required to reduce device-related issues.

eP291V PANCREATIC PLASMACYTOMA: INCIDENTAL DIAGNOSIS DURING EUS STAGING

Authors Agudo B.¹, González-Haba M.¹, Martins A.¹, Tejerina E.², Herreros de Tejada A.¹

Institutes 1 Puerta de Hierro University Hospital, Gastroenterology, Majadahonda, Spain; 2 Puerta de Hierro University Hospital, Cytopathology, Majadahonda, Spain

DOI 10.1055/s-0042-1745144

A 75-year-old man underwent staging EUS for early esophageal neoplasia. A 20 mm heterogeneous mass in the pancreatic body was found, with non-diagnostic fine needle biopsy (FNB). MRI showed a 60 mm mass, suggestive of neuroendocrine tumour or lymphoproliferative process. Repeated EUS tissue acquisition demonstrated cells CD138 + and kappa light chain. Multiple mye-

loma was ruled out. Finally, diagnosis of primary pancreatic plasmacytoma (PPP) was made and radiotherapy was started with a good response. Only 5 cases of PPP have been reported to date. EUS-FNB is essential for diagnosis, demonstrating tissue infiltration by monoclonal plasma cells.

eP292 EVALUATION OF ENDOSCOPIC ULTRASOUND-GUIDED FINE-NEEDLE ASPIRATION AND FINE NEEDLE BIOPSY IN SOLID PANCREATIC NEOPLASM IN LOW VOLUME HOSPITAL

Authors [Aguero Garcete G.¹](#), [Masi Miranda A.²](#), [Ferreira Duarte J.¹](#), [Caballero Llano C.³](#)

Institutes 1 Centro de Ultrasonografía Endoscópica del Paraguay, Asuncion, Paraguay; 2 Hospital Nacional de Itagua, Itagua, Paraguay;

3 GENPAT, Asuncion, Paraguay

DOI 10.1055/s-0042-1745145

Aims In recent years new technology has been introduced in needles to improve tissue acquisition and thus ameliorate the diagnostic yield in pancreatic neoplasms. This improvement may be more important in less experienced endosonographer. We performed a retrospective study to determine the difference in diagnostic yield between 22 G Fine-Needle Aspiration (FNA) and 22 G Fine-Needle biopsies (with the Franseen tip needle) (FNB) in the study of solid tumours of the pancreas.

Methods From August 2014 to September 2019, 434 endoscopic ultrasounds (EUS) studies were performed by the same endosonographer. The endosonographer does less than 150 EUS per year.

56 successive patients with solids tumours of the pancreas > 10 mm were studied by FNA or FNB.

Results The diagnostic yield in the FNA group was 78.5% and 92.8% in the FNB group. Histologic diagnostic was obtained in 26 of the 28 FNB performed. In the FNA group, two diagnosis were obtained only in the cytologic evaluation. In the other arm all diagnosis were done by histology.

Conclusions There has been an improvement in the diagnostic yield in our series with the use of FNB needle. We also have seen that all the diagnosis were obtained by histology on this group. FNB allows us to obtain more tissue therefore to have a better diagnostic yield. This might be important for less experienced endosonographer and maybe also for pathologist that are less familiar with the cytology.

eP293 SINGLE-OPERATOR PERORAL CHOLANGIOSCOPY FOR THE TREATMENT OF COMPLEX BILIARY AND PANCREATIC STONES: A SYSTEMATIC REVIEW AND META-ANALYSIS OF 20 YEARS OF EVIDENCE

Authors [Al-Lehibi A.¹](#), [Al Balkhi A.¹](#), [Alsuleimani A.¹](#), [Sultan A.¹](#), [Bashmail A.¹](#), [AlBalkhi M.¹](#), [Basalama S.¹](#), [Almtawa A.¹](#), [AlEid A.¹](#), [Alqutub A.¹](#), [Alamr A.¹](#), [AlGhamdi A.¹](#), [AlGhamdi A.¹](#), [AlIbrahim B.¹](#), [Al Ahmari M.¹](#), [AlRajhi S.¹](#), [Ahmad S.¹](#), [Alotaibi N.¹](#)

Institute 1 King Fahad Medical City, Riyadh, Saudi Arabia

DOI 10.1055/s-0042-1745146

Aims The efficacy of peroral cholangioscopy (POC) in the treatment of complex biliary and pancreatic stones has been investigated in numerous studies. This review aims to pool the evidence on the performance of POC in difficult pancreatic/biliary stones, and the overall incidence of adverse events.

Methods Databases, bibliographies, and trial registries were searched from 2000-2020 for eligible studies based on predetermined criteria. The quality of the selected studies was assessed by two independent investigators with a modified Newcastle-Ottawa Scale. The outcomes of interest were rates of complete stone clearance, first-session clearance, and adverse events. The pooled estimates were calculated using random-effects models.

Results Sixty-two studies met the inclusion criteria. The pooled proportion of patients who had complete clearance of complex biliary stones was 89.3% (95%

CI: 85%–91%). Stone clearance on the first session was achieved in 71.3% of patients (95% CI: 62.1%–79.3%). The pooled incidence of adverse events was 7% (95% CI: 3.7%–8.5%).

For patients with pancreatic stones, clinical success was reported at 75.6% (95% CI: 64.1–84.3). Laser lithotripsy was reported to have higher clinical success (88.3%; 95% CI: 65.4–95.6) than electrohydraulic lithotripsy (66.4%; 95% CI: 55.3–75.2). Adverse events were reported at 14.5% (95% CI: 9.1–23.3) in the pooled analysis.

Conclusions POC is an effective adjunct tool in the management of complex pancreatic and biliary duct stones when conventional techniques fail. While RCTs are available to provide precise estimates on its role of POC in complex biliary stones, similar trials are needed to further examine its effectiveness in pancreatic stones.

eP294V A TECHNICALLY CHALLENGING EUS-FNA IN SITUS INVERSUS TOTALIS

Authors [Altonbary A.¹](#), [Hakim H.¹](#), [El-Nady M.²](#), [Abou-Elmagd A.³](#), [Elkashef W.⁴](#)

Institutes 1 Mansoura University, Department of Gastroenterology and Hepatology, Mansoura, Egypt; 2 Cairo University, Department of Gastroenterology and Hepatology, Cairo, Egypt; 3 Armed Forces college of medicine, Department of Gastroenterology and Hepatology, Cairo, Egypt;

4 Mansoura University, Department of Pathology, Mansoura, Egypt

DOI 10.1055/s-0042-1745147

A 46-years man with Situs inversus totalis (SIT) was referred to our facility for EUS-FNA of pancreatic head mass with multiple liver metastasis. Challenging EUS examination of the whole pancreas from the stomach, with anticlockwise rotation 90° & a reversed orientation, showed a hypoechoic pancreatic head mass 3.2x2.7 cm with multiple peri-pancreatic lymph nodes and multiple hepatic focal lesions. EUS-FNA was done from both pancreatic and hepatic masses by fanning technique using a 22G needle. Cytopathological examination revealed moderately differentiated adenocarcinoma with positive IHC for CK7 & CK19 consistent with metastatic tumor of pancreatic origin. Finally, patient started neoadjuvant therapy.

eP295 EFFICACY OF ENDOSCOPIC PAPILLARY BALLOON DILATION AFTER SPHINCTEROTOMY FOR DIFFICULT BILE DUCT STONE CLEARANCE: A CASE-CONTROLLED STUDY

Authors [Amalou K.¹](#), [Belghanem F.¹](#), [Medkour M.T.¹](#), [Rekab R.¹](#), [Benboudiaf N.¹](#), [Benachour M.¹](#), [Kordjani S.¹](#), [Kezoula D.¹](#)

Institute 1 Algiers, Gastroenterology, Algiers, Algeria

DOI 10.1055/s-0042-1745148

Aims To evaluate the efficacy and safety of endoscopic sphincterotomy (EST) + endoscopic papillary large balloon dilation (EPLBD-s) vs isolated EST (iEST) for difficult bile duct stone clearance.

Methods In this prospective case-controlled single center study, all patients with naïve papilla undergoing ERCP to treat a single or multiple large stone (≥ 15 mm). Patients in Group A underwent EPLBD-s. Patients in Group B (control group) underwent iEST. Outcomes were compared regarding efficacy (complete clearance, number of sessions, biliary stenting) and safety (frequency, type and grade of complications).

Results There were included 127 patients, 58 (45.6%) in Group A and 69 (54.3%) in Group B. The mean diameter of the stones was similar in the two groups (17.8 ± 3.4 and 16.9 ± 4.3). Patients had multiple BDS, EPLBD-s = 39/58, 67.2% vs. iEST = 34/69, 49.2%, $p = 0.02$. Patients in Group A achieved a higher clearance rate (51/58, 87.9%) than iEST (43/69, 62.3%), $p < 0.001$; and was attained within the first therapeutic session in EPLBD-s = 74.1% vs. iEST = 43.4%, $p < 0.001$. Patients in Group A underwent fewer therapeutic sessions (1.3 ± 0.2 vs 2.1 ± 1.2 , $P < 0.001$), and fewer required mechanical (12.9% vs 42.4%,

$p = 0.003$) or biliary stenting (21.6% vs 72.3%, $p < 0.001$). There was no difference in complication rate, EPLBD-s = 11.2% vs. iEST = 12.3%, $p = 0.82$.

Conclusions EST + EPLBD is a safe and superior over only stent for treatment of difficult BDS, leading to high rates of complete stone clearance and reducing the need for lithotripsy and biliary stenting.

eP297 CHANGES OF ORAL AND DUODENAL MICROBIOTA IN PATIENTS WITH PANCREATIC CANCER ARE POSSIBLE DIAGNOSTIC AND PROGNOSTIC BIOMARKERS

Authors Archibugi L.¹, Ponz De Leon Pisani R.¹, Sattin E.², Bertoldi L.², Rossi G.¹, Mariani A.¹, Valle G.², Arcidiacono P.G.¹, Capurso G.¹

Institutes 1 IRCCS San Raffaele Institute, Milan, Italy; 2 University of Padua, Padua, Italy

DOI 10.1055/s-0042-1745150

Aims Microbiome is associated with pancreatic cancer (PDAC) risk/survival. It was hypothesized that bacteria migrate from the mouth through duodenum into the pancreas with a protumorigenic effect. Changes of duodenal microbiome of head PDAC were reported, but may be due to impaired exocrine function and bile flow. Also, such studies were underpowered and oral/duodenal microbiome were not compared. We aimed to assess oral/duodenal microbiome in a PDAC cohort undergoing EUS, with lesions not obstructing (PDAC-NO) biliary pancreatic ducts and matched healthy controls (HC), and investigate signatures predicting survival.

Methods A sample-size calculation was performed enrolling 10 patients. PDAC and sex/age-matched HC were enrolled during EUS, performing saliva collection and duodenal brushing. Bacterial 16S-RNA gene was extracted, amplified and underwent NGS. Results were analyzed through Qiime2 with comparison of alpha and beta-diversity, and differential abundances. Survival analyses were performed.

Results 96 samples were collected from 24 PDAC-NO/24 HC. Technical success was 97.9%. There was a significantly reduced Alpha-diversity (OTUs and Faith-PD) in PDAC-NO brushing compared to HC ($p = 0.04$), as also to PDAC-NO saliva ($p = 0.01$). There was a significant Beta-diversity difference between brushing and saliva of PDAC-NO (q -value = 0.025). The most abundant bacterium in PDAC-NO duodenum was *P. Aggregatibacter*. A lower alpha-diversity as also the presence of specific species were associated to a reduced/increased survival.

Conclusions The use of brushing for duodenal microbiome evaluation is feasible and fast. Even in absence of ducts obstruction, PDAC patients have lower alpha-diversity in the duodenum compared to HC, as also in PDAC, the duodenum has lower alpha-diversity than in the saliva. A specific microbiome signature and a lower alpha-diversity predict survival in PDAC.

eP298 RNA-SEQUENCING OF PANCREATIC CANCER FROM EUS-ACQUIRED TISSUE IS USEFUL TO DEFINE MOLECULAR SUBTYPES AND PROGNOSIS

Authors Archibugi L.¹, Ruta V.², Panzeri V.², Zaccari P.¹, Tacelli M.¹, Petrone M.C.¹, Falconi M.¹, Reni M.¹, Sette C.², Arcidiacono P.G.¹, Capurso G.¹

Institutes 1 IRCCS San Raffaele Institute, Milan, Italy; 2 Catholic University, Rome, Italy

DOI 10.1055/s-0042-1745151

Aims Pancreatic ductal adenocarcinoma (PDAC) is the 2nd leading cause of cancer-related mortality, with transcriptome subtypes related to different prognosis and chemotherapy response.

Nevertheless, RNA extraction from pancreatic tissue is cumbersome and has been performed mainly on surgical samples, representative of <20% of cases. On the contrary, the majority of PDAC patients undergo Endoscopic Ultra-Sound (EUS)-guided tissue acquisition (EUS-TA), and we recently published a method to achieve a good quality and quantity RNA, but RNA sequencing on such samples has been rarely performed.

Our aim was to evaluate the ability to perform RNA sequencing and molecular subtype identification on EUS-TA of PDAC samples and correlate this to prognosis and chemotherapy response.

Methods Fifteen patients with non-metastatic PDAC underwent EUS-TA with standard FNA and resulted having adequate quantity of RNA (70 ng) and RNA Integrity Index (RIN) ≥ 3 for RNA sequencing with Illumina Nova-Seq. Unsupervised clustering according to selected markers known to be associated to molecular subtypes and evaluated through in silico analysis of TCGA, as also the PURIST score were applied and correlated to overall survival (OS) and chemotherapy used. Further bioinformatics analysis and correlation with clinical meta-data and overall survival are ongoing.

Results Mean RIN of the 15 samples was 4.7 (range 3-6), OS 11 months. RNA sequencing was successful in 100% patients. Unsupervised clustering employing relevant genes was applied and correlated to OS; PURIST score identified 1 patient as basal-like, who had an OS of 3 months.

Conclusions RNA samples obtainable from EUS-TA PDAC cases can successfully undergo RNA sequencing to identify molecular subtypes that seem to correlate with prognosis and chemotherapy response.

eP299 LONG-TERM OUTCOMES OF ENDOSCOPIC PAPILLARY BALLOON DILATION FOR 8-12MM BILE DUCT STONES: A PROSPECTIVE STUDY

Authors Arna D.¹, Velegraki M.¹, Nicolaou P.¹, Psistakis A.¹, Mpitouli A.¹, Fragaki M.¹, Papastergiou V.², Vardas E.¹, Paspatis G.¹

Institutes 1 Venizeleion Hospital, Department of Gastroenterology, Heraklion, Greece; 2 General Hospital of Athens "Evangelismos-Ophtalmiatreion Athinon-Polykliniki", Department of Gastroenterology, Athens, Greece

DOI 10.1055/s-0042-1745152

Aims Stone recurrence is a significant long-term complication after endoscopic papillary balloon dilation (EPBD) with endoscopic sphincterotomy (EST) for large or difficult common bile duct (CBD) stones. However, data on long-term outcomes after EPBD + EST for CBD stones up to 8-12mm remain limited. We prospectively evaluated long-term outcomes of EPBD + EST for CBD stones up to 8-12mm.

Methods Consecutive patients with CBD stones up to 8-12mm successfully treated by EPBD + EST from September 2018 to August 2020 were prospectively followed for at least 12 months. CBD stone recurrence was defined as recurrent stones confirmed by ERCP during the follow-up period. The maximum diameter of the balloon used was 15mm.

Results Overall, 72 patients (mean age: 67 years, 52.8% males) were included, of whom 22 (30.5%) had multiple (≥ 3) CBD stones, 23 (31.9%) had a history of cholecystectomy, 13 (18.1%) had a periampullary diverticulum and 22 (30.5%) had a previous EST. The mean CBD diameter was 11.6 ± 1 mm, whereas a tapered duct was noted in 7 (9.7%). Post-procedural bleeding occurred in one case, treated successfully with a fully covered metal stent. Mild cholangitis occurred in two cases. No cases with perforation or PEP were observed. During a mean follow-up of 22.4 ± 6.2 months (range 13-36), CBD stones recurred in 2/72 (2.7%).

Conclusions EPBD + EST in patients with CBD stones up to 8-12mm appears to be associated with a very low (<3%) rate of long-term stone recurrence. The efficacy of EPBD for 8-12mm stones warrants further exploration in randomized trials.

eP300 A MISDIAGNOSED ENTITY OF SOLID PSEUDO PAPILLARY TUMOR OF THE PANCREAS: A SMALL SERIES OF 4 CASES

Authors Belkhatay C.¹, Amri F.¹, El Mqaddem O.¹, Tammouch Z.¹, Oustani M.¹, Nasiri M.¹, Kaddouri M.A.¹, Zazour A.¹, Kharrasse G.¹, Ismaili Z.¹, Khannoussi W.¹

Institute 1 Mohammed 6 University Hospital Oujda, Hepato Gastro Enterology Unit, Oujda, Morocco
DOI 10.1055/s-0042-1745153

Aims The aim of this study is to recognize these rare tumors and their low malignancy potential because complete resection is curative in most cases and provides favorable outcome.

Methods A retrospective study of patients operated for solid pseudo papillary tumor of the pancreas (SPTP) from January 2014 to December 2021, at Mohammed 6 University Hospital Oujda. Data collection included clinical features, biological tests, radiological/anatomopathological results and surgical modalities.

Results 4 cases of SPTP have been identified between 2014 and 2021. All patients were female with a median age of 29 (19-33). The most common symptom was upper abdominal pain in 75 % of cases (n = 3). There was one incidental finding using ultrasound in a 19-year-old pregnant woman during its medical follow-up. Physical examination was normal in all cases. All tumors were located in the head of the pancreas. Tumor size varied from 5 to 11 cm with an average size of 7,4 cm. There were no signs of metastasis on imaging. Tumor markers were within normal range. Diagnosis was made using endoscopic-ultrasound-fine-needle-aspiration in 75 % of cases (n = 3). Surgical interventions were cephalic duodeno-pancreatectomy in 3 cases and enucleation in one case. During follow-up, patients remain symptom-free with no signs of local recurrence.

Conclusions Although SPTP may be late diagnosed, the overall prognosis is excellent even with local or metastatic recurrence. Surgical resection is the preferred method and can sometimes be associated with chemotherapy.

eP301 THE YIELD OF BILIARY BRUSH CYTOLOGY IN BILIARY STRICTURES

Authors Belkhatay C.¹, Amri F.¹, Kaddouri M.A.¹, El Mqaddem O.¹, Tammouch Z.¹, Oustani M.¹, Zazour A.¹, Kharrasse G.¹, Ismaili Z.¹, Khannoussi W.¹

Institute 1 Mohammed 6 University Hospital Oujda, Hepato Gastro Enterology Unit, Oujda, Morocco
DOI 10.1055/s-0042-1745154

Aims The aim of this study is to assess the yield of biliary brush cytology into determining malignant causes of biliary stricture.

Methods We performed a prospective study from January 2016 to December 2021 including patients with biliary stricture who had biliary brush sampling. Exclusion criteria were patients with biliary stricture for whom brush sampling was not possible. Final diagnosis was confirmed by surgery, percutaneous biopsy or EUS-FNA, radiological invasion or metastasis to identify false positive or false negative results. Analysis was made using SPSS.

Results 1,100 patients underwent ERCP during this 5-year period. Out of these, 82 patients used biliary brushing for diagnosis. The mean age of our patients was 65 years (26–95 years, 56.1 % females). The main symptom was obstructive jaundice in 91.7 % of patients (n = 77). Of the 82 patients, 40 (47.6 %) had distal common bile duct stricture, 8 (9.5 %) had middle stricture and 19 (22.6 %) had a proximal /complex hilar stricture. 75 % of strictures were due to malignant causes. Cholangiocarcinoma, pancreatic cancer and gallbladder carcinoma were the most common causes of malignant biliary stricture at 27,4 %, 26,2 % and 16,7 %. The sensitivity, specificity, positive predictive value and negative predictive value were 33.3, 100, 100 and 25.9 %, respectively. For cholangiocarcinomas, the sensitivity was the highest at 56,5 %. For pancreatic cancer and gallbladder carcinoma, the sensitivity was very low at 14,2 % and 15,3 %.

Conclusions Despite its low sensitivity, brush cytology is considered to be a safe way to get tissue samples from patients suspected with biliary neoplasm.

eP302 ENDOSCOPIC TREATMENT OF COMPLICATIONS OF HYDATID CYSTS OF LIVER RUPTURED IN THE BILE DUCTS

Authors Benhamdane A.¹, Sair A.¹, Touibi A.¹, Addajou T.¹, Rokhsi S.¹, Mrabti S.¹, Berraida R.¹, El Koti I.¹, Rouibaa F.¹, Benkirane A.¹, Seddik H.¹
Institute 1 Military Hospital Mohamed V, Gastroenterology II, Rabat, Morocco

DOI 10.1055/s-0042-1745155

Aims The objective of our study is to evaluate the contribution of endoscopic ERCP in the diagnostic and particularly therapeutic management of ruptured liver hydatid cysts in the bile ducts.

Methods Retrospective descriptive and analytical study, from January 2002 to August 2021, which included 50 patients with a hydatid cyst fistulized in the bile ducts. ERCP and endoscopic sphincterotomy were performed in all patients. Overall success was defined by definitive vacuity of the main bile duct.

Results Among the ERCPs performed in our department during the study period, 4.6 % (n = 50) were for a hepatic hydatid cyst communicating with the bile ducts. The mean age was 46.1 ± 14.8 years with a male predominance of 66 %. ERCP was performed in 52.2 % of cases preoperatively, and in 47.8 % postoperatively.

ERCP was indicated for acute angiocholitis in 44.9 % and persistent external biliary fistula in 34 %.

The median bile duct diameter was 10[7-14]mm and the median cyst diameter was 35[27-47].

Sphincterotomy was performed in 96 % of patients allowing extraction of hydatid material by balloon or Dormia in 87.8 %. Nevertheless 24 % required naso-biliary drainage and 8 % benefited from biliary prosthesis placement.

The overall success rate was 96 % (n = 46). The immediate complication rate was 8 % (n = 4), 1 patient had hemobilia and 3 patients had edge bleeding.

The evolution was marked by the disappearance of jaundice after 5 to 10 days.

Conclusions Our study confirms that endoscopic treatment of ruptured hydatid cyst in the bile ducts is an effective therapeutic alternative, with a low rate of immediate complications and a good long-term evolution.

eP303 PREDICTORS OF FAILURE OF ENDOSCOPIC RETROGRADE CHOLANGIOGRAPHY IN CLEARING BILE DUCT STONE ON THE INITIAL PROCEDURE

Authors Benhamdane A.¹, Mrabti S.¹, Touibi A.¹, Addajou T.¹, Sair A.¹, Rokhsi S.¹, Berraida R.¹, El Koti I.¹, Rouibaa F.¹, Benkirane A.¹, Seddik H.¹
Institute 1 Military Hospital Mohamed V, Gastroenterology II, Rabat, Morocco
DOI 10.1055/s-0042-1745156

Aims Evaluate the predictive factors of failure rate of clearing the biliary system from stones at the initial ERCP.

Methods This is a retrospective descriptive and analytical study from September 2002 to September 2021.

All patients with bile duct stones, who underwent ERCP with endoscopic sphincterotomy and stone extraction by standard techniques (extraction balloon or Dormia basket) were included in this study.

Results A total of 1080 ERCPs were performed to extract biliary duct stones. The mean age was 58.9 ± 14.4 years and 59.5 % were females.

The mean diameter of the Bile duct was 13.4 ± 4.31 mm. The presence of a biliary stricture in 6.3 %.

The primary vacuity rate was 75.1 %. Supplementary techniques were used in 22.7 % of cases.

On univariate analysis, the predictive factors for failure after use of standard techniques were: age (OR: 0.9; CI95 %: -0.03 - -0.01; p < 0.001); gender (OR: 0.7; CI95 %: -0.5 - -0.02; p = 0.036); previous cholecystectomy (OR: 1.3; CI95 %: 0.02 - 0.6; p = 0.035); presence of angiocholitis (OR: 0.4; CI95 %: -1.1 - -0.4; p < 0.001); dilatation of the CBD > 15mm (OR: 0.8; CI95 %: -0.2 - 0.1; p < 0.001), biliary stric-

ture (OR:0.3;CI95%:-1.7--0.7;p<0.001) and the presence of impacted and/or large stone (OR:0.1;CI95%:-2--1;p<0.001).

On multivariate analysis, only the presence of angiocholitis (OR:1.9;CI95%:0.2-1;p = 0.001), impacted and/or large stone (OR:2.5;CI95%:0.5-1.3;p<0.001), dilatation of the CBD > 15mm (OR:0.88;CI95%:-0.17--0.07;p<0.001), and biliary stricture (OR:2.9;CI95%:0.4-1.7;p = 0.002) were significantly associated with failure of the primary CBD vacuity rate.

The overall vacuity rate after using the supplementary techniques was 92.4%.

Conclusions In our study, predictive factors for failure of the primary CBD vacuity rate were the presence of angiocholitis, impacted and/or large stone, dilatation of the CBD (> 15mm) and biliary stricture.

eP304 ADVANCED DIAGNOSTIC OF BILE DUCT STRICTURES OF UNCERTAIN ETIOLOGY WITH COMBINED EUS-ERCP

Authors Bényei E.¹, Sadik R.¹, Hedenström P.¹, Lindkvist B.¹, Molinaro A.¹

Institute 1 Sahlgrenska University Hospital, Gothenburg, Sweden

DOI 10.1055/s-0042-1745157

Aims Often, ERCP with brush cytology (ERCP-BC) is imperfect for the diagnosis of biliary strictures of unknown etiology. Complementary endoscopic ultrasound (EUS) with fine-needle aspiration (FNA) might be beneficial in such scenarios. Our aim was to investigate the diagnostic accuracy of ERCP-BC and EUS-FNA in unclear biliary strictures.

Methods In a prospective, tertiary-center setting, patients were examined with both ERCP and EUS during endoscopic work-up (EUS + ERCP). The results were compared with surgery, clinical follow-up, and imaging. The main outcome measurements were: Diagnostic sensitivity, specificity, accuracy, and adverse event rate of ERCP-BC, EUS-FNA, and the combination of both sampling methods (ERCP-BC + EUS-FNA).

Results During 2012–2020, 73 patients (m/f: 50/23; median age: 54) were examined with EUS + ERCP (ERCP-BC + EUS-FNA n = 22, ERCP-BC only n = 41, EUS-FNA only n = 5, ERCP + EUS without sampling n = 5). Final diagnoses were benign in 43 cases (PSC n = 17, other benign diagnosis n = 26) and malignant in 30 cases (CCA n = 17, pancreatic cancer n = 11, other malignancy n = 2).

The adverse event rate was in ERCP-BC only (n = 41) 2/41 (5%: pancreatitis n = 2), while in ERCP-BC + EUS-FNA (n = 22) was 1/22 (5%: cholangitis n = 1), p = ns.

In ERCP-BC only (n = 41), the sensitivity, specificity and accuracy of ERCP-BC was 53 %, 92 % and 76 % respectively. In combinatory procedures (n = 22), the diagnostic sensitivity, specificity and accuracy of ERCP-BC + EUS-FNA and ERCP-BC was (86 vs 44 %) p = 0.25, (86 vs 92 %) p = 1.0, and (86 vs 73 %) p = 0.25, respectively.

Conclusions In the diagnosis of unclear biliary strictures of unknown etiology the combination of EUS-FNA and ERCP-BC was patient-safe and demonstrated high sensitivity, numerically superior to ERCP with brush cytology only.

eP305 THE ROLE OF ENDOSCOPIC ULTRASOUND-GUIDED FINE-NEEDLE ASPIRATION (EUS-FNA) IN METASTATIC TUMORS IN THE PANCREAS

Authors Berretti D.¹, Cassarano S.¹, Marino M.¹, De Pellegrin A.², Pevero S.¹,

Carbone M.¹, Macor D.¹, Solito S.¹, Panos Zamora J.¹, Zucchi E.¹, Zilli M.¹

Institutes 1 ASUFC Santa Maria della Misericordia, SOC Gastroenterologia,

Udine, Italy; 2 ASUFC Santa Maria della Misericordia, SOC Anatomia

Patologica, Udine, Italy

DOI 10.1055/s-0042-1745158

Aims Metastases to the pancreas (MP) are rare, frequently presenting with no specific clinical signs or symptoms and discovered incidentally, therefore diffi-

cult to characterize and differentiate from a primitive pancreatic tumor. EUS-FNA is well recognized as a useful diagnostic tool in this setting. However, data regarding the diagnostic significance of EUS-FNA in patients with MP has not been well established and few studies have explored this aspect. Our aim is to investigate first the role of EUS-FNA and secondly the impact of some EUS findings in supporting the suspected diagnosis of MP.

Methods The study population consisted of 640 consecutive patients referred at our tertiary center with instrumental finding of pancreatic masses requiring EUS-FNA.

Results The overall prevalence of MP was 3.75 %. Carcinoma was the prevalent histotype (87.5 %), followed by melanoma (8.3 %) and condrosarcoma (4.2 %). The most common primary tumor sites were the kidney (41.7 %) and the colon-rectum (20.9 %), followed by the lung (8.3 %), the skin (8.3 %) and the liver (8.3 %). MP most often showed hypoechoic ecogenicity (95.8 %), without septa/anechoic areas (70.8 %), and appeared avascular (58.3 %). The morphology was mainly circular (95.8 %) with well-defined margins (75 %). The infiltration of the vascular axis, the dilation of the main pancreatic duct or the involvement of common bile duct were rarely associated with MP (25 %; 33.4 % and 12.5 %, respectively).

Conclusions EUS-FNA has been confirmed a useful diagnostic tool for MP. Although larger multicenter studies are needed to confirm our data, our findings likely suggest the potential predictive significance of EUS features for the metastatic origin, too

eP306 RISK OF FAILURE AND COMPLICATIONS OF ENDOSCOPIC RETROGRADE CHOLANGIOPANCREATOGRAPHY; COMPARISON OF ELDERLY AND YOUNG PAKISTANI PATIENTS

Authors Bhatti T.¹, Saleem A.², Umar M.³, Firoz T.⁴, Gul Z.⁴

Institutes 1 PIMS,SZABMU, Islamabad, Pakistan; 2 PIMS, Islamabad,

Pakistan; 3 RMU, Rawalpindi, Pakistan; 4 SZABMU, Islamabad, Pakistan

DOI 10.1055/s-0042-1745159

Aims Endoscopic Retrograde Cholangiopancreatography (ERCP) is an effective diagnostic and therapeutic procedure, widely performed in patients, irrespective of age. The objective of the study was to compare the risk of failure and procedural complications in young and elderly patients.

Methods This cohort study was conducted at Holy Family Hospital, where all 362 patients who underwent the therapeutic or diagnostic ERCP performed, in the year 2014 were included and categorized as 276 young (aged 20-59 years) and 86 elderly (60 years and above) patients. The procedural and post procedural records of both study groups were followed up prospectively to compare the risk of failure of procedure and the complications during and after procedure.

Results Successful therapeutic intended procedures were observed in 95.08 % of elderly and 97.32 % of young patients. (RR of failure 0.64, CI 0.19-2.85, p value 0.47). Similarly Successful diagnostic intended procedures were performed in 88 % of elderly and 91.1 % of young patients. (RR of failure 1.35, CI 0.37-4.84, p value 0.64). At least one or more Procedural and post procedural complications were observed in 9.3 % and 8.3 % of elderly and young patients respectively (p value 0.77), where risk of complications was also observed to be the same with relative risk of 1.11 (CI 0.51-2.40)

Conclusions The success rates, risk of failure and complications of the procedure in elderly was same as that of young, providing evidence that it is an equally safe procedure for elderly too.

eP307V CANNULATION BY DIRECT VISION OF THE BILE DUCT WITH A CHOLANGIOSCOPE IN A PATIENT WHO RECEIVED A LIVER TRANSPLANT WITH ANASTOMOTIC STENOSIS AND BILE LEAKAGE

Authors Rey S. Blanco¹, El Hajra Martínez I.², González-Haba Ruiz M.²

Institutes 1 Hospital Universitario Puerta de Hierro Majadahonda, Gastroenterology, Majadahonda, Spain; 2 Hospital Universitario Puerta de Hierro Majadahonda, Majadahonda, Spain

DOI 10.1055/s-0042-1745160

We present the case of a 57-year-old man who received a liver transplantation. ERCP with sphincterotomy was performed 5 months later, observing a late short stenosis immediately distal to the cystic duct insertion in the common bile duct and contrast extravasation at this level after performing pressure cholangiography. Due to the impossibility of progression of the 0.035" and 0.025" guidewires, a cholangioscope was introduced to cannulate by direct vision. After several attempts the guidewire of 0.025" is progressed, facilitating the placement of a covered metal biliary stent of 8mm x 8cm. The patient could be discharged 48 hours later.

eP309 ENDOSCOPIC ULTRASOUND (EUS) DEPENDENT DECISION TO PERFORM ENDOSCOPIC RETROGRADE CHOLANGIOPANCREATOGRAPHY (ERCP) IN EARLY BILIARY PANCREATITIS WITHOUT CHOLESTASIS ON CONVENTIONAL IMAGING – FINAL RESULTS

Authors Bota S.¹, Razpotnik M.¹, Essler G.¹, Urak C.¹, Weber-Eibel J.¹, Peck-Radosavljevic M.¹

Institute 1 Klinikum Klagenfurt am Wörthersee, Department of Internal Medicine and Gastroenterology (IMuG), Hepatology, Endocrinology, Rheumatology and Nephrology and Emergency Medicine (ZAE) with Centralized Endoscopy Service, Klagenfurt, Austria

DOI 10.1055/s-0042-1745162

Aims To assess the outcome of acute biliary pancreatitis (ABP) using EUS for deciding to perform an ERCP.

Methods Our prospective study included ABP patients without cholangitis or cholestasis on imaging admitted in our Department between 01/2018-10/2021.

Biliary etiology of pancreatitis was defined as the presence of gallstones/sludge on imaging or history of cholecystectomy with elevated liver enzymes (ALT, AST and/or alkaline phosphatase > 2xULN) without a history of recent excessive alcohol consumption.

The patients with ABP were first evaluated by EUS, and in the case of choledocholithiasis, an ERCP was subsequently performed

Results Our study included 95 ABP patients with a mean age of 63.9 ± 17.9 years (50.6% female). Obesity was present in 33.6% of cases.

According to revised the Atlanta criteria, 63.2% presented with mild, 33.7% with moderate to severe, and 3.1% with severe ABP.

By EUS, choledocholithiasis was diagnosed in 42/95 (44.2%) of cases. ERCP could be subsequently successfully performed in 38/42 (90.4%) of patients.

We did not observe 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 out choledocholithiasis in EUS (and no ERCP) compared to those with positive EUS and consecutive ERCP with successfully removed biliary stones (Table 1).

Two of four patients (50%) with choledocholithiasis diagnosed by EUS and unsuccessful ERCP developed severe pancreatitis with persistent organ failure and intensive care admission

► Table 1

	Positive EUS and successfully ERCP (n = 38)	Negative EUS, no ERCP (n = 53)	p
Severity (revised Atlanta criteria)			
-mild	65.8 %	66.1 %	0.84
-moderately severe	34.2 %	32.1 %	0.98
-severe	0 %	1.8 %	0.83
Organ failure	0 %	1.8 %	0.83
ICU admission	0 %	0 %	-
Pancreatic necrosis	10.5 %	7.5 %	0.90
Cholangitis	2.6 %	0 %	0.87
Readmission (biliary complications)	5.2 %	5.6 %	0.69
Hospital stay (days)	7 (2-23)	6 (2-43)	0.09

Conclusions EUS is a very good method for diagnosing choledocholithiasis in ABP patients without obvious cholestasis on imaging and helps to decide whether ERCP is needed.

eP312 NEEDLE-KNIFE SPHINCTEROTOMY AS A PRECUT PROCEDURE IN PATIENTS WITH NON-DILATED BILIARY TRACT: TECHNICAL SUCCESS RATE AND COMPLICATION RATE

Authors Busto V.¹, Arrubla A.¹, Rodríguez I.¹, Hervás N.¹, Bravo S.¹, Ganuza M.¹, Jusué V.¹, Carrascosa J.¹, Gómez M.¹, González de la Higuera B.¹, Vila J.J.¹

Institute 1 University Hospital of Navarre, Gastroenterology, Pamplona, Spain
DOI 10.1055/s-0042-1745165

Aims Needle-knife sphincterotomy as a precut procedure (PS) in patients with non-dilated bile duct carries an increased risk of complications. Working hypothesis: A targeted PS with identification of the papillary submucosal common bile duct does not imply a greater risk of complications.

Methods Retrospective analysis of prospectively collected data. We included patients that underwent PS between 2014 and 2021; all the PS were performed by the same endoscopist. The PS technique consisted of: superficial mucosal incision in cranial direction, submucosal dissection, identification of the submucosal common bile duct and deepening the cut at this level.

Collected data included: demographic data, technical success rate, complication rate, cannulation time, ERCP duration, and diameter of the bile duct. We defined cannulation time as the time elapsing from the beginning of the cannulation attempts until bile duct access was achieved. We defined bile duct dilation as a bile duct caliber ≥ 7 mm. Patients were divided into two groups: those with a non-dilated bile duct (Group I) and those with a dilated bile duct (Group II). The study was approved by the institutional review board.

Results We included 98 patients with a mean age of 74.51 ± 14 years (range: 26-95); 56% were male. Group I comprised 64 patients and Group II 34 patients. The global technical success of the PS was 84%.

Conclusions Performing PS by identifying the submucosal common bile duct does not imply a greater risk of complications in patients with a non-dilated bile duct.

eP313V MULTIPLE GATEWAY APPROACH IN EUS-GUIDED DRAINAGE OF INFECTED WALLED-OFF PANCREATIC NECROSIS

Authors Canha M.I.¹, Prata R.¹, Saraiva R.¹, Gamelas V.¹, Simões G.¹, Ramos G.¹

Institute 1 Centro Hospitalar Universitário de Lisboa Central,

Gastroenterology, Lisbon, Portugal

DOI 10.1055/s-0042-1745166

55-year-old male with infected necrotizing alcoholic acute pancreatitis (14x7cm retroperitoneal abscess), managed with antibiotics, lumen-apposing metal stent (LAMS) and necrosectomy. The LAMS was replaced by a plastic stent due to proximity to the splenic artery.

Because of ongoing signs of infection, he underwent an EUS in which a 2nd gateway was created with LAMS. The cavity was irrigated with H₂O₂(1:20) and submitted to necrosectomy. Two more double-pigtail stents (7Fr x 5cm) and a nasocystic probe were placed through the 1st gateway.

Two weeks later, the CT showed reduction in the collection size and later the LAMS was removed. Patient is currently asymptomatic.

eP314 SINGLE-OPERATOR VIDEO PANCREATOSCOPY (SOVP) FOR THE MANAGEMENT OF SYMPTOMATIC PANCREATIC DUCT STONES IN SELECTED CHRONIC PANCREATITIS PATIENTS. A PROSPECTIVE MULTICENTRE COHORT TRIAL

Authors Schmitz L.¹, Cappello A.², Albers D.³, Rousseau M.⁴, Schirra J.⁵, Goni E.⁵, Mayerle J.⁵, Casper M.⁶, Weismüller T.⁷, Dormann A.⁸, Hartmann D.⁹, Hollenbach M.¹⁰, Hampe J.¹¹, Kandulski A.¹², Hoffman A.¹³, Denzer U.¹⁴, Dechene A.¹⁵, Arlt A.¹⁶, Schlag C.¹⁷, Dollhopf M.¹⁸, Schumacher B.³, van Geenen E.¹⁹, Siersema P.¹⁹, Neuhaus H.¹, Ellrichmann M.²⁰, Beyna T.¹, Gerges C.¹

Institutes 1 Evangelisches Krankenhaus, Düsseldorf, Germany; 2 AUSL Bologna Maggiore Hospital, Bologna, Italy; 3 Elisabeth Krankenhaus, Essen, Germany; 4 Boston Scientific Corporation, Marlborough Massachusetts, United States; 5 Ludwig-Maximilians-Universität, München, Germany; 6 Universitätsklinikum des Saarlandes, Homburg, Germany; 7 Humboldt Klinikum, Berlin, Germany; 8 Kliniken Köln Mehrheim, Koeln, Germany; 9 Marienhausklinikum Mainz, Mainz, Germany; 10 Universitaetsklinikum Leipzig, Leipzig, Germany; 11 Universitaetsklinikum Dresden, Dresden, Germany; 12 Universitaetsklinikum Regensburg, Regensburg, Germany; 13 Klinikum Aschaffenburg-Alzenau, Aschaffenburg, Germany; 14 Universitätsklinikum Marburg, Marburg, Germany; 15 Klinikum Nürnberg, Nürnberg, Germany; 16 Uniklinik Oldenburg, Oldenburg, Germany; 17 University Hospital Zurich, Zurich, Switzerland; 18 München Klinik, München, Germany; 19 Radboud University Nijmegen, Nijmegen, Netherlands; 20 Universitaetsklinikum Kiel, Kiel, Germany

DOI 10.1055/s-0042-1745167

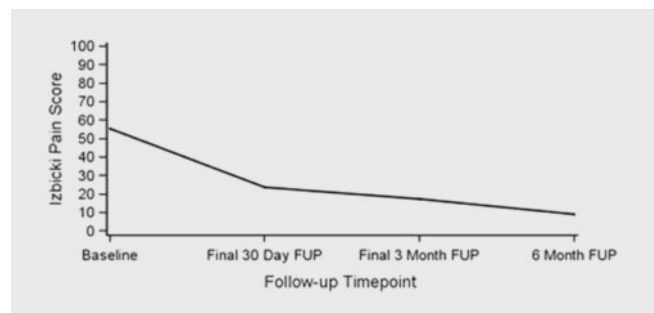
Aims SOVP-guided treatment of pancreatolithiasis offers an alternative to extracorporeal shock wave lithotripsy(ESWL) in patients with symptomatic chronic obstructive pancreatitis(SCOP). We present early results of a prospective evaluation of the efficacy, safety and clinical outcome of SOVP-guided lithotripsy.

Methods Between 2019-2021 patients with SCOP were enrolled in a prospective multicenter cohort study. The sample size calculation was based on the hypothesis of SOVP higher technical success over ESWL(Performance Goal of 74%). Primary endpoint was technical success defined as complete PD clearance within three SOVP sessions. Secondary endpoints included: clinical success, assessed by Izbicki pain score(IPS) improvement from baseline with complete/partial pain relief evaluation over time; incidence of adverse events(AE) reported in the follow-up; radiological PD diameter assessment before and 6 months after final SOVP.

Results We enrolled 40 patients with 1.7(±1.3)pancreatic stones, 8.4mm(±2.9)upstream PD diameter, and 55.3(±46.2)baseline IPS. SOVP achieved a complete stone clearance rate of 90.0%(36/40;p=0.011) with mean number of 1.33(STD0.62)SOVP-sessions. Pancreatic stents were placed in 88.7%(47/53) of the procedures for post-ERCP pancreatitis prophylaxis or treatment of associated strictures. Mild AE were registered in 7.5%(3/40)of the cases. At 6 months follow-up, the rate of residual stones was 0.0%(0/33), PD diameter decreased to 4.8mm±2.0 and IPS was 9.0±16.7 with complete pain relief/partial pain relief in the 66.7%(22/33)/21.2%(7/33).

► **Table 1**

	Izbicki Pain Score	Change in Izbicki Pain Score From Baseline
Baseline	55.3 ± 46.2(40)(0.0,303.8) (33.5,49.5,63.8)	NA
Final 30 Day Visit	23.6 ± 23.8(23)(0.0,63.8) (0.0,20.8,48.3)	-30.9 ± 24.5(23) (-76.7,0.0)(-50.5, -23.3, -11.3)
Final 3 Month Visit	17.3 ± 22.9(34)(0.0,76.3) (0.0,0.0,25.8)	-42.9 ± 47.3(34) (-272.1,6.3)(-50.0, -44.6,-17.5)
6 Month Visit	9.0 ± 16.7(33)(0.0,76.3) (0.0,0.0,13.8)	-48.3 ± 48.5(33) (-280.4,6.3)(-50.0, -45.5,-23.3)



► **Fig. 1**

Conclusions SOVP-guided treatment of symptomatic PD stones is safe and achieves ductal clearance in 90 % selected SCOP patients. Median-term results show pain relief in more than 2/3 cases. SOVP-guided lithotripsy is an effective alternative for ESWL for PD stones.

eP315 ENDOSCOPIC ULTRASOUND-GUIDED RADIOFREQUENCY ABLATION (EUS-RFA) OF GASTRO-INTESTINAL TUMORS: ANALYSIS OF INDICATIONS AND LONG-TERM RESULTS

Authors Carbajo A.Y.¹, De la Serna Higuera C.¹, Fuentes Valenzuela E.¹, Madrigal B.¹, Sanchez-Ocaña R.¹, Maroto C.¹, Sanchez L.¹, De Benito M.¹, Dura M.¹, Perez-Miranda M.¹

Institute 1 Hospital Universitario Rio Hortega, Valladolid, Spain

DOI 10.1055/s-0042-1745168

Aims Surgery is the mainstay therapy for some types of pancreatic tumors. In recent years, EUS-RFA has been described as an effective therapeutic option in poor surgical candidates. There is scant evidence in other types of digestive

neoplasms. Aims: to assess efficacy and safe of EUS-RFA in the treatment of gastrointestinal tumors.

Methods 35 consecutive tumors [mean size 19 mm (range 6-33)] in 33 patients [13 males; 65 (+12) years] from one center who underwent EUS-RFA over 7 years (2015-2021) were included. Technical success = ability to target the RFA needle; Response = decrease in diameter > 50 %; Complete response = disappearance or necrosis. EUS-RFA was performed with a 18 or 19G RFA needle (Starmed, Taewoong, South Korea) applying 50W in pulse of 10 seconds. The operative needle has an associated internal cooling system.

Results Indications: pancreatic mucinous neoplasia 21/35(60 %), P-NETs 7/35(20 %), 2 GIST, 2 pancreatic adenocarcinoma, 1 cholangiocarcinoma and 1 hepatocellular carcinoma. Most frequent location: head (40 %) and body of the pancreas (40 %). A total of 47 RF sessions were performed [1.42 session/tumor (range 1-4)]. Technical success was achieved in 94.3 % and response in 72.4 % (83 % in pancreatic mucinous neoplasia). Overall two adverse events occurred. There were no recurrences during follow-up (median 28 months (IQR 16-35)).

Conclusions EUS-RFA appears to be safe and effective in certain types of pancreatic tumors non-candidate for surgery. In addition, it could be an alternative in other types of gastrointestinal tumors accessible by EUS. Prospective studies are needed to confirm these results.

eP316 CHARACTERIZATION OF PRIMARY PANCREATIC LYMPHOMA BY EUS FINE NEEDLE ASPIRATION/ BIOPSY: A RETROSPECTIVE STUDY

Authors Casadio M.^{1,2}, Orlando D.², Lapenta R.², Diodoro M.G.³, Venti E.⁴, Stigliano V.², Assisi D.²

Institutes 1 La Sapienza University of Rome, Department of Translational and Precision Medicine, Rome, Italy; 2 Regina Elena National Cancer Institute, Division of Gastroenterology and Digestive Endoscopy, Rome, Italy; 3 Regina Elena National Cancer Institute, Department of Pathology, Rome, Italy; 4 Regina Elena National Cancer Institute, Rome, Italy

DOI 10.1055/s-0042-1745169

Aims Primary pancreatic lymphoma is a rare group of malignancies consisting of less than 0.5 % of pancreatic cancers and 0.1 % of malignant lymphomas. We describe our retrospective experience of characterization of such a rare malignancy by endoscopic ultrasound FNA/B.

Methods Between December 2008 and September 2021, 375 patients with pancreatic mass underwent EUS FNA/B. Samples were analyzed by pathologists experienced in pancreatic neoplasia. We selected patients with final diagnosis of pancreatic lymphoma and then we retrospectively analyzed demographic information, clinical reason of referral, pancreatic site, size, ultrasound appearance, cytological and histological data.

Results 6 of 375 (1.6 %) patients were diagnosed with primary pancreatic lymphoma. After preliminary CT scan examination, 5 out of 6 patients were referred to EUS FNA/B with first suspicion of adenocarcinoma. The median age was 65.6 years with slightly male predominance (66.6 %). The most frequent site was pancreatic head (83 %) with median size of 45.6 mm. Lymphoma was described as hypoechoic solid mass in 90 % of cases. Histology and immunochemistry confirmed respectively in 66 % and 33 % of patients low-grade and high-grade B cell Non-Hodgkin's Lymphoma. Only two patients showed peri-pancreatic lymph-nodal involvement.

Conclusions Primary pancreatic lymphoma is a challenging diagnosis for poor specificity of symptoms and imaging appearance with risk of misdiagnosis. EUS FNA / B is mandatory for histological confirmation of diagnosis and to ensure the best timely treatment, based on the combination of radio and chemotherapy rather than surgery.

eP317 EVALUATION OF PREDICTIVE FACTORS OF MALIGNANCY IN INTRADUCTAL PAPILLARY MUCINOUS NEOPLASM OF THE PANCREAS AND COMPARISON TO INTERNATIONAL GUIDELINES

Authors Fontanie R.¹, Schaefer M.¹, Orry X.², Laurent V.², Ayav A.³, Lopez A.¹, Muller M.¹, Chevaux J.-B.¹

Institutes 1 Centre hospitalier régional universitaire de Nancy, Hépatogastro-entérologie, Vandoeuvre les Nancy, France; 2 Centre hospitalier régional universitaire de Nancy, Radiologie, Vandoeuvre les Nancy, France; 3 Centre hospitalier régional universitaire de Nancy, Chirurgie Digestive, Vandoeuvre les Nancy, France

DOI 10.1055/s-0042-1745170

Aims This retrospective monocentric study aimed to assess predictive value of risk factors for intraductal papillary mucinous neoplasm (IPMN) malignancy according to available international guidelines (American/European guidelines and international consensus) and to assess yield of imaging at Nancy University Hospital.

Methods All consecutive patients with an operated IPMN between January 2013 and April 2021 were included.

Results Among 102 patients, 68 % (69/102) had malignant lesions and 32 % (33/102) had benign lesions. Predictive values for malignancy of the following risk factors were obstructive jaundice (Se = 19 %, Sp = 100 %), elevation of blood CA19.9 levels (Se = 55 %, Sp = 100 %), nodule ≥ 5mm (Se = 64 %, Sp = 87 %), main pancreatic duct (MPD) ≥ 10mm (Se = 38 %, Sp = 77 %), and suspicious cytology (Se = 59 % and Sp = 100). According to available guidelines, international consensus had best yield with high sensitivity (86 %) and specificity (64 %). Except thickened/enhancing cyst walls (p < 0.001), all risk criteria were present in the same proportions in computerized tomography (CT), magnetic resonance imaging (MRI) and endoscopy ultrasound (EUS). Respectively in CT, MRI and EUS, thickened/enhancing cyst walls had a sensitivity of 21 %, 39 %, and 62 % with a specificity of 76 %, 60 %, 30 %.

	Surgery	Benign lesion	Malignant lesion	Sensitivity	Specificity	Positive predictive value	Negative predictive value
American recommendations (n = 98)	Indicated	17	53	0.79 (95% CI: 0.67, 0.88)	0.45 (95% CI: 0.27, 0.64)	0.76 (95% CI: 0.64, 0.85)	0.50 (95% CI: 0.31, 0.69)
	Not indicated	14	14				
International consensus (n = 102)	Indicated	12	59	0.86 (95% CI: 0.75, 0.93)	0.64 (95% CI: 0.45, 0.80)	0.83 (95% CI: 0.72, 0.91)	0.68 (95% CI: 0.49, 0.83)
	Not indicated	21	10				
European recommendations (n = 101)	Indicated	25	66	0.96 (95% CI: 0.88, 0.99)	0.22 (95% CI: 0.09, 0.40)	0.73 (95% CI: 0.62, 0.81)	0.70 (95% CI: 0.35, 0.93)
	Not indicated	7	3				

► Fig. 1

Conclusions Our cohort demonstrates that useful predictive factors of malignancy are obstructive jaundice, a nodule ≥ 5mm, and parenchymal tissue mass. The international consensus of 2017 seems to be the best with high sensitivity and specificity, and the European guidelines favor surgery, resulting in low specificity.

eP318 ENDOSCOPIC ULTRASOUND-GUIDED THROUGH-THE-NEEDLE MICROFORCEP BIOPSY IMPROVES THE CATEGORIZATION OF THE TYPE OF PANCREATIC CYSTIC LESIONS

Authors Cho S.H.¹, Song T.J.¹, Seo D.-W.¹, Oh D.¹, Park D.H.¹, Lee S.S.¹, Lee S.K.¹, Kim M.-H.¹

Institute 1 University of Ulsan College of Medicine, Asan Medical Center, Department of Gastroenterology, Seoul, Korea, Republic of

DOI 10.1055/s-0042-1745171

Aims Endoscopic ultrasound-guided through-the-needle biopsy (EUS-TTNB) was introduced and has been performed for the diagnosis of pancreatic cystic lesions (PCLs). However, there is limited data regarding its efficacy and safety. We aimed to evaluate the feasibility, efficacy, and safety of EUS-TTNB in categorizing the types of PCLs, and to analyze factors associated with diagnostic failure.

Methods We retrospectively reviewed the EUS database to identify patients with PCL who underwent EUS-TTNB between January 2019 and November 2021. Technical success, diagnostic yield, and adverse events were analyzed. The discrepancies in the diagnosis between EUS-TTNB and the presumptive diagnosis made by conventional diagnostic modalities (i.e., EUS-morphology, cross-sectional imaging, and cystic fluid analysis) were also evaluated.

Results A total of 79 patients were analyzed. EUS-TTNB was successfully performed in all patients (technical success = 100 %). Histologic diagnosis of PCL was made in 64 patients (diagnostic yield = 82 %). Comparing EUS-TTNB with presumptive diagnosis, EUS-TTNB changed the diagnosis in 15 patients in terms of the categorization of the types of PCLs. There was significant difference in diagnostic yield between groups according to number of biopsies per session (≥ 4 biopsies, 93 % vs. < 4 biopsies, 67 %; $P = 0.045$). Procedure-related adverse events occurred in 6 (8 %) patients.

Conclusions EUS-TTNB showed high technical feasibility, diagnostic yield, and acceptable safety profile. EUS-TTNB as an adjunct to other modalities may improve the categorization of the types of PCLs. Studies with standardized procedure protocols and microforceps with improved designs are needed to reduce the diagnostic failure for the types of PCLs.

eP319 ENTEROSCOPY-ASSISTED ERCP FOR TREATMENT OF PANCREATIC PSEUDOCYST AND STRICTURE: A CASE REPORT

Authors [Cho E.¹](#), [Park C.H.¹](#), [Cho S.Y.¹](#)

Institute [1 Chonnam National University Hospital, Internal Medicine, Gwangju, Korea, Republic of](#)

DOI [10.1055/s-0042-1745172](#)

Aims Endoscopic treatment of pancreatic pseudocyst in patients with altered anatomy is challenging. The aim of this study is to prove the efficacy and safety of enteroscopy-assisted ERCP for the treatment of pancreatic pseudocyst and stricture in a patient with extrahepatic cholangiocarcinoma after pylorus-preserving pancreaticoduodenectomy.

Methods We present a 76-year-old female with symptoms of abdominal pain and dyspepsia. She had undergone pylorus-preserving pancreaticoduodenectomy 6 months ago and had been receiving adjuvant chemotherapy. However, her recent chemotherapy had been stopped due to her abdominal symptoms. Laboratory findings showed elevated serum amylase and lipase levels. Abdominal CT showed stable disease in RECIST criteria of the cholangiocarcinoma, but about 3 cm-sized pancreatic pseudocyst and pancreatic duct dilatation in the remnant pancreas was newly discovered.

Results We decided to perform endoscopic drainage of the pancreatic pseudocyst. Single-balloon enteroscopy-assisted ERCP showed a thin membrane with a suspicious underlying cyst at the pancreaticojejunostomy anastomosis site. Endoscopic ultrasonography using a mini probe showed about a 3 cm-sized anechoic lesion at the pancreaticojejunostomy site, indicating the thin membrane was obstructing pancreatic drainage. After puncturing the thin membrane with a needle knife, fluid gushed out from the pinhole. Pancreaticogram confirmed the pseudocyst and a plastic stent was deployed. After the procedure, her abdominal symptoms improved and she was discharged home safely. Regarding follow-up, abdominal CT after 3 weeks showed complete resolution of the pseudocyst. The patient is now receiving chemotherapy.



► Fig. 1

Conclusions Single balloon enteroscopy-assisted ERCP was an effective and safe treatment in a patient with pancreatic pseudocyst and stricture after PPPD.

eP320 SHEAR-WAVE ELASTOGRAPHY VERSUS STRAIN ELASTOGRAPHY WITH HISTOGRAM ANALYSIS IN SOLID PANCREATIC LESIONS: A PILOT STUDY

Authors [Rednic V.¹](#), [Cioltean C.^{1,2}](#), [Orzan R.^{1,2}](#), [Pojoga C.^{1,3}](#), [Mosteanu O.^{1,2}](#), [Hagiu C.^{1,2}](#), [Rusu I.^{1,2}](#), [Seicean A.^{1,2}](#)

Institutes [1 Regional Institute of Gastroenterology and Hepatology, Gastroenterology, Cluj-Napoca, Romania;](#) [2 Iuliu Hațieganu University of Medicine and Pharmacy, Cluj-Napoca, Romania;](#) [3 Babeș-Bolyai University, Clinical Psychology and Psychotherapy Department, Cluj-Napoca, Romania](#)
DOI [10.1055/s-0042-1745173](#)

Aims Strain elastography endoscopic ultrasound (SE-EUS) has been proved as a valuable supplement to endoscopic ultrasound (EUS) in assessing solid pancreatic lesions, with sensitivity of 98 % and specificity of 63 %. However, the value of newly available shear wave EUS elastography (SWM-EUS) has been disappointing in one retrospective study. **Aim:** to assess the diagnostic value of SE-EUS and EUS-SWM in solid pancreatic lesions.

Methods Our prospective study was started in August 2021 in one tertiary medical center and we recruited patients with solid pancreatic masses > 2 cm in diameter at CT scan for EUS assessment first with SE-EUS and strain histogram (SH) (3 measurements), followed by SWM-EUS (3 measurements with $V_s N > 20$). Patients with inconclusive pathology results were excluded. The final diagnosis was based on surgery or EUS tissue acquisition results.

Results Thirty-six patients with solid pancreatic lesions were evaluated. The final diagnosis was 20 pancreatic adenocarcinoma, 4 neuroendocrine pancreatic tumors (NETs), 6 chronic pancreatitis and 6 other types of lesions. The mean value of SH and SW for pancreatic adenocarcinoma were 20.24 and 23.41 kPa, for chronic pancreatitis were 18.13 and 9.98 kPa, for NETs were 38.83 and 20.59 kPa, respectively, but the difference between the two elastography methods (T-test, $P = 0,06$) was not statistically significant.

Conclusions In this prospective study we found no significant difference between SE-EUS and EUS-SMW. Further research is needed on this topic in order to face the challenges in standardize the EUS-SMW procedure in pancreatic lesions, mainly related to the deep location of the lesions and respiratory movements.

eP321 HOW TO OPTIMIZE STANDARD OF CARE FOR PANCREATOBILIARY DISEASES: A NATIONWIDE ANALYSIS

Authors [Coluccio C.¹](#), [Archibugi L.²](#), [Conti Bellocchi M.C.³](#), [Falconi M.⁴](#), [Criminò S.F.³](#), [Capurso G.²](#), [Fabbri C.¹](#), [Aisp G.⁵](#)

Institutes [1 Forlì-Cesena Hospitals, AUSL Romagna, Gastroenterology and Digestive Endoscopy Unit, Forlì-Cesena, Italy;](#) [2 Vita-Salute San Raffaele University, IRCCS San Raffaele Scientific Institute, Pancreato-Biliary Endoscopy and Endosonography Division, Pancreas Translational & Clinical Research Center, Milan, Italy;](#) [3 The Pancreas Institute, G.B. Rossi University Hospital, Department of Medicine, Gastroenterology and Digestive Endoscopy Unit,](#)

Verona, Italy; 4 Vita-Salute San Raffaele University, IRCCS San Raffaele Scientific Institute, Pancreatic Surgery Unit, Pancreas Translational and Clinical Research Center, Milan, Italy; 5 Associazione Italiana Studio Pancreas, Milan, Italy
DOI 10.1055/s-0042-1745174

Aims Aim of this survey is to investigate the current clinical and therapeutic management of patients affected by pancreatobiliary diseases nationwide, with the purpose to identify the key points needing to be strengthened, focusing on clinical outcome optimization.

Methods 38 questions were submitted online, through scientific communities network, to all Italian centers about outpatient assessment, endoscopic and surgical procedures, multidisciplinary board. The answers were prospectively reported anonymously and analyzed on a database (Excel, Open Office).

Results 94 participants from 67 hospitals completed the survey. Only 51 % of the centers has an outpatient service dedicated to pancreatobiliary disorders, and in 52 % of the cases without an exclusive direct way of communication between doctors and patients. Only 48 % involves regularly a multidisciplinary meeting. Cystic lesions are the most troublesome diseases among specialists. Diagnostic Endoscopic Ultrasonography (EUS) is not performed in 30 % of the hospitals, therapeutic EUS in 42 %, endoscopic retrograde colangiopancreatography (ERCP) in 3 %. Rapid on-site evaluation is usually not available, or just in selected cases. After ERCP failure, percutaneous drainage is the most common rescue strategy of treatment. Dedicated pancreatobiliary specialists are not always guaranteed: pathologists just in 43 % of hospitals, surgeons in 78 %, oncologists in 54 %.

Conclusions This is the first survey assessing the state of the art on clinical and therapeutic management of pancreatobiliary diseases in Italy. There is currently wide inhomogeneity nationwide, which demonstrates a pressing need to define performance indicators towards a standardization of healthcare, in the setting of a multidisciplinary teamwork.

eP322V ENDOSCOPIC-RADIOLOGIC RENDEZ-VOUS CHOLEDOCHAL RECONSTRUCTION FOR THE TREATMENT OF POST-SURGICAL COMMON BILE DUCT TRANSECTION

Authors Costa D.¹, Tringali A.², Greco G.³, Lanocita R.³, Cosimelli M.⁴, Mazzaferro V.⁵

Institutes 1 ULSS2 Marca Trevigiana, Endoscopy Unit, Conegliano, Italy; 2 National Tumour Institute of Milan, Endoscopy Unit, Milan, Italy; 3 National Tumour Institute of Milan, Interventional Radiology, Milan, Italy; 4 National Tumour Institute of Milan, Colorectal Surgery Unit, Milan, Italy; 5 National Tumour Institute of Milan, HPB Surgery and Liver Transplantation, Milan, Italy
DOI 10.1055/s-0042-1745175

A 76-year-old female presented complete choledochal transection (E3 Strasberg) after combined cytoreductive surgery with Hyperthermic Intra Peritoneal Chemotherapy for Pseudomyxoma Peritonei.

A rendez-vous procedure by percutaneous and endoscopic approach was performed. The sphincterotome with the stiff tip of the guidewire was advanced until reaching the common bile duct (CBD) transection, closed by metal clips. The CBD was then punctured by the guidewire and a basket was advanced percutaneously through the anterior duct, over the CBD transection until grasping the wire, restoring the CBD. Finally, a FC-SEMS was placed endoscopically over the guidewire. Cholangiography showed no leak of medium contrast.

eP323V PERCUTANEOUS CHOLANGIOSCOPY-GUIDED LITHOTRIPSY IN A PATIENT WITH OBSTRUCTIVE COMMON BILE DUCT STONES AFTER HEPATICOJEJUNOSTOMY

Authors Costa D.¹, Tringali A.², Piccoli G.³

Institutes 1 ULSS2 Marca Trevigiana, Endoscopy Unit, Conegliano, Italy;

2 National Tumour Institute of Milan, Endoscopy Unit, Milan, Italy; 3 ULSS2 Marca Trevigiana, Interventional Radiology, Conegliano, Italy
DOI 10.1055/s-0042-1745176

An 84-year-old female with hepaticojejunostomy presented with cholangitis due to obstructive common bile duct stones. Radiologic attempts to overcome the obstruction resulted unsuccessful. A 12 French introducer was then placed percutaneously through the left duct, leading the insertion of a dedicated single-operator cholangioscope. Electro-hydraulic lithotripsy was performed under direct visualisation until reaching the biliodigestive anastomosis. Stones fragments were pushed to the duodenum with a balloon. A guidewire was finally inserted through the cholangioscope in the duodenum, allowing the placement of an internal-external drainage.

eP324 ENDOSCOPIC ULTRASOUND (EUS) GUIDED RADIOFREQUENCY ABLATION (RFA) FOR LIVER METASTASES: PRELIMINARY EXPERIENCE IN 14 CONSECUTIVE PATIENTS

Authors Dancour A.¹, Livovsky D.M.¹, Sheykman G.², Ben Haim M.³, Goldin E.¹, Golan T.⁴

Institutes 1 Shaare Zedek Medical Center, Faculty of Medicine Hebrew University of Jerusalem, Digestive Diseases Institute, Jerusalem, Israel; 2 Shaare Zedek Medical Center, Faculty of Medicine Hebrew University of Jerusalem, Radiology Department, Jerusalem, Israel; 3 Shaare Zedek Medical Center, Faculty of Medicine Hebrew University of Jerusalem, Department of Surgery, Jerusalem, Israel; 4 Sheba Medical Center, Sheba Pancreatic Cancer Center, Ramat Gan, Israel
DOI 10.1055/s-0042-1745177

Aims Loco-regional treatments for liver metastasis from colorectal and pancreatic neuroendocrine (NET) tumors are based on surgical resection and/or transcutaneous RFA. Local eradication of metastasis from pancreatic duct adenocarcinoma (PADC) is more controversial. We aimed to investigate the feasibility and safety of EUS guided RFA in a highly selected group of patients with less than 4 liver metastases (LM).

Methods Prospective series of patients treated with EUS-guided RFA. A 150cm, 19 gauge needle-electrode connected to a RF generator settled to 50w was used. Technical success was defined as >80 % ablation of LM on post RFA CT.

Results From December 2017 to September 2020, fourteen patients (8 men), median age 64(31-75) were included. Primary tumors were PADC in 12 patients, pancreatic NET and colon cancer in 1 patient. 24 LM were treated, 8 on right liver lobe; median size 20mm (8-55). Technical success was achieved for 15 of the 20 LM evaluated. Post RFA median survival in PADC patients was 6 months (1.5-41) while overall median survival was 16 months (2.5-51), the 2 other patients were still alive 13 and 41 months after RFA. Two complications occurred, jaundice treated by PTC and asymptomatic gallbladder hematoma in 1 patient each.

Conclusions In selected patients, EUS guided RFA for liver metastasis was feasible and safe with high initial technical success. Right liver lobe metastases can be treated as metastasis elsewhere in liver. The unusually prolonged observed survival should be confirmed by larger controlled studies as potential place of EUS-guided RFA in combination treatment for CC liver metastasis

eP325 IMPACT OF ENDOSCOPIC ULTRASOUND EVALUATION WITH FINE-NEEDLE ASPIRATION OR FINE-NEEDLE BIOPSY IN RESECTABLE PERIHILAR CHOLANGIOCARCINOMA

Authors de Jong D.M.¹, van de Vondervoort S.¹, Dwarkasing R.S.², Doukas M.³, Voermans R.P.⁴, Verdonk R.⁵, Groot Koerkamp B.⁶, Bruno M.J.¹, van Driel L.M.¹

Institutes 1 Erasmus University Medical Center, Gastroenterology and Hepatology, Rotterdam, Netherlands; 2 Erasmus University Medical Center, Radiology, Rotterdam, Netherlands; 3 Erasmus University Medical Center,

Pathology, Rotterdam, Netherlands; 4 Amsterdam UMC, Department of Gastroenterology and Hepatology, Amsterdam, Netherlands; 5 St Antonius Hospital, Gastroenterology and Hepatology, Nieuwegein, Netherlands; 6 Erasmus University Medical Center, Department of Surgery, Rotterdam, Netherlands

DOI 10.1055/s-0042-1745178

Aims Accurate assessment of the lymph node (LN) status is crucial in resectable perihilar cholangiocarcinoma (pCCA) to prevent major surgery in patients with LN metastases. This study investigates the added value of preoperative Endoscopic Ultrasound (EUS) with or without Tissue Acquisition (TA) compared to imaging for the detection of positive LNs in patients with resectable pCCA.

Methods In this retrospective, multicenter cohort study, patients with potentially resectable pCCA who underwent preoperative EUS between 2010 and 2020, were included. EUS was performed for different indications, i.e.; suspected biliary mass or LN assessment. LN were therefore not systematically assessed in all patients. The endosonographer determined if LNs were suspicious and if TA was indicated. Clinical impact of EUS-TA was defined as percentage of patients spared from surgery due to detection of positive LNs.

Results EUS was performed in 141 patients, of whom 107 (76%) had suspicious LN on imaging prior to EUS. In these 107 patients, EUS-TA confirmed positive LNs in 20 (19%) of which 18 (17%) were precluded from surgery. In 34 patients without suspicious LNs on imaging, EUS-TA found positive LNs in 2 patients. Finally, 74 patient underwent surgery with identification of positive LNs in 24 (32%).

► Table 1

	Suspicious LN on imaging (n = 107)	No LN on imaging (n = 34)
EUS identified suspicious LN	70 (65%)	11 (32%)
EUS-TA of suspicious / non suspicious LN	56 (80%) / 5 (5%)	6 (55%) / 0 (0.0%)
- MLN	- 20 (36%) / 0 (0%)	- 2 (33%)
EUS-TA precluding surgery	18 (17%)	2 (6.0%)
Surgery	55 (51%)	19 (56%)
- MLN	- 20 (36%)	- 4 (21%)

Conclusions EUS-TA seems to be of value in patients with potentially resectable pCCA additional to cross-sectional imaging. Standardized implementation of EUS with systematic survey of LNs and TA may further increase the yield and positively influence the clinical impact of preoperative EUS.

eP326V EUS-GUIDED FIDUCIAL MARKERS IMPLANTATION FOR PRECISE LOCALIZATION OF PANCREATIC NET

Authors Deiana S.¹, Gabbani T.¹, Impellizzeri G.¹, Ottaviani L.¹, Rainer J.¹, Curatolo A.¹, Bonura G.F.¹, Biancheri P.¹, Soriani P.¹, Manno M.¹

Institute 1 Azienda USL Modena, Gastroenterology and Digestive Endoscopy Unit, Carpi, Italy

DOI 10.1055/s-0042-1745179

A 73-year-old man was referred with weight loss and newly diagnosed diabetes. Abdominal CT and MRI scans showed non-specific enlarged pancreatic body without focal lesions. Conversely, EUS revealed a 21 × 17mm irregular, well-defined lesion within the pancreatic body, with hypoechoic capsule and intense enhancement after contrast medium injection, suspicious for a NET, in a context of chronic pancreatitis. FNB and histological examination confirmed the diag-

nosis of NET. To facilitate NET localization during surgery, we performed EUS-guided fiducial marker implantation. Fiducial marker visualization on intraoperative ultrasound scan aided the precise localization of the pancreatic NET, and successful distal splenopancreatectomy was performed.

eP327V AMPULLECTOMY OF A TRADITIONAL SERRATED ADENOMA

Authors del Pozo-García A.J.¹, Marín-Gabriel J.C.¹, Hernán P.¹, Sánchez-Gómez F.¹

Institute 1 Hospital Universitario 12 de Octubre, Endoscopy Unit, Gastroenterology Service, Madrid, Spain

DOI 10.1055/s-0042-1745180

Female, 51 yo. Background: Primary mediastinal lymphoma in CR after radiochemotherapy (2019).

During dyspepsia investigation a big (over 3-cm) sessile (Paris 0-Is) duodenal ampullary lesion was found by upper endoscopy. Regular margins, absence of spontaneous bleeding, both suggesting benignity. Biopsies: papillary tubulovillous adenoma with low-grade dysplasia. EUS: mucosal layer lesion, intermediate echogenicity, no intraductal biliary or pancreatic growing and absence of lymphadenopathies. A snare ampullectomy was performed, followed by sphincterotomy, double stenting, and argon-ablation of the margins; discharged in 48 hours. Pathology: traditional serrated adenoma with high-grade dysplasia foci and no invasion of lamina propria or submucosa. No 6-month recurrence.

eP329 SPYGLASSDS-GUIDED LITHOTRIPSY FOR PANCREATIC DUCT STONES IN SYMPTOMATIC, TREATMENT REFRACTORY CHRONIC PANCREATITIS – LONG-TERM (3-5 YEARS) FOLLOW-UP ON CLINICAL SUCCESS AND QUALITY OF LIFE

Authors Dertmann T.¹, Siersema P.², Geenen E.-J.², Schmitz L.¹, Schneider M.¹, Neuhaus H.¹, Beyna T.¹, Gerges C.¹

Institutes 1 Evangelisches Krankenhaus Duesseldorf, Düsseldorf, Germany; 2 Radboud University, Nijmegen, Netherlands

DOI 10.1055/s-0042-1745182

Aims Digital-single-operator-video-pancreatocopy (d-SOVP) guided lithotripsy was shown to achieve high technical and clinical success rates (95%) in a short-term follow-up (FU). There is only little evidence of mid- and long-term success or impact on quality of life.

Methods We performed a retrospective analysis of a long-term FU in 20 patients with d-SOVP-guided lithotripsies (n = 23) between 2015-2017. Persistence of clinical success (pain reduction > 50% in NRS) as well as QOL were evaluated by database-analysis and systematic questionnaire (based on SF-12) after 3, 6, 12, 30 months and in an ongoing FU.

Results After 37-62 months (mean = 45 months) 12/15 (80%) patients reported a significant decrease in symptoms (mNRS from 6.1 [± 0.55] to 1.7 [± 0.46], P < 0.01) and described improvements in health status and everyday life performance (SF-12). There was no need of further interventions except subsequent stenting in case of persistent strictures (n = 4). 7/8 patients (87%) received imaging (MRI, CT) after 3-5 years showing persistent ductal clearance. Two patients (20%) underwent a partial pancreatectomy, but only one was pain-free after surgery. Two patients were lost to FU, three patients died during FU. 12/15 (80%) patients showed good physical and mental condition as seen in the SF-12 survey (mean difference from USA population average + 4.2 in PCS-12, + 8.7 MCS-12).

Conclusions d-SOVP guided lithotripsy is safe and effective, achieving good clinical outcome and high ductal clearance. Beneficial effects on symptom control and QOL seem to be persistent in most of patients after mean = 45 months FU, even in this selective, pre-treated patient group and are comparable to previously published ESWL results.

eP330V EUS GUIDED GLUE + LIPIODOL INJECTION IN PSEUDOANEURYSM OF PANCREATODUODENAL ARTERY: WHAT WENT WRONG!

Authors Desai P.N.¹, Prajapati R.¹, Patel C.¹, Kabrawala M.¹, Patel N.¹, Sethia M.¹, Mehta R.¹, Nandwani S.¹

Institute 1 SIDS Hospital & Research Centre, Surat, India

DOI 10.1055/s-0042-1745183

46 year male with haematemesis and malena. CECT abdomen- acute on chronic pancreatitis, 12 by 13 mm pseudoaneurysm in wall of proximal second part of duodenum from superior pancreaticoduodenal artery. Pseudoaneurysm came in good injecting position only in left lateral position. 1.5ml cyanoacrylate glue with 3 ml lipiodol injected using 19 G needle. 2.3ml confirmed arrest of blood flow. In supine position the glue extravasated in common hepatic artery (CHA) and right gastroepiploic artery. Post severe lactic acidosis developed. Managed conservatively. After a week developed gall bladder necrosis. Cholecystectomy done. Conclusion- Always do EUS vascular intervention in supine position.

eP331V EUS GUIDED THROMBIN INJECTION OF PSEUDO AND TRUE ANEURYSM OF A BRANCH OF SPLENIC ARTERY

Authors Desai P.N.¹, Prajapati R.¹, Patel C.¹, Kabrawala M.¹, Sethia M.¹, Patel N.¹, Nandwani S.¹, Mehta R.¹

Institute 1 SIDS Hospital & Research Centre, Surat, India

DOI 10.1055/s-0042-1745184

A 64 years male patient with abdominal pain 7 days. Hemoglobin 6.5 mg/dl, Ultrasound revealed 6 x 5 cm aneurysm in body of pancreas. CT angiogram -multiple microaneurysms in liver, kidneys, pancreas and spleen suggestive of polyarteritis nodosa, A 6 x 5 cm pseudoaneurysm in the pancreatic body from branch of splenic artery. A true aneurysm inside the pseudoaneurysm, mistaken as splenic artery. Pseudoaneurysm was punctured with 22G needle and 1 ml each of reconstituted thrombin + fibrinogen + aprotinin was injected simultaneously. True aneurysm still patent on CT and injected with thrombin and complete obliteration achieved.

eP332 ENDOSCOPIC ULTRASOUND-GUIDED HEPATICOGASTROSTOMY VERSUS PERCUTANEOUS TRANSHEPATIC DRAINAGE FOR MALIGNANT HILAR OBSTRUCTION AFTER FAILED ENDOSCOPIC RETROGRADE CHOLANGIOPANCREATOGRAPHY: EFFICACY AND SAFETY ANALYSIS

Authors Samanta J.¹, Gupta P.², Dhar J.¹, Kumar A.¹, Gupta V.¹, Kochhar R.¹

Institutes 1 Postgraduate Institute of Medical and Research, Gastroenterology, Chandigarh, India; 2 Postgraduate Institute of Medical and Research, Radiology, Chandigarh, India

DOI 10.1055/s-0042-1745185

Aims Percutaneous transhepatic biliary drainage (PTBD) is conventionally performed as a salvage procedure in patients with unresectable malignant hilar obstruction (MHO) after failed endoscopic retrograde cholangiopancreatography (ERCP) or for inaccessible papilla. Endoscopic ultrasound-guided hepatocystostomy (EU-HGS) is a recent alternative and this study is aimed to compare the outcome, efficacy and adverse events of EU-HGS and PTBD for MHO.

Methods All consecutive patients of MHO with failed/unfeasible ERCP who underwent EUS-HGS or PTBD in a tertiary care centre from September 2018 to August 2021 were included in the study. Demographic, laboratory and clinical parameters were documented at baseline. Primary outcome was clinical success. Other outcome parameters included technical success, adverse events, hospital stay.

Results Of the 46 patients (median age 50 [IQR 17.5] yrs; male 20 [43.5%]) included, 19 underwent EUS-HGS and rest PTBD (n = 27). The commonest etiology was carcinoma gallbladder (30; 65.2%) followed by hilar cholangiocarcinoma (9; 19.6%). Cholangitis was present in 37 (80.4%) of which 24 (52.2%) had severe cholangitis with coagulopathy in 20 (43.5%). The most common block was type 2 (24; 52.5%) followed by type 3a (12; 26.1%). Technical success was 100% in both the groups. Clinical success was similar in the two groups (78.6% vs 96.0%; p = 0.12). Overall adverse events were higher in the PTBD group (44.4% vs 15.8%; p = 0.04) with prolonged hospital stay (11.0 vs. 6.0 days; p = 0.007), although none had procedure related deaths.

► Table 1

	EUS-HGS (n = 19)	PTBD (n = 27)	p value
Clinical Success	11 (78.6%)	24 (96.0%)	0.12
Overall adverse events	3 (15.8%)	12 (44.4%)	0.04
Hospital stay (days) (median [interquartile range])	6.0 (9.0)	11.0 (7.0)	0.007
Mortality related to the procedure	0 (0%)	0 (0%)	

Conclusions EUS-HGS is an effective and safe alternative to PTBD, with similar success rates but lower adverse-event rates and length of hospitalization.

eP333 CLINICAL OUTCOMES FOLLOWING ENDOSCOPIC MANAGEMENT OF ACUTE PANCREATITIS WITH LARGE (> 15 CM) WALLED-OFF PANCREATIC NECROSIS: A RETROSPECTIVE, SINGLE TERTIARY CENTER COHORT STUDY

Authors Ebrahim M.¹, Werge M.P.¹, Hadi A.¹, Lahchich M.¹, Nagras Z.G.¹, Lauritsen M.L.¹, Schmidt P.N.¹, Hansen E.F.¹, Novovic S.¹, Karstensen J.G.¹

Institute 1 Copenhagen University Hospital Hvidovre, Pancreatitis Centre East, Gastrounit, Copenhagen University Hospital Hvidovre, Hvidovre, Denmark, Hvidovre, Denmark

DOI 10.1055/s-0042-1745186

Aims Development of walled-off pancreatic necrosis (WON) is associated with considerable morbidity and mortality. The use of minimally invasive techniques in the treatment of WON is well established, although data on treatment outcomes in large fluid collections are lacking. The aim of this study was to assess the clinical outcomes following treatment with minimally invasive techniques of WON > 15 cm at a single tertiary center.

Methods Between 2010 and 2020, consecutive patients with large (> 15 cm) WON were identified from a prospectively maintained database. Patients with chronic pancreatitis or an index intervention 90 days or more from the debut of symptoms were excluded. The primary outcome was the need for open necrosectomy. Secondary outcomes included in-hospital mortality and length of stay. All patients were followed for a minimum of one year.

Results A total of 144 patients with a median age of 60 years IQR (49-69) were included. The median WON-diameter was 19 cm, IQR (17-22).

Most patients were treated with endoscopic transluminal drainage. The median length of stay was 53 days (IQR 39-76) and 61 (42%) patients needed intensive care support during the hospital stay. Only one (0.7%) patient needed an open necrosectomy. Procedure-related adverse events occurred in 10 (7%) patients. Overall, 24 patients (17%) died during admission, all due to multi-organ failure. The median follow-up was 35 months (IQR 15-63.5). Complete resolution was achieved in all remaining patients.

Conclusions Endoscopic treatment of large WON is practical, with a minimal need for surgery and acceptable rates of morbidity and mortality.

eP334 THE CONTRIBUTION OF ENDOSCOPIC ULTRA SONOGRAPHY IN AMPULLARY PATHOLOGY

Authors El Mountassir M.¹, Borahma M.¹, Benelbarhdadi I.¹, Chabib F.¹, Lagdali N.¹, Berhili C.¹, Ajana F.¹

Institute 1 Mohammed V University, Ibn Sina Hospital, Department of Gastroenterology C, Rabat, Morocco

DOI 10.1055/s-0042-1745187

Aims The aim was to show the role of ultrasound endoscopy in the diagnosis of ampullomas.

Methods This was a study spanning a 2-year period during which 09 patients were identified. We evaluated tumor size, tumor wall staging, pancreatic and biliary impact, tumor echogenicity, vascular relationships and the presence of lymphadenopathy.

Results The mean age was 61 years with a predominance of females. The indication for echoendoscopy was a suspicion of ampulloma in imaging in 55 % of cases, a discovery of uncertain ampullary pathology on duodenoscopy before ERCP in 33 %, in as part of the etiological assessment of acute pancreatitis in 11 % of cases. The tumor was classified as uT1 in 44.4 %, uT3 in 33.3 %, uT2 in 11.1 %, uT4 in 11.1 % of cases. The development was endocanal in 44.4 % of cases; exo ampullary and mixed in 44 % and pseudo-tumor in only one case. A22G needle aspiration was performed in 44.5 % of cases; the results were in favor of a Vaterien adenocarcinoma in 100 % of cases; including 2 patients considered uT1 were operated and classified respectively pT3bN1M and pT2 on an operative specimen with absence of vascular emboli. A puncture by biopsy forceps was also performed in 55.5 % of cases, the results were in favor of a Vaterien adenocarcinoma in 60 %, considered successively uT2, uT3 in two cases and which were operable and classified respectively pT3aNxM, pT2N0MX and pT1N0Mx on the surgical specimen. The forceps biopsy came back negative in 40 % of cases.

Conclusions: Endoscopic ultra sonography (EUS) is today the best tool for examining the ampullary region. In our study we had 100 % of positive cases on FNA while the clamp was positive in 60 % of cases.

eP335 ENDOSCOPIC RETROGRADE CHOLANGIO-PANCREATOGRAPHY IN RUPTURED LIVER HYDATID CYST

Authors Elmamouni S.¹, Borahma M.², Chabib F.Z.¹, Kadiri M.², Ben Elbarhdadi I.², Ajana F.Z.²

Institutes 1 Department of Gastroenterology C, Rabat, Morocco; 2 Mohammed V University in Rabat, Department of Gastroenterology C, Rabat, Morocco

DOI 10.1055/s-0042-1745188

Aims We retrospectively reviewed the effectiveness of endoscopic treatment of ruptured hydatid cyst into intrahepatic bile ducts.

Methods It's retrospective study reporting cases of hydatid cyst ruptured in the bile duct over a period of 17 years and having benefited from endoscopic treatment.

Results Diagnosis of intrabiliary rupture of hydatid cyst was mostly suspected by acute cholangitis, jaundice, pain, and/or persistent external biliary fistula after surgery. The diagnosis was confirmed by radiology and endoscopic retrograde cholangiopancreatography (ERCP) findings. We retrospectively reviewed clinical, laboratory, imagery, and ERCP findings for all patients. The therapeutic methods performed were endoscopic sphincterotomy, extraction by balloon or Dormia basket, stenting, or nasobiliary drainage. Sixteen patients with ruptured hepatic hydatid cyst into bile ducts were seen in 17 years. Nine of 20 patients had a surgical history of hepatic hydatid cyst and three patients had a percutaneous treatment history. We carried out ERCP with sphincterotomy and extraction of hydatid materials (extraction balloon (n = 8); Dormia basket (

n = 5) or biliary drainage (nasobiliary drainage (n = 1); biliary stenting (n = 1). The fistula healed in 80 % of patients with a median time of 6 weeks [range, 1–12] after endoscopic treatment.

Conclusions ERCP was an effective method of treatment for hepatic hydatid cyst with biliary fistula.

eP336 DIAGNOSTIC YIELD OF EUS FNA IN PANCREATIC MASSES : CORRELATION BETWEEN THE CONSERVATIVE USED AND PATHOLOGICAL RESULT

Authors Elmoutaoukil N.¹, Rais K.², El eulj O.², Tammouch Z.², Zazour A.², Kharrasse G.², Ismaili M.Z.², Khannoussi W.²

Institutes 1 najoua elmoutaoukil, Oujda, Morocco; 2 Mohammed First University, Digestive Disease Research Laboratory, Oujda, Morocco

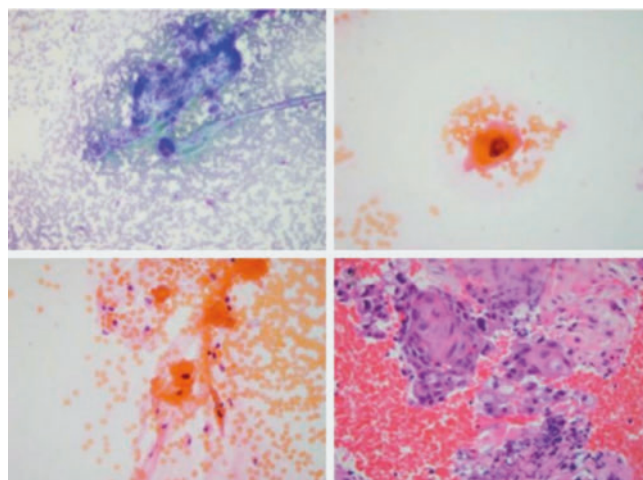
DOI 10.1055/s-0042-1745189

Aims To evaluate the yield of EUS FNA in the diagnosis of pancreatic masses and establish a correlation between the conservative used and pathological results

Methods A retrospective descriptive study, from August 2016 to August 2021, including 106 EUS-FNA performed and 99 patients with a pancreatic mass. Data regarding the results were analysed by SPSS.

Results

Mean age was 63.3 years; sex ratio was 1. Mean lesion size was 4 cm; needle used was 22G in 87.7 %; techniques frequently used were "slow pull" associated with aspiration in 50 % of cases and slow pull alone in 43.4 %; the mean pass number was 2.4; conservative was chosen in concert with anatomopathologists: cytolute and formalin in 34 %, cytolute alone in 20 %, slide spreading + formalin in 16 %, and saline alone in 7.5 % of cases; a combination of several conservatives was possible. Cell block procedure was performed in 82.4 %. The association of cytological and cell block procedure revealed the following results : pancreatic adenocarcinoma in 65.6 %; pancreatic adenosquamous carcinoma in 2 %; pancreatic lymphoma in 1 %; metastasis of pulmonary keratinizing squamous cell carcinoma in 1 % (Figure 1: a-c: aspiration, d: cell block), pancreatic carcinoma in situ in 1 %; solid and pseudo-papillary pancreatic tumor in 2 %; pancreatic tuberculosis, mucinous cystadenoma, autoimmune pancreatitis, and chronic pancreatitis respectively in 1 %. 3 cases of minimal bleeding, resolved spontaneously, were noted.



► Fig. 1

Conclusions The yield of EUS FNA in the diagnosis of pancreatic masses in our experience was 80 %. Most used conservative was cytolute alone or combined in 65 %; confirming a conclusive diagnosis in 53.7 %.

eP337 EFFECT OF BLOOD CONTAMINATION ON EUS GUIDED SAMPLING OF BILIO-PANCREATIC MASSES: MULTICENTER STUDY

Authors El-Nady M.¹, Altonbary A.², Hakim H.², Abou-Elmagd A.³, Abbas W.⁴
Institutes 1 Faculty of Medicine – Cairo University, Cairo, Egypt; 2 Faculty of Medicine – Mansoura University, Mansoura, Egypt; 3 Armed Forces College of Medicine, Cairo, Egypt; 4 Faculty of Medicine – Assiut University, Assiut, Egypt

DOI 10.1055/s-0042-1745190

Aims Endoscopic ultrasonography (EUS) is an established tool for the detection, staging, sampling and optimal management of pancreatic and hepatobiliary tumors. Sampling of vascular rich lesions may carry increased risk of hemorrhage with its subsequent complications. The present study aimed to evaluate the role of EUS guided sampling of vascular rich pancreatic lesions and demonstration of the effect of blood contamination on accurate diagnosis.

Methods The study was conducted on three hundred eighty eight patients after a written informed consent was obtained from all patients. Patient selection based on identification of vascular rich pancreatic lesions during performing endoscopic ultrasonography with use of color doppler imaging beside the presence of indication of tissue acquisition for management decision. Lesions were classified according to proportion of adequate clusters of cells for diagnosis to the amount of blood contaminating the examination field.

Results The number of passes used to obtain cytological material was correlated with amount of blood contaminating in the specimen. Little amount of blood contaminating slide along with adequate cellularity for proper cytological evaluation was seen in the first 2 passes in total 358 patients compared to the 3rd and 4th passes done in 30 patients.

There was statistically significant association between ROSE and capillary technique used in EUS-FNA with adequate cellularity and less blood contaminating slides.

Conclusions For accurate diagnosis of hypervascular pancreatic lesions, using capillary technique, performing less number of passes and the presence of cytopathologist with rapid on site evaluation were associated with subsequent accurate cytological reporting.

eP338 EFFECTIVENESS OF DOUBLE-BALLOON ENTEROSCOPY-ASSISTED ENDOSCOPIC RETROGRADE CHOLANGIOPANCREATOGRAPHY (DBE-ERCP): A MULTICENTER REAL-WORLD STUDY

Authors Farina E.¹, Cavallaro F.², Cantù P.², Iori V.³, Rosa-Rizzotto E.⁴, Cavina M.³, Tontini G.E.¹, Sassatelli R.³, Vecchi M.¹, Penagini R.¹, Nandi N.¹, Scaramella L.², Elli L.²

Institutes 1 Foundation IRCCS Ca' Granda Ospedale Maggiore Policlinico, University of Milan, Division of Gastroenterology and Endoscopy, Milan, Italy; 2 Foundation IRCCS Ca' Granda Ospedale Maggiore Policlinico, Division of Gastroenterology and Endoscopy, Milan, Italy; 3 Azienda USL-IRCCS Reggio nell'Emilia, Gastroenterology and Digestive Endoscopy Unit, Reggio Emilia, Italy; 4 St. Anthony Hospital, Azienda Ospedale-Università, Gastroenterology Unit, Padova, Italy

DOI 10.1055/s-0042-1745191

Aims To investigate the effectiveness of DBE-ERCP in patients with different post-surgical anatomical gastrointestinal alterations (SAA).

Methods From May 2013 to October 2021, all consecutive patients undergoing DBE-ERCP in three referral Gastroenterological Centers in Northern Italy were enrolled in the study. Patients were assessed for their medical history, previous surgery, time from previous surgery to DBE-ERCP procedure, success and failure of DBE-ERCP.

Results Sixty-seven DBE-ERCP procedures were performed in 53 enrolled patients (60% men, median age 67 yrs (23-89), 1-3 DBE-ERCP per patients). Reasons for SAA were orthotopic liver transplantation (22%), ulcers (15%), malignancies (44%), complicated cholecystectomy (17%), others (2%). Type of

surgery was Roux-en-Y biliodigestive anastomosis (44%), Roux-en-Y gastrectomy (33%), pancreaticoduodenectomy (17%), Bill gastrectomy (6%). The success rate of DBE was 72%, with an overall DBE-ERCP success rate of 85%. Type of surgery, indications and the timelapse between surgery and DBE-ERCP were not statistically associated with DBE-ERCP success. From 2013 to 2021 the success rate increased significantly (55% vs 79%, $p = 0.067$).

Conclusions DBE-ERCP is a successful procedure in challenging patients with SAA. The time dependent improvement of results indicates the necessity of an adequate training and of centralizing patients in referral centers.

eP339 CONTRIBUTION OF ENDOSCOPIC RETROGRADE CHOLANGIOPANCREATOGRAPHY (ERCP) IN THE MANAGEMENT OF RUPTURED LIVER HYDATIDOSIS CYST IN THE BILE DUCTS

Authors Ferchichi I.¹, Yakoubi M.¹, Ben Abdallah K.¹, Khsiba A.¹, Ben Mohamed A.¹, Mahmoudi M.¹, Medhioub M.¹, Hamzaoui M.L.¹, Azouz M.M.¹

Institute 1 Mohamed Taher Maamouri Hospital of Nabeul, Department of Gastroenterology, Nabeul, Tunisia

DOI 10.1055/s-0042-1745192

Aims Assess the contribution of retrograde cholangiopancreatography (ERCP) in the management of liver hydatidosis cyst in the bile ducts.

Methods This was a retrospective descriptive study collecting patients treated with an ERCP for rupture of the liver hydatidosis cyst in the bile ducts between 2013 and 2021.

Results Eighty-two patients were collected among a total of 1346 ERCP performed (6.9%). The average age was 46.4 years [16-87]. The sex ratio (H/F) was 1.13. Cholangitis was the primary indication of ERCP in 56 cases. Elsewhere, it was performed in 25 patients (or 30.48) with post-operative persistent biliary fistulae and one case of hydatid pancreatitis. The common bile duct was catheterized in 95.16% of cases. Extraction of water-based material was performed in 23 patients. The evolution was marked by the occurrence of acute pancreatitis in three patients. No case of hemorrhage or perforation post-CPRE was noted. A good long-term clinical evolution.

Conclusions Endoscopic treatment of ruptured liver hydatidosis cyst in the bile ducts is an effective therapeutic alternative, with a low rate of immediate complications (3.22%) and a favorable long-term evolution.

eP340V ENDOSCOPIC EXTRACTION OF 80 COMMON BILE DUCT (CBD) STONES

Authors Ferchichi I.¹, Khsiba A.¹, Ben Abdallah K.¹, Mahmoudi M.¹, Ben Mohamed A.¹, Yakoubi M.¹, Medhioub M.¹, Hamzaoui M.L.¹, Azouz M.M.¹

Institute 1 Mohamed Taher Maamouri Hospital of Nabeul, Department of Gastroenterology, Nabeul, Tunisia

DOI 10.1055/s-0042-1745193

Most common bile duct (CBD) stones can be removed with standard techniques using endoscopic retrograde cholangiopancreatography (ERCP), but in some cases CBD stones cannot be extracted using standard techniques, which are termed as "difficult stones." One of the properties of difficult stones is a number of stones > 3. We hereby report the case of an endoscopic extraction of 80 CBD stones. After CBD cannulation, sphincterotomy was performed with an endoscopic sphincterotome placed using a guidewire. Balloon dilation was performed. Then, Existing stones (80 stones) were extracted with an extraction balloon, and biliary clearance was confirmed by injecting radio-contrast

eP341 USE OF METAL STENT FOR BILIARY DRAINAGE PREDICTS SURVIVAL IN A POPULATION OF PATIENTS WITH MALIGNANT BILIARY STRICTURE

Authors Ferreira-Silva J.¹, Medas R.¹, Rodrigues-Pinto E.¹, Pereira P.¹, Macedo G.¹

Institute 1 Centro Hospitalar Universitário de São João, Gastroenterology, Porto, Portugal

DOI 10.1055/s-0042-1745194

Aims Optimal strategy for palliative biliary drainage in malignant hilar biliary strictures (MHS) remains controversial. This study evaluated the use of self-expandable metallic stents (SEMS) and plastic stents (PS) in patients with MHS using.

Methods Patients with inoperable MHSs who underwent endoscopic insertion of SEMS or PS were enrolled. The main outcome measurements were technical and clinical success rates, rate of reintervention for malfunction after successful stent placement, adverse events, and survival duration.

Results A total of 70 pathology-diagnosed patients were enrolled. SEMS were placed in 48 (68.5%) and PS in 22 (31.5%) patients. Unilateral drainage was performed in 44 (62.9%) and bilateral in 32 (37.1%) patients. Technical success was achieved in 19 (86.3%) patients treated with PS and in 47 (97.9%) patients palliated with SEMS. The clinical success rates were 83.3% (40/48) and 61.9% (13/21), respectively ($P = .047$). Median rehospitalization time was 207 days for SEMS and 167 days for PS ($p = 0.047$). Rate of reintervention was 50% (24/48) for SEMS and 50% (11/22) for PS. Median cumulative stent patency was 321 days for SEMS and 285 days for PS. Rate of early complications was 22.9% (11/48) for SEMS and 40.9% (9/22) for PS. Median survival was 438 days for SEMS and 268 days for PS. In multivariate Cox proportional hazard model to assess survival, SEMS placement was a favorable factor (adjusted hazard ratio 0.444, 95% confidence interval, 0.209-0.941; $p = 0.034$).

Conclusions SEMS use for palliation in patients with MHS is associated with higher clinical success rates and better survival in our population.

eP342V PERCUTANEOUS TRANSCYSTIC CHOLANGIOSCOPY-GUIDED ELECTROHYDRAULIC LITHOTRIPSY IN A PATIENT WITH ALTERED SURGICAL ANATOMY

Authors Ferreira-Silva J.¹, Rodrigues-Pinto E.¹, Pereira P.¹, Macedo G.¹

Institute 1 Centro Hospitalar Universitário de São João, Gastroenterology, Porto, Portugal

DOI 10.1055/s-0042-1745195

A 68-year-old man with history of distal gastrectomy underwent urgent cholecystectomy due to acute cholecystitis. Intraoperative choledochoscopy showed an unremovable common bile duct (CBD) stone; a transcystic nelson tube was placed, with subsequent accidental displacement. As percutaneous biliary drainage persisted, percutaneous transcystic cholangioscopy-guided electrohydraulic lithotripsy was performed. Contrast instilled on percutaneous access confirmed persistence of the tract; guidewire passage into the CBD was achieved with contrast and single-operator cholangioscope assistance; cholangioscope passage was possible after dilatation of the proximal tract, with stone visualization in the distal CBD. Electrohydraulic lithotripsy was performed with stone pulverization. Patient remains well one month later.

eP343 BILIARY DRAINAGE IN PATIENTS WITH CHOLANGIOCARCINOMA: A COMPARISON BETWEEN ENDOSCOPIC RETROGRADE CHOLANGIOPANCREATOGRAPHY AND PERCUTANEOUS TRANSHEPATIC APPROACHES

Authors Flaksbaum Moll C.¹, Vera Intriago J.M.¹, Shinin Merchan M.F.¹, Guimarães Hourneaux de Moura E.¹, Silvino do Monte Junior E.¹, Mendonça Proença I.¹, Braga Ribeiro I.¹, Marques Bernardo W.¹, Turiani Hourneaux de Moura D.¹

Institute 1 Hospital das Clínicas, University of São Paulo School of Medicine, Gastroenterology, São Paulo, Brazil

DOI 10.1055/s-0042-1745196

Aims The aim of this systematic review and meta-analysis is to elucidate which is the optimal approach for biliary drainage in patients with cholangiocarcinoma.

Methods Searches were performed on MEDLINE, Central Cochrane, EMBASE, LILACS, and gray literature with no restrictions regarding the year of publication, to identify studies comparing EBD versus PTBD for patients with cholangiocarcinoma and indication of biliary drainage. Evaluated outcomes were: post drainage complications, post-operative complications, technical success, clinical success, seeding metastases, recurrence, overall survival, 5 year survival, number of procedures and hospital length stay.

The risk of bias was assessed by ROBINS-I tool and the quality of evidence by GRADE tool.

Results A total of twenty-three studies (twenty-two retrospective cohorts and one randomized controlled trial) were included with a total of 4072 patients (EBD: $N = 2238$, PTBD: $N = 1834$). The EBD group demonstrated less postoperative complications (RD -0.07, CI -0.12,-0.01; $P = 0.03$) and lower rate of seeding metastases (RD -0.06, CI -0.12,-0.01; $P = 0.01$). The PTBD group showed less post-drainage complications (RD 0.12, CI 0.03,0.21; $P = 0.01$). There was no statistical difference between the groups regarding technical success, clinical success, recurrence, overall survival, 5-year survival, number of procedures and hospital length stay.

Conclusions EBD and PTBD have equivalent technical and clinical success. EBD is superior to PTBD regarding postoperative complications and seeding metastases, whereas PTBD is superior to EBD when it comes to post-drainage complications. Randomized controlled trials should be performed in this field in order to obtain stronger scientific evidence to support the choice between one of the two mentioned approaches.

eP344 THE USE OF ROSE AND TOUCH IMPRINT CYTOLOGY (TIC) FOR THE DIAGNOSIS OF SOLID PANCREATIC TUMORS. A RETROSPECTIVE STUDY

Authors Fragaki M.¹, Nikolaou P.¹, Voudoukis E.¹, Vrontaki M.², Kazamias G.², Chliara E.², Mastorakis E.², Paspatis G.¹

Institutes 1 Venizelio General Hospital, Department of Gastroenterology, Heraklion, Greece; 2 Venizelio General Hospital, Department of Cytopathology, Heraklion, Greece

DOI 10.1055/s-0042-1745197

Aims Endoscopic ultrasound (EUS) combined with the cytological examination, has significantly improved the diagnostic evaluation of patients with solid tumors in the pancreas. ROSE (Rapid On Site Evaluation) has a major role in the immediate and reliable diagnostic approach. The aim of this study was to evaluate the role of ROSE combined with TIC (isolation of blood clots from smears) in solid pancreatic tumors found by EUS.

Methods Retrospective study of patients with solid pancreatic tumors who performed EUS-FNA/B and cytological evaluation from 03/2017 to 06/2021 at a tertiary hospital.

Results 142 patients were included in the study [82 (57,7%) women & 60 (42,3%) men, mean age 70 years (IQR: 16, range: 28-89)]. In 131 patients, a

sample was used for cytological examination (FNA needle was used in 3 patients & FNB needle was used in 129). In 11 patients either a histological or cytological diagnosis was made from another examination (ERCP, material from secondary liver foci / 8 patients) or it was considered impossible to take a sample due to the presence of interfering vascular formation (3 patients). ROSE combined with the TIC made the diagnosis of malignancy or suspected malignancy in 86 (65.7 %) patients. The final diagnosis included malignancy in 91 (69.5 %) patients and the suspicion of malignancy in 22 patients (16.8 %) respectively.

Conclusions This study shows that ROSE combined with the TIC on EUS – FNA/B provides immediate and reliable diagnosis in the evaluation of solid pancreatic tumors.

eP345V EUS-GUIDED TRANSESOPHAGEAL DRAINAGE OF A LIVER ABSCESS WITH A SELF-EXPANDABLE METAL STENT (SEMS) AS RESCUE THERAPY AFTER DOUBLE PIGTAIL STENT (DPS) MISDEPLOYMENT

Authors Fuentes-Valenzuela E.¹, Burqueño-Gomez B.¹, Chavarria C.¹, Sánchez-Delgado L.¹, Maroto-Martín C.¹, Dura Gil M.¹, De Benito Sanz M.¹, Carbajo A.Y.¹, Sanchez-Ocana R.¹, De la Serna Higuera C.¹, Pérez-Miranda M.¹

Institute 1 Hospital Universitario Río Hortega, Gastroenterology Departmenf, Valladolid, Spain

DOI 10.1055/s-0042-1745198

A Klatskin-IIIB cholangiocarcinoma patient with palliative biliary drainage combining a right ERCP stent and a left EUS-guided hepaticogastrostomy developed a subphrenic abscess. EUS-guided 19-G-needle abscess puncture from the distal esophagus was followed by 4-mm balloon dilatation. A 7Fr-5cm DPS was inserted but misdeployed inside the abscess. A SEMS was deployed and 10-mm balloon dilated. An ultrathin gastroscope was passed through the SEMS into the abscess. Under endoscopic view the DPS was repositioned using a grasping forceps.

A CT scan was performed two weeks later, confirming abscess resolution with in-situ SEMS and coaxial DPS. One week later both stents were removed.

eP346 MULTICENTER RETROSPECTIVE INTERNATIONAL STUDY TO EVALUATE OUTCOMES AND SAFETY OF PATIENTS UNDERGOING ENDOSCOPIC RETROGRADE CHOLANGIOPANCREATOGRAPHY COMBINING A SINGLE-USE CHOLANGIOSCOPE AND SINGLE-USE DUODENOSCOPE

Authors Fugazza A.¹, Colombo M.¹, Kahaleh M.², Muthusamy R.³, Bick B.⁴, Laleman W.⁵, Barbera C.⁶, Fabbri C.⁷, Nieto J.⁸, Allehibi A.⁹, Reddy N.¹⁰, Tyberg A.², Shahid H.², Sarkar A.², Ehrlich D.³, Sherman S.⁴, Binda C.⁷, Ramchandani M.¹⁰, Spadaccini M.¹, Iannone A.¹¹, Anderloni A.¹, Repici A.¹

Institutes 1 Humanitas Research Hospital, Rozzano, Italy; 2 Robert Wood Johnson Medical Center, New Brunswick, United States; 3 University of California Los Angeles Medical Center, Los Angeles, United States; 4 Indiana University Health Medical Center, Indianapolis, United States; 5 University Hospitals Leuven, Leuven, Belgium; 6 Giuseppe Mazzini Hospital, Teramo, Italy; 7 Forlì-Cesena Hospital, Forlì-Cesena, Italy; 8 Baptist Jacksonville, Jacksonville, United States; 9 King Fahad Medical City, Riyadh, Saudi Arabia; 10 Asian Institute of Gastroenterology, Hyderabad, India; 11 University of Bari, Bari, Italy

DOI 10.1055/s-0042-1745199

Aims Duodenoscope-related multidrug-resistant organisms (MDRO) infections raise concerns. The introduction of disposable instruments onto the market has aroused interest, with excellent preliminary results. The aim of this study was to evaluate the performance of single-use duodenoscope in high complexity level ERCP.

Methods This is a multicenter, international, retrospective study from 10 centers of all patients who underwent cholangioscopy or pancreatoscopy using the combination of single-use duodenoscope and single-use cholangioscope. The primary outcome was to evaluate the technical success. Secondary outcomes were: procedural time, rate of cross-over to reusable duodenoscope, AEs rate.

Results A total of 65 patients (26 (40.0 %) female) were included in the study. The technical success rate was 98.5 % (64/65). Procedural time was 76.0 ± 30.4 minutes, cross-over rate was 1.5 %.

In our population only four patients (6.2 %) experienced AEs, namely 2 post ERCP pancreatitis (PEP), 1 cholangitis and 1 bleeding.

The performance of the single-use duodenoscope was classified by the operators as: satisfied and very satisfied in 83.1 % (54/65) of the cases whereas a score lower than sufficient was reported in only one procedure.

Conclusions Single-use duodenoscope is effective, reliable and safe even in technically challenging procedures with a non-inferiority to reusable duodenoscope that makes these devices a viable alternative to standard equipment

eP347 ENDOSCOPIC ULTRASOUND-GUIDED BILIARY DRAINAGE VERSUS PERCUTANEOUS TRANSHEPATIC CHOLANGIOGRAPHY, SYSTEMATIC REVIEW

Authors Gadour E.¹, Hassan Z.²

Institutes 1 University Hospitals of Morecambe Bay NHS Foundation Trust, Gastroenterology, Lancaster, United Kingdom; 2 Stockport Hospitals NHS Foundation Trust, Medicine, Manchester, United Kingdom

DOI 10.1055/s-0042-1745200

Aims Percutaneous transhepatic cholangiography (PTC) is a diagnostic and therapeutic procedure. Endoscopic ultrasound-guided biliary drainage (EUS–BD) is a novel technique that allows biliary drainage by echoendoscopy and fluoroscopy using a stent from the biliary tree to the gastrointestinal tract. The present study examined the technical aspects and outcomes of these different approaches to biliary drainage.

Methods A search of different databases, including PubMed, Embase, clinicaltrials.gov, Cochrane Library, Scopus, and Google Scholar, was performed according to the guidelines for Preferred Reporting Items for Systematic reviews and Meta-Analyses to obtain studies comparing percutaneous transhepatic biliary drainage (PTBD) and EUS–BD.

Results Six studies that fulfilled the inclusion criteria, PTBD patients underwent significantly more reinterventions than EUS–BD patients (4.9 vs. 1.3), experienced more postprocedure pain (4.1 vs. 1.9), and had more late adverse events (53.8 % vs. 6.6 %). There was a significant reduction in total bilirubin in both groups (16.4 to 3.3 and 17.2–3.8 for EUS–BD and PTBD, respectively, $P=0.002$) at the 7-day follow-up. There were no significant differences observed for complication rates between PTBD and EUS–BD (3.3 vs. 3.8). PTBD was associated with a higher adverse event rate than EUS–BD in all procedures, including reinterventions (80.4 % vs. 15.7 %, respectively) and a higher index procedure (39.2 % vs. 18.2 %, respectively).

Conclusions The findings of the present systemic review revealed that EUS–BD is linked with a higher rate of effective biliary drainage and manageable procedure-related adverse event profile compared with PTBD. These findings highlight the evidence for successful EUS–BD implementation.

eP348V EUS GUIDED COIL EMBOLIZATION FOR SAFE AND EFFECTIVE TREATMENT OF A LARGE SPLENIC ARTERY PSEUDOANEURYSM

Authors Gadhikar H.¹, Gandhi A.¹, Ansari J.¹, Raina H.¹, Nikumbh T.¹, Bapaye A.¹

Institute 1 Deenanath Mangeshkar Hospital and Research Centre, Shivanand Desai Centre for Digestive Disorders, Pune, India

DOI 10.1055/s-0042-1745201

34-y-male,CCP; Presentation–on-off melena for 3 weeks;symptomatic anemia requiring blood transfusions. EGD–failed bleed localization;CECT–large(40mm) splenic artery pseudoaneurysm(SAA) + adjacent peri-pancreatic fluid collection(PFC). Multi-disciplinary decision–EUS guided coil embolization planned. Procedure–left lateral; propofol sedation;prophylactic ceftriaxone;Linear EUS–SAA with surrounding PFC,trans-gastric puncture using 19G needle without stylet under doppler control–three coils (10mm,8mm,5mm) deployed, Doppler-confirmed complete flow obliteration. Ultrasound Doppler after 48hours–complete obliteration of SAA flow.Oral diet resumed after 24 hours.No further bleed. Hemoglobin–stable;No further need of transfusions.Discharged 3 days later.Asymptomatic at 3-month follow up. This minimally invasive approach can be a suitable alternative to more invasive interventional radiological/surgical approach.

eP349 SAFETY AND EFFICACY OF ENDOSCOPIC ULTRASOUND GUIDED LIVER BIOPSY (EUS-LB): AN INITIAL EXPERIENCE FROM TERTIARY CARE CENTER IN INDIA

Authors Gadhikar H.¹, Gandhi A.¹, Palnitkar S.¹, Bhagwat S.¹, Biradar S.², Ansari J.¹, Raina H.¹, Pujari R.¹, Bapaye H.³, Bapaye A.¹

Institutes 1 Deenanath Mangeshkar Hospital and Research Centre, Shivanand Desai Centre for Digestive Disorders, Pune, India; 2 Deenanath Mangeshkar Hospital and Research Centre, Department of Pathology, Pune, India; 3 Byramjee Jeejeebhoy Govt. Medical College, Pune, India
DOI 10.1055/s-0042-1745202

Aims Liver biopsy(LB) – gold standard for evaluation of liver disorders. Traditional techniques–percutaneous(PCLB)/trans-jugular(TJLB)–inherent limitations/risks. TJLB-preferred in coagulopathy, expensive with limited availability. Endoscopic ultrasound guided liver biopsy(EUS-LB)–recently described, promising results. Study evaluates safety and efficacy of EUS-LB in undiagnosed liver disorders.

Methods Retrospective analysis of prospectively maintained database. Inclusions–EUS-LB for evaluation of undiagnosed liver diseases; Exclusions–EUS-LB for mass lesions. Propofol sedation;19G FNB needle; Left lobe targeted; 1 / 2 passes under EUS-Doppler guidance; < 5 to-and-fro movements during each pass;dry heparin technique. Parameters evaluated–Total specimen length(TSL), complete portal triads(CPT), diagnostic yield, adverse events(AEs).

Results Study period–June–November2021. N = 13;M:F–6:7;mean age–46.5(SD ± 15.4)years. Perceived risk of bleed, ascites or concomitant evaluation of obstructive biliary pathology preferred for EUS-LB. Clinico-radiological profile:pain–3,jaundice–6,fever–1,pruritus–2; coagulopathy–7/13;esophageal varices–4(Low risk–2;High risk–2). Ascites–6/13(46.1 %); splenomegaly–5/13(38.4 %); Mean PVdiameter–11.5(9–13.3)mm; HV flow–patent in 100 %. Technical success–13/13(100 %). FNB target–segment 2–9 (w/o esophageal varices);segment 3– 4(varices). Single pass–5(38.5 %),two passes–8(61.5 %). Concomitant band ligation–2. Diagnostic yield–100 %(13/13;AIH–4, PSC–3,AIH-PSC overlap–1,NASH–1,cirrhotic nodules–1,chronic cholangiopathy–1,chronic hepatitis–1,normal–1).Mean CPT–8.8(SD ± 2.03);mean TSL–9.3mm(SD ± 2.86);AE–minor bleed–1(7.6 %; managed conservatively); pain–none; analgesic requirement–nil. Hospitalization–out-patient–5,day-care–5,in-patient–3.

Conclusions EUS-LB is safe and effective for liver sampling during EUS evaluation within diagnostic algorithms for liver diseases; high diagnostic yield. Concomitant evaluation of coexisting extrahepatic biliary pathology, portal hypertension, and variceal endotherapy can be effectively performed during same procedure. Larger prospective comparative studies recommended.

eP350 EFFICACY AND SAFETY OF DIGITAL SINGLE-OPERATOR CHOLANGIOPANCREATOSCOPY IN ELDERLY PATIENTS IN A TERTIARY REFERRAL CENTER

Authors Gesualdo M.¹, Sacco M.¹, Dall'Amico E.¹, Cravero F.¹, Staiano M.T.¹, Fimiano F.¹, Mauriello A.¹, Castellano F.¹, De Angelis C.G.¹

Institute 1 AOU Città della Salute e della Scienza, University of Turin, Division of Gastroenterology, Endoscopy Unit, Turin, Italy
DOI 10.1055/s-0042-1745203

Aims Digital single-operator cholangioscopy (DSOC) became a key element in diagnosis and treatment of pancreato-biliary diseases, as difficult lithiasis or indeterminate strictures. Data about safety and efficacy of DSOC in patients older than 70 years are scanty; aim of this study is to assess safety and efficacy of DSOC in this population.

Methods All patients underwent DSOC in our tertiary referral center in Turin from January 2016 to October 2021 were retrospectively analyzed, extracting data from a prospective collected database.

We divided our cohort in two groups, group A (< 70 years) and group B (≥ 70 years), comparing demographic and clinical data, technical success and complications rates with T-Student test or Fisher's exact test where indicated.

Results 111 procedures were performed in 88 patients, 44 in each group; mean follow up was 12 ± 14.9 months. Comorbidity rate, number of previous ERCP and indication for DSOC were comparable among groups (Table 1).

Technical success (the successful insertion of cholangioscope with the visualization of target) was similar among groups and was achieved in 55 procedures in group A (95 %) and in 56 procedures in group B (100 %, p 0.24). Six patients in group A (14 %) and seven patients in group B (16 %, p > 0.99) experienced respectively 6 and 9 adverse events (10 % vs 17 %, p 0.41). Cholangitis was the most common adverse event in both groups. All adverse events were managed medically and/or endoscopically.

► Table 1

	Group A (n = 44)	Group B (n = 44)	p
Mean age, years ± SD	59.1 ± 9.8	78.1 ± 5.7	<0.001
Number of previous ERCP, mean ± SD	1.2 ± 1.25	1.4 ± 1.18	0.35
Patients with comorbidities, n (%)	23 (52 %)	29 (66 %)	0.19
Indication (Stricture/Lithiasis/Other), n (%)	15/23/5 (35 % – 53 % – 5 %)	19/20/6 (42 % – 45 % – 13 %)	0.43

Conclusions DSOC in elderly patients showed efficacy and safety profile comparable with those of younger patients.

eP351 RISK FACTORS ASSOCIATED WITH POST-ERCP PANCREATITIS – EXPERIENCE OF A HIGH-VOLUME ENDOSCOPIC CENTER

Authors Gröhl K.¹, Nagl S.¹, Schnoy E.¹, Messmann H.¹, Ebigo A.¹

Institute 1 University hospital in Augsburg, Gastroenterology, Augsburg, Germany
DOI 10.1055/s-0042-1745204

Aims The rate of post-ERCP pancreatitis (PEP) is about 3-10 %. The aim of this study was to analyze the risk of pancreatitis in a training situation of ERCP. In addition, other predisposing factors associated with a higher risk of PEP were assessed.

Methods In a retrospective single-center cohort study, 784 consecutively examined patients who underwent ERCP between April 2020 and July 2021 at the University Hospital Augsburg were included. Fellows and trainees (ERCP < 1000) were supervised by an experienced endoscopist (ERCP > 1000). All patients received a standardized PEP-prophylaxis with NSAIDs and hydration.

Results The frequency of PEP was 3.13 % (n = 13) in non-native and 10.3 % (n = 38; p < 0.01) in native papilla, respectively. In a multivariate analysis, age, precut papillotomy, number of cannulation attempts, amount of contrast agent and overall treatment duration increased the risk of PEP (p < 0.01). However, supervised ERCP in a training setting, gender and type of papilla were not associated with an increase in PEP. Malignant indications had a significantly (p < 0.05) lower rate of PEP.

Conclusions We confirm according to other publications that difficult and longer procedures, as well as native papilla, younger age, precut papillotomy and amount of contrast agent is associated with higher risk for PEP. However, in our unit ERCP in a supervised training setting was not associated with increased PEP.

eP352 EXPERIENCE WITH THE USE OF SINGLE-USE EXALT D DUODENOSCOPE IN DAILY PRACTICE IN A TERTIARY HOSPITAL

Authors Guilabert L.¹, Martínez-Moreno B.¹, Muñoz R.¹, Ruiz F.¹, Compañy L.¹, Martínez J.¹, Mangas-Sanjuán C.¹, Aparicio J.R.¹

Institute 1 Hospital General Universitario de Alicante, Unidad de Endoscopias (Servicio Digestivo), Alicante, Spain

DOI 10.1055/s-0042-1745205

Aims Endogenous multidrug-resistant (MDR) infections are associated with the use of contaminated duodenoscopes. Disposable duodenoscopes can prevent them. Our aim is to evaluate the functionality of the EXALT D single-use duodenoscope in daily practice.

Methods Prospective study from October 2020 to July 2021 of all ERCPs performed in our hospital.

Results Out of 357 ERCPs performed, EXALT was used in 15 (4.2 %) ERCPs of 14 patients (10 men; 65.5 (12.3) years).

Indications for EXALT were: recent liver transplant 9 (60 %), COVID 1 (6.7 %), previous MDR infection 1 (6.7 %), neoplastic obstructive jaundice 3 (20 %), active oncological treatment 1 (6.7 %). In all cases the passage to the papilla was easy in a mean (SD) of 73.3 (27.5) seconds. Cannulation was achieved in 14/15 (93.3 %), being necessary to perform EUS-guided RV in the remaining patient. Spyglass was performed in 4 patients without difficulty. Image quality was good in 93.3 % and suboptimal in 1 case due to image failure in one of the duodenoscopes that did not prevent completion of the procedure. There were no differences between ERCP performed with EXALT and conventional duodenoscope in cannulation success, time to cannulation, passage of the guidewire to the pancreas, acute pancreatitis, pancreatic prosthesis or need for rendezvous. 4 MR pseudomonas infections occurred with a conventional duodenoscope. All cases were associated with one of the two conventional duodenoscopes available, and contamination of the duodenoscope persisted despite repeated washings.

Conclusions The EXALT single-use duodenoscope is a real alternative to conventional duodenoscopes and eliminates the risk of endogenous infection associated with these endoscopes.

eP354 TRANSPHEPATIC CHOLANGIOSCOPY-GUIDED ELECTROHYDRAULIC LITHOTRIPSY FOR LARGE COMMON BILE DUCT STONE AND ANTEGRADE DUCTAL CLEARANCE IN A PATIENT WITH DIFFICULT TRANSPAPILLARY ACCESS

Authors Hassan S.M.¹, Hussain M.², Yousuf M.M.², Dogar A.W.³, Ullah A.¹, Bhatti R.B.¹

Institutes 1 Pir Abdul Qadir Shah Jeelani Institute of Medical Sciences, Department of Gastroenterology Hepatology and Nutrition (DGHAN), Gambat, Pakistan; 2 Pir Abdul Qadir Shah Jeelani Institute of Medical Sciences, Department of Interventional Radiology, Gambat, Pakistan; 3 Pir Abdul Qadir Shah Jeelani Institute of Medical Sciences, Department of Hepatopancreatobiliary Surgery and Organ Transplantation, Gambat, Pakistan

DOI 10.1055/s-0042-1745207

Aims We are reporting an innovative approach of managing large common bile duct stone through transhepatic route in a patient with inaccessible transpapillary cannulation.

Methods Care report: A 50 years female with abdominal pain, jaundice, and a large CBD stone on imaging underwent duodenoscopy which revealed a large periampullary diverticulum filled with semi-solid food particles. Ampulla was completely buried in the diverticula and could not be located so percutaneous transhepatic drainage (PTBD) was performed. Percutaneous transhepatic cholangioscopy (PTHC) was performed after 2 weeks through a mature bilio-cutaneous fistula under sedation in the prone position. A novel cholangioscope was inserted after replacing the PTBD catheter with an 11 French sheath and electrohydraulic lithotripsy (EHL) was performed and satisfactory fragmentation was achieved after 600 shocks. The CBD clearance was achieved after performing antegrade sphincteroplasty and extractor balloon sweeps.

Results In our case transpapillary approach was not possible so opted for PTHC instead of surgery. As the track was already 2 weeks mature so 11 French sheath was easily passed followed by easy entry of cholangioscope. The stone was easily fragmented after 600 shocks at low energy and frequency. Antegrade sphincteroplasty and balloon sweeps were also easy as was the occlusion cholangiogram. The only drawback of this technique is that intrahepatic ducts balloon sweeps require a conventional retrograde approach and increase the time of the procedure.

Conclusions This case signifies that transhepatic cholangioscopy guided EHL is a viable, safe, and effective therapeutic modality in eligible patients.

eP355 IMPACT OF PROPHYLACTIC STENT INSERTION INTO THE COMMON BILE DUCT DURING ERCP ON BILIARY COMPLICATION RATE PRIOR CHE: A SINGLE-CENTER RETROSPECTIVE ANALYSIS

Authors Herner A.¹, Wiesner J.R.¹, Nennstiel S.C.¹, Abdelhafez M.², Schlag C.¹

Institutes 1 Universitätsspital Zürich, Zürich, Switzerland; 2 Technische Universität München, München, Germany

DOI 10.1055/s-0042-1745208

Aims ERC with stone removal out of the CBD is generally followed by CHE. Recurrent biliary complications prior CHE can occur and thus immediate CHE should be aimed as recommended in current guidelines. However, in clinical practice CHE is still often postponed. In this scenario prophylactic biliary stenting until CHE might be beneficial.

We evaluated whether stent insertion into the common bile duct has an impact on the rate of biliary complications prior to CHE.

Methods We retrospectively screened our ERC-database from December 2014 until January 2020 and identified patients with complete stone-removal by ERC prior CHE. Patients with and without prophylactic biliary stent placement were divided in two groups and analyzed regarding complication rate.

Results In total we included 136 patients with an age of 61 ± 16 years. The stent group consisted out of 97 and the non-stenting group out of 39 patients. The mean time until CHE differed not significantly between two groups (60 ± 67 vs. 146 ± 356 days, p = 0.94). Biliary complication rate (obstruction, cholangitis, pancreatitis) was not significantly different between the stent-group and non-stent-group (6.2 % vs. 10.0 % p = 0.47). In the stent-group, the second ERC was performed 37 ± 28 days after CHE. Despite the reported negative fluorogram in the first ERC, in 31 out of 97 (32 %) patients remaining stones could be detected and extracted during the second ERC.

Conclusions Prophylactic CBD stenting prior postponed CHE shows no advantage regarding biliary complications. However, incomplete stone removal during initial ERC can occur and a second ERC post CHE could be beneficial.

eP356 ENDOSCOPIC RETROGRADE CHOLANGIO-PANCREATOGRAPHY IN CENTENARIANS

Authors Hisai H.¹, Sakurai T.¹, Koshiba Y.¹, Sakano H.¹, Watanabe D.¹

Institute 1 Japanese Red Cross Date Hospital, Department of Gastroenterology, Date, Japan

DOI 10.1055/s-0042-1745209

Aims Endoscopic retrograde cholangiopancreatography (ERCP) is effective in the diagnosis and treatment of various pancreaticobiliary diseases. However, no studies have been available concerning the feasibility, efficacy, and safety of ERCP in centenarians.

Methods Between January 2017 and November 2021, a total of 1478 ERCP procedures were performed at our institution. Retrospective data of ERCPs were analyzed to evaluate the effectiveness and safety in patients aged 100 years and older. Altogether 15 ERCPs (2-6 per patient) were attempted in 5 pts (4 women; mean age, 100 years; range 100-102 years). A diagnosis and severity of ERCP complications were made according to "a lexicon for endoscopic adverse events" (GIE 2010).

Results All patients had one or more concomitant diseases and one was bedridden. Therapeutic procedures were indicated in all explorations. The first indications for ERCP were acute cholangitis due to choledocholithiasis in 4 patients and metal stent obstruction for periampullary carcinoma in one. Initial biliary cannulation was unsuccessful in one patient and was successful the next day followed by needle knife papillotomy. One out of 15 explorations, ERCP was unsuccessful in one owing to duodenal stenosis of periampullary carcinoma, and EUS-guided hepaticogastrostomy was performed following duodenal stent placement. The complications were as follows: 1) hypertension in 9 explorations (60%), 2) mild perforation in one, and 3) immediate bleeding in one. There were no pancreatitis, hemorrhage, or mortality related to the procedure.

Conclusions ERCP is a safe and effective procedure with a low complication rate in centenarians.

eP357 ARE BIOMARKERS IN PANCREATIC JUICE USEFUL TO DIFFERENTIATE BETWEEN CHRONIC PANCREATITIS AND IPMN WITH MAIN DUCT INVOLVEMENT?

Authors Hoogenboom S.A.¹, Gorris M.¹, de Maaker M.J.², Halfwerk J.², Lekkerkerker S.¹, Wielenga M.¹, Besselink M.³, van Hooft J.⁴, Dijk F.²

Institutes 1 Amsterdam UMC, Department of Gastroenterology and hepatology, Amsterdam, Netherlands; 2 Amsterdam UMC, Department of Pathology, Amsterdam, Netherlands; 3 Amsterdam UMC, Department of Surgery, Amsterdam, Netherlands; 4 Leiden University Medical Center, Department of Gastroenterology and hepatology, Leiden, Netherlands
DOI 10.1055/s-0042-1745210

Aims In patients with main pancreatic duct (MPD) dilation, differentiation between chronic pancreatitis (CP) and main-duct or mixed-type intraductal papillary mucinous neoplasia (IPMN) can be challenging. The aim of this study was to evaluate if biomarkers in pancreatic juice, including CEA, glucose and KRAS-mutations, can aid in the differentiation between CP and IPMN with MPD involvement.

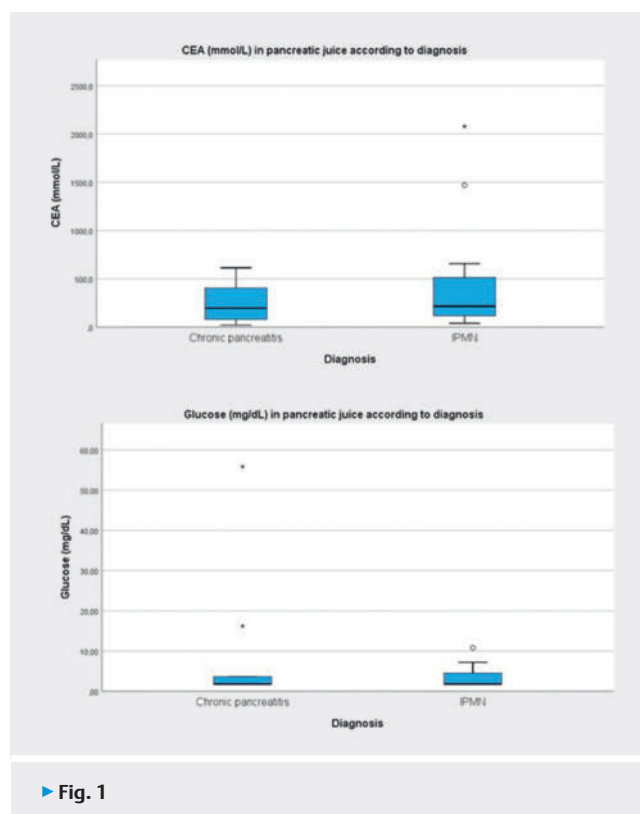
Methods A single center pilot study with a post-hoc analysis was conducted in a prospective biobank of pancreatic juice samples from patients with either CP or IPMN with MPD involvement. All patients underwent pancreatic surgery between 2014 – 2020 and pancreatic juice was collected during surgery. CEA, glucose and mutations in KRAS were determined and compared between CP- and IPMN-samples.

Results Pancreatic juice samples were collected from 13 patients with CP and 29 patients with IPMN. KRAS-mutations were present in 9/12 CP- and 25/25 of

IPMN patients ($p = 0.028$). Median CEA (mmol/L) in pancreatic juice from CP patients ($n = 8$) was 197.2 (IQR 388.3) and 209.0 (IQR 2039.8) in patients with IPMN ($n = 15$, $p = 0.466$). Median glucose (mg/dL) in CP patients ($n = 9$) was 1.8 (IQR 1.35) and 2.7 (IQR 4.1) in patients with IPMN ($n = 15$, $p = 0.815$).

► Table 1

Baseline characteristics	IPMN (n = 29)	Chronic pancreatitis (n = 13)
Male, n (%)	18 (62.1)	8 (61.5)
Age, mean (SD)	69.0 (7.2)	55.1 (8.5)
Diameter pancreatic duct (mm), mean (SD)	10.3 (3.9)	7.3 (2.6)



► Fig. 1

Conclusions This pilot study could not confirm an added value of CEA and glucose in pancreatic juice to differentiate between CP and IPMN. Although the presence of a KRAS-mutation does not contribute to the discrimination between CP and IPMN, the absence of a KRAS mutations may be indicative for a chronic inflammatory cause of pancreatic duct dilation.

eP358 ENDOSCOPIC TREATMENT OF LIVER HYDATID CYSTS WITH INTRA BILIARY RUPTURE

Authors Rami S.¹, Elmqaddem O.¹, Adamou F.¹, Amri F.¹, Nasiri M.¹, Zazour A.¹, Khannoussi W.¹, Kharrasse G.¹, Ismaili Z.¹

Institute 1 Department of Hepato-Gastroenterology, CHU Mohammed VI Oujda. Morocco Research Laboratory of Digestive System Diseases, Faculty of Medicine and Pharmacy of Oujda, Oujda, Morocco

DOI 10.1055/s-0042-1745211

Aims Study the contribution of ERCP in the management of liver hydatid cysts with intrabiliary rupture.

Methods Retrospective study conducted in the hepato-gastroenterology department between January 2018 and November 2021 including 23 cases of intrabiliary rupture of HCL who underwent endoscopic retrograde cholangiopancreatography (ERCP) and endoscopic biliary sphincterotomy (EBS).

Results During period study, 905 ERCP were performed, intrabiliary rupture of HCL was indicated in 23 cases, i.e. 2.5 % of indications for ERCP in our series, with a sex ratio M/F: 0,7. Clinical symptomatology was dominated by acute cholangitis in 74 % of cases.

All patients had cytolytic and/or biological cholestasis. Abdominal ultrasound and abdominal CT showed bile duct dilatation in 74 %, the presence of hydatid material in the common bile duct in 48 % of patients. In ERCP opacification: a lacunar images in CBD were in 52 % of cases. EBS was performed in all patients, with extraction of hydatid material by balloon in 13 cases and by Dormia basket in one case.

The outcome was favorable; disappearance of jaundice after an average of 6 to 12 days.

Surgery in post ERCP has been indicated in 9 patients with a good outcome.

Conclusions In our study, endoscopic drainage of intrabiliary rupture of hydatid cysts represents 2.5 % of the indications for ERCP. For this reason, endoscopic sphincterotomy constitutes a therapeutic advance in the biliary complications of hepatic hydatid cyst which is a safe and effective therapy with low morbidity and mortality.

eP359 OUTCOMES AND LIMITATIONS OF EARLY ENDOSCOPIC DRAINAGE OF PANCREATIC AND PERIPANCREATIC NECROTIC COLLECTIONS

Authors Jagielski M.¹, Zieliński M.¹, Piątkowski J.¹, Jackowski M.¹

Institute 1 Collegium Medicum Nicolaus Copernicus University, Department of General, Gastroenterological and Oncological Surgery, Toruń, Poland

DOI 10.1055/s-0042-1745212

Aims Transmural endoscopic drainage is commonly used in the treatment of walled-off pancreatic necrosis in the late phase of acute necrotizing pancreatitis. This study aimed to prospectively evaluate and compare early endoscopic treatment in acute necrotic collections and that in walled-off pancreatic necrosis.

Methods Overall, 184 patients hospitalized for acute pancreatitis and its complications including pancreatic and peripancreatic fluid collections were screened. Overall, 71 patients with acute necrotizing pancreatitis who underwent transmural endoscopic drainage for pancreatic necrotic collections were included. The procedure was performed within 4 weeks of acute necrotizing pancreatitis in 25 (35.21 %) patients (Group 1- acute necrotic collection) and beyond 4 weeks after formation of walled-off necrosis in 46 (64.79 %) patients (Group 2- walled-off pancreatic necrosis).

Results The overall mean (range) age of patients was 49.9 (22–79) years and 59 of them were males. The mean time to active drainage and duration of total treatment was 26.8 and 16.9 days ($P = 0.0001$) and 270.8 and 164.2 days ($P = 0.0001$) in Groups 1 and 2, respectively. The average total number of endoscopic interventions was 9.5 and 4.5 in Groups 1 and 2, respectively ($P = 0.0001$). The clinical success rate, frequency of complications of endoscopic interventions, long-term success rate, and recurrence rate were not significantly different between the groups ($P > 0.05$ for each).

Conclusions Endoscopic treatment is effective and safe in managing early necrotic collections within the first 4 weeks of acute pancreatitis. However, compared with endoscopic intervention in walled-off pancreatic necrosis, more interventions and longer duration of drainage are required.

eP360 ENDOSCOPIC TREATMENT OF PANCREATICO-PLEURAL FISTULAS

Authors Jagielski M.¹, Piątkowski J.¹, Jackowski M.¹

Institute 1 Collegium Medicum Nicolaus Copernicus University, Department of General, Gastroenterological and Oncological Surgery, Toruń, Poland

DOI 10.1055/s-0042-1745213

Aims Assessment of efficacy of various endoscopic techniques in treatment of patients with pancreaticopleural fistula.

Methods Prospective analysis of endoscopic treatment of all consecutive 22 patients with pancreaticopleural fistulas in the course of pancreatitis in years 2018-2021 in the Department of General, Gastroenterological and Oncological Surgery, Collegium Medicum, Nicolaus Copernicus University in Toruń, Poland.

Results In 22 patients (21 males, 1 female; average age 49,52 [30-67] years) with pancreatitis pancreaticopleural fistulas were diagnosed. In 19/22 (86.36 %) patients fistula communicated with left pleural cavity; in 3/22 (13.64 %) patients with right pleural cavity. In all 22 cases drainage of pleural cavity was performed. Chronic pancreatitis was recognized in 14/22 (63.64 %) cases. In 15/22 (68.18 %) patients with pancreaticopleural fistulas symptomatic pancreatic and peripancreatic collections (PPFCs) were diagnosed (11 patients with pseudocyst and 4 patients with walled-off pancreatic necrosis). In 21/22 (95.45 %) cases endoscopic retrograde pancreatography (ERP) was performed, during which the presence of fistula was confirmed. In all 21 patients endoscopic sphincterotomy with stenting of main pancreatic duct was performed (passive transpapillary drainage). In 1/22 (4.55 %) patient active transmural drainage of pancreaticopleural fistula was performed due to inflammatory infiltration of peripapillary area preventing performance of ERP. Additionally, in all 15 patients transmural endoscopic drainage of PPFCs was performed. Clinical success was achieved in 21/22 (95.45 %) cases. Total endotherapy period was average 191 (88-712) days. Long-term success in endoscopic treatment of pancreaticopleural fistulas was stated in 19/22 (86.36 %) patients.

Conclusions Endoscopic treatment of post-inflammatory pancreaticopleural fistulas is an effective method of treatment.

eP361 THE ROLE OF ENDOSCOPIC ULTRASOUND-GUIDED TRANSMURAL APPROACH IN THE MANAGEMENT OF BILIARY OBSTRUCTIONS

Authors Jagielski M.¹, Zieliński M.¹, Piątkowski J.¹, Jackowski M.¹

Institute 1 Collegium Medicum Nicolaus Copernicus University, Department of General, Gastroenterological and Oncological Surgery, Toruń, Poland

DOI 10.1055/s-0042-1745214

Aims Transpapillary biliary drainage in ERCP is an established method for treatment of patients with benign and malignant biliary obstruction. However, attempts to gain access to the biliary tract through the major duodenal papilla during ERCP have been unsuccessful in some patients. This study aims to determine the role of EUS-guided transmural approach in biliary endotherapy in case of failed ERCP.

Methods A prospective analysis of the treatment outcomes of all 896 patients with obstructive jaundice secondary to biliary obstruction, who underwent endoscopic treatment in the years 2016-2021 at our institution.

Results Effective drainage of bile ducts through the major duodenal papilla during ERCP was achieved in 772/896 (86.16 %) patients with biliary obstruction. In 124/896 (13.84 %) patients (92 males, 32 females; mean age 63.52 [46–89] years) ERCP failed and EUS-guided transmural approach was performed. Benign biliary obstruction was identified in 17/124 (13.71 %) patients; the remaining 107/124 (86.29 %) were diagnosed with malignant biliary obstruction. EUS-guided endoscopic transpapillary biliary tract stenting with transmural access was performed in 21/124 (16.94 %) patients; the remaining 103/124 (83.06 %) required extra-anatomical transmural anastomosis of the bile ducts to the gastrointestinal tract. Technical success was achieved in 121/124 (97.58 %) patients, while clinical success was achieved in 112/124

(90.32%). Complications were reported in 15/124 (12.1 %) patients; with early complications in 12 and late complications in 3.

Conclusions Various methods of EUS-guided transmural access to bile ducts improves endotherapy outcomes of patients with biliary obstruction. Endoscopic transmural access is highly effective and associated with an acceptable number of complications.

eP362 THE ROLE OF ANTIBIOTICS IN ENDOSCOPIC TRANSMURAL DRAINAGE OF POST-INFLAMMATORY PANCREATIC AND PERIPANCREATIC FLUID COLLECTIONS

Authors Jagielski M.¹, Kupczyk W.¹, Piątkowski J.¹, Jackowski M.¹

Institute 1 Collegium Medicum Nicolaus Copernicus University, Department of General, Gastroenterological and Oncological Surgery, Toruń, Poland

DOI 10.1055/s-0042-1745215

Aims Assessment of the role of antibiotics in endoscopic transmural drainage of post-inflammatory pancreatic and peripancreatic fluid collections (PPFCS).

Methods Randomized trial covering study group of 62 patients treated endoscopically due to PPFCS in 2020 in our medical center. The first group consisted of patients who were receiving empirical intravenous antibiotic therapy during endotherapy. The second group consisted of patients without antibiotic therapy during endoscopic drainage of PPFCS.

Results 31 patients were included into the first group (walled-off pancreatic necrosis [WOPN]- 51.6 %, pseudocyst-48.4 %) and 31 patients into the second group (WOPN-58.1 %, pseudocyst- 41.9 %) (p = NS). Infection of PPFCS content was stated in 16/31 (51.6 %) patients from the first group and in 14/31 (45.2 %) patients from the second group (p = NS). Average time of active drainage in the first group was 13.0 (6-21) days and in the second group – 14.0 (7-25) days (p = NS). Total number endoscopic procedures on one patients was on average 3.3 (2-5) in the first group and 3.4 (2-7) in the second group (p = NS). Clinical success of endotherapy of PPFCS was stated in 29/31 (93.5 %) patients from the first group and in 30/31 (96.8 %) patients from the second group (p = NS). Complications of endotherapy in the first group were stated in 8/31 (25.8 %) patients and in 10/31 (32.3 %) patients in the second group (p = NS). Long-term success was stated in 26/31 (83.9 %) patients in the first group and in 24/31 (77.4 %) patients in the second group (p = NS).

Conclusions No antibiotic therapy is required in cases of efficient endoscopic transmural drainage of sterile and infected PPFCS.

eP363 PANCREATIC SOLID MASSES: SHOULD WE USE ENDOSCOPIC ULTRASOUND FINE-NEEDLE ASPIRATION WITHOUT RAPID ONSITE EVALUATION?

Authors João M.¹, Brito D.¹, Elvas L.¹, Alves S.¹, Areia M.¹, Saraiva S.¹, Cadime A.T.¹

Institute 1 Portuguese Oncology Institute of Coimbra, Gastroenterology, Coimbra, Portugal

DOI 10.1055/s-0042-1745216

Aims Current ESGE guideline recommends fine-needle aspiration (FNA) and biopsy (FNB) equally for sampling of solid pancreatic masses, however, suggests FNB needles when rapid onsite evaluation (ROSE) is not available. We aimed to compare diagnostic accuracy of cytology, cellblock and both of samples obtained by FNA in the absence of ROSE.

Methods Retrospective cohort study including consecutive patients submitted to EUS-FNA of pancreatic solid lesions at an oncology centre between January/2006 and October(2021). Data were collected from electronic medical reports. Final diagnosis was based on surgical pathology or clinical follow-up. Patients with cytology and cellblock specimen considered 'insufficient for diagnosis' were excluded (n = 12).

Results A total of 177 patients were included [median age: 67 (17-83) years, male:107 (61 %)]. Most lesions were located at the pancreatic head 58 (33 %) and

body 57 (32%). The median size was 32.5 (7.7-103) mm. Most lesions were adenocarcinoma [71 (40 %)] and neuroendocrine tumours [36 (20 %)]. Sensitivity, specificity, positive and negative predictive values and accuracy, for the diagnosis of malignancy were 96 %, 87 %, 99 %, 68 % and 91 % for cytology; 95 %, 77 %, 97 %, 68 % and 87 % for cellblock and 98 %, 87 %, 99 %, 81 % and 93 % for both, respectively. Diagnostic accuracy was higher for a number of passes superior to 3 (93 % vs. 91 %, P = 0.04). No difference was found between needle sizes (P = 0.59).

Conclusions Combined cytological and histological analysis for diagnosing pancreatic solid lesions increases the diagnostic yield of conventional EUS-FNA without ROSE. This combined analysis exceeds the target standard for tissue sampling during EUS-FNA.

eP364 THE ROLE OF THE CHOLANGIOSCOPY-GUIDED BIOPSY IN THE DIAGNOSIS OF INDETERMINATE BILIARY STRICTURES

Authors Karagoyozov P.¹, Zhecheva I.¹, Tishkov I.¹, Draganov K.²

Institutes 1 Acibadem City Clinic Tokuda University Hospital, Interventional Gastroenterology, Sofia, Bulgaria; 2 Acibadem City Clinic Tokuda University Hospital, Clinic of Hepato- Biliary, Pancreatic and General Surgery, Sofia, Bulgaria

DOI 10.1055/s-0042-1745217

Aims The aim is to assess the role of cholangioscopy-guided biopsy in the diagnosis of indeterminate biliary strictures.

Methods Data was collected retrospectively from March 2016 to August 2021. All the patients with indeterminate biliary strictures underwent single-operator cholangioscopy with the SpyGlass DS system. The visual aspect of the stricture was assessed and at least 4 biopsies were taken under direct visual control using the SpyBite forceps.

Results One hundred and eighty patients (N = 180, 111 men, 69 women) with indeterminate biliary strictures underwent peroral cholangioscopy during the study period. The biliary stenosis were classified into three categories based on the type of histology results: 72 malignant lesions, 71 benign lesions, while 37 were inconclusive for malignancy. Final diagnosis was made on the basis of definitive malignant histology, surgical findings, diagnostic laparoscopy with biopsy samples or clinical follow-up of at least 6 months. Among the 71 patients with benign histology the final diagnosis was changed to "malignant" in 50. Among the 37 patients with histology result "inconclusive for malignancy" the final diagnosis was malignant in 35.

Conclusions Despite the significant advancements in the cholangioscopy in recent years, making the procedure easier, more accessible and with very good image quality, further improvement of biopsy technique is needed. The biliary strictures still remain a challenge for the pancreato-biliary endoscopist due to the low sensitivity of the visually guided sampling.

eP365 ENDOSCOPIC ULTRASOUND- GUIDED FINE- NEEDLE BIOPSY USING A NEWLY DESIGNED NEEDLE WITH MULTI-BLADE THREE-PRONG TIP- INITIAL EXPERIENCE

Authors Karagoyozov P.¹, Zhecheva I.¹

Institute 1 Acibadem City Clinic Tokuda University Hospital, Interventional Gastroenterology, Sofia, Bulgaria

DOI 10.1055/s-0042-1745218

Aims To assess the performance of EUS-FNB using a new needle with multi-blade three-prong tip for the histologic diagnosis of lesions, accessible for endoscopic ultrasound-guided biopsy.

Methods Data was collected retrospectively from April 2021 to October 2021. All the patients underwent endoscopic ultrasound with a linear scope (Fujifilm EG-580UT) and fine needle biopsy using a new needle with multi-blade three-prong tip- 22G Trident (Micro-Tech Endoscopy).

Results Forty nine patients were included. Pancreatic ductal adenocarcinoma was proved in 25. Two patients with pancreatic lesions had false negative his-

tology. Gastric cancer after negative forceps biopsy was proved in 2. Metastatic paraesophageal lymph nodes- in 6, mediastinal lymphoma in 2; benign pancreatic lesions (pseudocysts) in 2. Liver metastasis were proved in 2. Gastric, esophageal and sigmoid GISTs were proved in 7, gastric lipoma- in 1. The median number of needle passes was 3,45. No complications were observed during the first 48 hours and after 30 days follow-up. The procedure provided tissue for histologic diagnosis in 95,92 % of cases. Imunochemical analysis was possible in all where needed.

Conclusions Endoscopic ultrasound-guided fine needle biopsy using the new needle with multi-blade three-prong tip is safe and highly effective. Histologic diagnosis is possible in nearly 100 % in all accessible areas.

eP366 ENDOSCOPIC MANAGEMENT OF TUMORS OF MINOR AMPULLA: A MULTICENTER CASE STUDY

Authors Khalyfa A.¹, Ahsan N.², Inam M.³, Ayub K.³

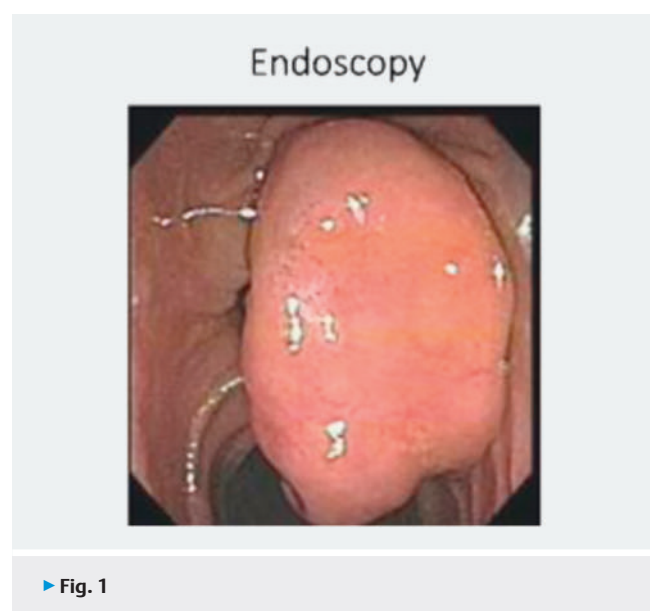
Institutes 1 Franciscan Health Olympia Fields, Olympia Fields, United States; 2 Silver Cross Hospital, New Lenox, United States; 3 Silver Cross Hospital, New Lenox, United States

DOI 10.1055/s-0042-1745219

Aims Tumors arising in the minor ampulla are relatively rare and there is little research available on the management of these tumors. The purpose of this study is to establish the safety and efficacy of endoscopic ampullectomy in the management of minor ampullary tumors.

Methods Patients undergoing ampullectomy for minor ampullary tumor at four hospitals were included in this study over a period of 5 years. Six patients were included in the study and all six patients underwent ERCP for the purpose of minor ampullectomy. MRCP and EUS were performed on all patients prior to ERCP to rule out evidence of invasive disease.

Results The tumors varied in size from 1 cm to 3 cm. Pathology revealed adenoma in three patients, adenoma with high grade dysplasia in one patient, carcinoma in one patient, and carcinoid tumor in one patient. Follow-up for these patients ranged from 2 to 5 years with EGD using duodenoscope at 3 months, at one year and yearly thereafter. One patient had an additional tumor identified at 2 years which was found to be a recurrence of the original adenoma. This patient was treated with repeat ampullectomy with no further evidence of recurrence. The patient with carcinoma had endoscopies every 3 months for a year followed by yearly endoscopy; no recurrence was noted during the 3 years of followup.



Conclusions In our pilot study, we demonstrate that endoscopic ampullectomy appears safe and effective in the management of minor ampullary tumors.

eP367 EQUIVALENT EFFICACY AND SAFETY OF PLASTIC STENTS AND LAMS IN THE TREATMENT OF PERIPANCREATIC FLUID COLLECTION; A PROSPECTIVE STUDY

Authors Khodakaram K.¹, Hedenström P.², Bratlie S.-O.¹, Sadik R.²

Institutes 1 Sahlgrenska University Hospital, Department of Surgery, Gothenburg, Sweden; 2 Sahlgrenska University Hospital, Division of Medical Gastroenterology, Department of Internal Medicine, Gothenburg, Sweden

DOI 10.1055/s-0042-1745220

Aims Endoscopic ultrasound (EUS)-guided transmural drainage using plastic stents (PS) has been routine for the treatment of peripancreatic fluid collection (PFC). Since 2016 lumen-apposing metal stents (LAMS) have been introduced aiming for better draining efficacy. The aim of this long-term prospective study was to compare the efficacy and safety of PS vs LAMS.

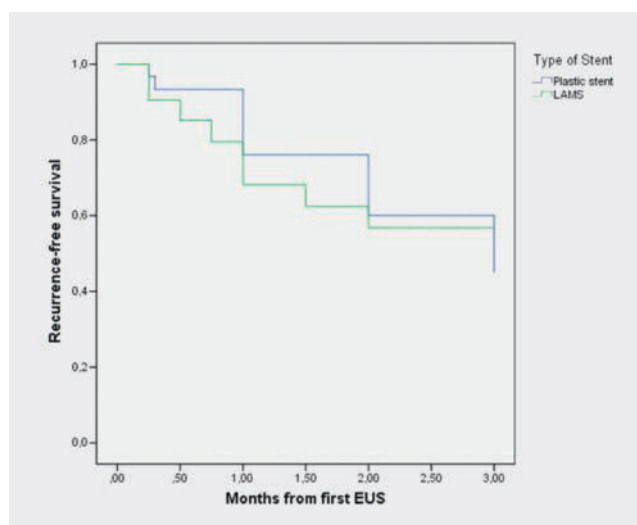
Methods Consecutive patients undergoing EUS-guided drainage between January 2010 and December 2020 were included in a tertiary centre. PS and LAMS were compared regarding technical- and clinical success-rate, adverse event-rate (AE) and the need for re-interventions. Fischer's test, Kaplan-Meier curves and log-rank tests were performed to investigate the clinical efficacy of the two groups.

Results

► Table 1

Clinical Outcome	Plastic Stent (n = 53)	LAMS (n = 36)	p-value
Technical Success	53 (100 %)	36 (100 %)	1.0
Clinical success – PFC resolution on CT (n)	31	20	0.94
Overall adverse Events	7	2	0.24
Hospital Stay days (median/IQR)	13/10	12/20	0.65

A total of 89 patients (median age, 56 years) with PFCs underwent EUS-guided transmural drainage (PS: n = 53; LAMS: n = 36) due to pseudocyst (n = 52) or WON (Walled-off necrosis, n = 37). Both PS and LAMS had high technical success (100 %) and comparable AE and clinical success-rate. Need for re-endoscopy due to treatment failure was 14/53 (26.4 %) in PS and 14/36 (38.8 %) in LAMS, ($p = 0.158$). No significant difference was found in subgroup analysis of WON and pseudocyst. The 20mm LAMS resulted in less need for rehospitalization (13 % vs 43 %, $p = 0.05$) compared with 15mm LAMS.



Conclusions This large, prospective study on EUS-guided drainage of peripancreatic fluid collections showed equivalent safety, technical success, and clinical success comparing plastic stents and LAMS. The larger diameter of LAMS (20mm) however, seems to have a significant better clinical outcome compared with the standard diameter LAMS (15 mm).

eP368 CAN AMLODIPINE AFFECT THE SEVERITY OF PEP?

Authors Kivrakoglu F.¹, Kiliç V.², Koşar K.², Polat Y.H.¹, Bilican G.³, Ersoy O.¹
Institutes 1 Ankara Yıldırım Beyazıt University, Gastroenterology, Ankara, Turkey; 2 University of Health Sciences, Ankara City Hospital, Gastroenterology, Ankara, Turkey; 3 Gazi University, Gastroenterology, Ankara, Turkey
DOI 10.1055/s-0042-1745221

Aims PEP has been reported at a rate of 1-15 % in different studies. The risk of PEP varies depending on the patient, operator and many factors related to the procedure. The effectiveness of pancreatic stenting and NSAIDs has been proven to prevent PEP from occurring. Treatments that reduce the sphincter of Oddi pressure—except nitroglycerin—are not thought to reduce the risk of PEP. Nifedipine, a calcium channel blocker, has been shown not to be beneficial in PEP. In our study, we investigated the contribution of amlodipine, a different class of calcium channel blocker, to the severity of PEP, length of hospital stay, and mortality.

Methods The study included 169 patients who developed PEP out of 1247 ERCP cases performed in our center between February 2019 and March 2021. Among these patients, 10 patients who were started on amlodipine 24-72 hours before the procedure and 10 patients who were not given amlodipine were compared in terms of PEP severity, hospital stay, and mortality. Twelve patients who regularly used amlodipine were excluded from the study.

Results

► Table 1			
	Control Group	Amlodipine Group	p value
Age (mean)/ Gender (Male-Female)	62,70/ 7-3	63,30/ 7-3	
PEP Severity (mild/moderate/severe)	10/0/0	10/0/0	p>0.05
Hospital Stay (mean days)	6,30	5,40	p>0.05
Mortality	0	0	p>0.05

Conclusions The contribution of amlodipine in terms of PEP severity, length of hospital stay and mortality could not be demonstrated. Studies involving more patients should be conducted in terms of its contribution to the prevention of PEP development.

eP369 ENDOSCOPIC ULTRASOUND FINE-NEEDLE ASPIRATION OF PANCREATIC CYSTIC LESIONS, A SINGLE-CENTER EXPERIENCE, AND COMPARISON WITH RESECTION HISTOLOGY

Authors Koller T.¹, Piotrowicz A.¹, Tomáš M.², Gál V.³
Institutes 1 Comenius University Faculty of Medicine, Subdivision Gastroenterology and Hepatology, 5th Department of Medicine, Bratislava, Slovakia; 2 National Oncology Institute, Surgical Oncology, Bratislava, Slovakia; 3 DCP Bratislava Unilabs sro, Pathology, Bratislava, Slovakia
DOI 10.1055/s-0042-1745222

Aims Pancreatic cystic lesions (PCLs) are frequent and some have malignant potential. The decision on performing EUS-FNA and/or surgery remains chal-

lenging. We aimed to evaluate the feasibility and diagnostic yield of EUS FNA, and compare results of EUS-FNA with the resection histology.

Methods A retrospective study in patients undergoing EUS-FNA for PCLs. We assessed morphological risk features: solid component, mural nodule > 5 mm, dilated pancreatic duct > 5mm, lesion size > 4 cm. The mucinous content was defined macroscopically by positive string test/thick mucin and/or by high CEA (> 100 ng/ml) or low glucose (< 2.8 mmol/l). The aspirated material was smeared for cytology.

Results We included 30 patients, an M/F ratio of 20/10, with a median age of 66.5. Seventeen patients had one or more risk features, 13 had none. The macroscopic evaluation of fluid was reported in 23 (76.6 %) patients, it was positive in 14 (Group M) and negative in 9 patients (Group N). The fluid analysis showed a mucinous lesion in all patients in group M, and 4 (44.4 %) in Group N. Ten patients underwent surgery. The sensitivity and specificity of at least one morphological risk feature for diagnosing high-grade neoplasia was 100 % and 42.8 %, for the fluid suggestive of a mucinous lesion 71.4 % and 66.6 %, and cytology showing high-grade neoplasia 0 % and 66.6 %, respectively.

Conclusions Our experience supports safe follow-up in patients without morphological risk features, and EUS-FNA in lesions with a morphological risk feature. Due to the high risk of malignancy, mucinous lesions with a risk feature should be considered for surgery.

eP370 STENT-IN-STENT BI-LOBAR BILIARY STENTING IN MALIGNANT HILAR OBSTRUCTION: EXPERIENCE AND OUTCOMES

Authors Kotha S.¹, Natarajan B.¹, Warner B.¹, Wong T.¹, Berry P.¹
Institute 1 Guy's and St Thomas' Hospital, Department of Gastroenterology, London, United Kingdom
DOI 10.1055/s-0042-1745223

Aims Endoscopic management of hilar malignant strictures is challenging with a high risk of complications. Traditionally, a percutaneous approach has been preferred but endoscopic bilobar drainage either by stent-in-stent or stent-by-stent placement of metal stents can be more beneficial to patients in experienced centres. We aimed to determine the clinical outcomes of bilobar stent-in-stent placement using large cell D-type (LCD, Taewoong Niti-S) stents in patients with malignant hilar strictures.

Methods Retrospective data was collected for patients who underwent stent in stent placement from April 2020 to September 2021 at St Thomas' Hospital.

Results 13 patients had bi-lobar LCD stent placement. Demographics are as shown in Table 1. 9 patients had previous endoscopic plastic stent placement. Technical success was achieved in 11 patients (85 %) and clinical response was seen in 11 (85 %). 2 patients required percutaneous intervention following endoscopy but did not achieve clinical response due to significant burden of liver metastases. 1 patient had stent dysfunction due to tumour overgrowth and was treated successfully with radiofrequency ablation. Post procedure complications noted in 2 patients (1 cholangitis, 1 cholecystitis). 9 patients died after a median follow up of 12 weeks (range 2-50 weeks).

► Table 1 Demographics.

M:F	7:6
Median Age	64 years
Bilirubin pre-procedure (Mean)	147 µmol/L (range 19-544)
Cancer type	Cholangiocarcinoma = 9, HCC = 1, Gall bladder = 1, Colorectal = 1, Lung = 1
Bismuth classification	I = 1, II = 2, III = 6, IV = 4



► Fig. 1

Conclusions Bilobar stent-in-stent placement had good technical and clinical success in our unit. This is a challenging procedure that requires careful planning with imaging and prior multidisciplinary discussion. Selection of appropriate cases allows for further chemotherapy and extended life expectancy without jaundice for patients.

eP371 DIAGNOSTIC YIELD OF ENDOSCOPIC ULTRASOUND IN THE EVALUATION OF UNEXPLAINED COMMON BILE DUCT DILATATION ON CROSS-SECTIONAL IMAGING

Authors Koulali H.¹, Zazour A.¹, Kharrasse G.¹, Ismaili Z.¹, Khannoussi W.¹

Institute 1 Mohammed the First University, Digestive Disease Research Laboratory, The department of Hepato-gastroenterology, Mohammed VI University Hospital, Oujda, Morocco

DOI 10.1055/s-0042-1745224

Aims evaluate the diagnostic performance of EUS unexplained dilated CBD on cross-sectional imaging (CSI)

Methods a retrospective study over 4 years included all patients with unexplained dilated CBD on CSI (CECT, MRCP); patients with congenital dilatation of CBD were excluded.

Results A total of 56 patients were included with a mean age of 59.34 years old, 85.7% were female and 22 patients (39.28%) had a history of cholecystectomy. These patients presented with: acute pancreatitis in 22 cases, abdominal pain in 17, clinical and biological cholestasis in 7, acute cholangitis in 5 and in one case the diagnosis was fortuitous on CT. Laboratory tests were abnormal in 50% of cases with bilirubin value above the upper limit in 19 cases. MRCP was performed in 19 cases and enhanced abdominal CT scan in 37 cases. The mean CBD diameter was 11.82mm on CSI and 10.8mm on EUS. EUS revealed an obstacle in 25 cases (44.46%), 57.14% of them had abnormal liver function tests. No obstacle was found in 24 cases (42.85%), 13 of them had normal liver enzymes, and a normal CBD diameter was noted in 7 cases. CBD stones was the most common finding in 15 cases (60%), followed by suspicion of tissue content in 3 (12%), bilio-pancreatic maljunction in 2 and in 1 case of each: cephalic pancreatic mass, biliary stricture with underlying chronic pancreatitis, mass in CBD, cystic dilatation and a compressive periampullary diverticulum.

Conclusions In 46% of cases EUS allowed to establish the diagnosis and in 57% of cases it was lithiasis.

eP372 FULLY-COVERED SELF-EXPANDABLE METAL STENTS (FCSEMS) AS RESCUE TREATMENT FOR POST-SPHINCTEROTOMY BLEEDING AND BILE DUCT PERFORATION. A CASE SERIES FROM A GREEK REFERRAL CENTRE

Authors Kranidiotis G.¹, Tsoukalas N.¹, Trikola A.¹, Kazamias A.¹, Ellina M.¹, Kotsikoros N.¹, Rodias M.¹, Stefanidis G.¹

Institute 1 Naval Hospital of Athens, Gastroenterology Unit, Athens, Greece

DOI 10.1055/s-0042-1745225

Aims FCSEMS have been used as a «rescue treatment» for several urgent biliary tract conditions. This study evaluated the efficacy, safety, and duration of stenting with FCSEMS in extremely high-risk conditions: post-sphincterotomy bleeding and bile duct perforations.

Methods This is a retrospective study including patients who were treated with FCSEMS placement for post or during ERCP complications: uncontrolled post-sphincterotomy bleeding where hemostasis methods were unsuccessful and perforation after balloon dilation or sphincterotomy. The study was conducted in a Greek referral centre from January 2017 to March 2021 and reported stenting duration, safety of FCSEMS removal, clinical efficacy, complications, and long-term outcome.

Results A total of 1706 ERCP procedures were done during the study period. 14 (0.8%) patients (9 male; mean age 60 ± 4 years) underwent FCSEMS placement, 5 patients due to post-sphincterotomy bleeding and 9 due to perforation (8 after balloon dilation and 2 after sphincterotomy). Median duration of stenting was 19 (14–21) days for the patients with bleeding and 40 (38–60) days for those with perforation. Complete resolution of the complication was achieved in all patients. There were no complications regarding the FCSEMS installation and removal. No recurrence of bleeding or delayed perforation was observed during follow-up (4–12 weeks).

Conclusions In our study, temporary placement of FCSEMS was a very effective rescue treatment for difficult-to-control post-sphincterotomy bleeding and perforation. Duration of stenting was different for each type of condition. The short-term stenting was associated with the absence of early or late complications.

eP373V LATE PRESENTATION OF POST ROAD TRAFFIC ACCIDENT WITH COMPLETE COMMON BILE DUCT TRANSECTION MANAGED BY PTBD GUIDED RENDEVOUS BILIARY DRAINAGE

Authors Kulkarni A.¹, Kulkarni V.¹, Kulkarni M.¹, Deshpande A.¹

Institute 1 Antrang Hospital, Gastroenterology, Kolhapur, India

DOI 10.1055/s-0042-1745226

Post RTA total transection of CBD is a difficult scenario to managed especially when presented late. this leads to healing by fibrosis with no obvious communication with distal CBD leading to persistent biliary leak which increases morbidity and mortality. We managed the case with percutaneous transhepatic approach to gain access to the proximal bile duct followed by creating a false passage by stiff end of a terumo guidewire into the duodenum through the papilla and completing procedure by ERC. She was followed up after 2 months and plastic stent was replaced by retrievable self expandable metal stent.

eP374V ENDOSCOPIC ULTRASOUND(EUS) GUIDED SPLENIC ARTERY PSEUDOANEURYSM COILING IN CHRONIC CALCIFIC PANCREATITIS WITH HEMOSUCCUS PANCREATICUS

Authors Kulkarni A.¹, Kulkarni V.¹, Kulkarni M.¹, Deshpande A.¹

Institute 1 Antrang Hospital, Gastroenterology, Kolhapur, India

DOI 10.1055/s-0042-1745227

AIM: Hemosuccus pancreaticus is serious complication of chronic calcific pancreatitis. Current management is angiographic coil embolization of the pseudoaneurysm. We present case of hemosuccus pancreaticus managed successfully by EUS guided coil embolization followed by glue injection. 40-year-old male, known case of chronic calcific pancreatitis presented with melena and required transfusions. Upper GI endoscopy showed blood oozing through the papilla. Triple phase CT showed CCP, with 1.2 cm pseudoaneurysm arising from splenic artery. On EUS, pseudoaneurysm was identified and punctured by 19-g needle, 10 mm x 14 cm coil was inserted followed by 0.5 cc of N-butylcyanoacrylate glue. Complete obliteration of pseudoaneurysm was confirmed on Doppler. Post procedure patient was hemodynamically stable.

Conclusion: EUS guided coil embolization of bleeding pseudoaneurysm with hemosuccus pancreaticus is a novel and effective modality of treatment.

eP375V SAME SESSION DIAGNOSTIC EUS AND ERCP FOLLOWING GATE PROCEDURE (GASTRIC ACCESS TEMPORARY FOR ENDOSCOPY) IN A PATIENT WITH OBSTRUCTIVE JAUNDICE AND GASTRIC BYPASS ANATOMY

Author Lajin M.¹

Institute 1 SHARP Health Care, Gastroenterology, San Diego, United States

DOI 10.1055/s-0042-1745228

A 64-year-old female with a history of gastric bypass presented with jaundice and a 40-pound weight loss. MRCP showed cholelithiasis without choledocholithiasis, both CBD and PD were dilated. CT with contrast showed no pancreatic mass.

Using EUS, the gastric remnant was distended with contrast. A 2 cm trans-gastric LAMS was deployed. A linear echoendoscope was advanced to the duodenum. There was no pancreatic or ampullary neoplasm, instead, a CBD stone was found.

A duodenoscope was then advanced through LAMS to the duodenum. Biliary sphincterotomy was followed by stone extraction.

Her LFTs normalized and her LAMS was removed after 4 weeks.

eP376V SUCCESSFUL EUS-GUIDED RADIOFREQUENCY ABLATION OF A 9 MM NEUROENDOCRINE TUMOR AT THE HEAD OF THE PANCREAS

Author Lajin M.¹

Institute 1 SHARP Health Care, Gastroenterology, San Diego, United States

DOI 10.1055/s-0042-1745229

A 75-year-old male with a history of CAD, CHF, A-fib, and DM was found to have a 9 mm enhancing tumor at the head of the pancreas. EUS/FNA confirmed a low-grade pancreatic neuroendocrine tumor.

EUS RFA was performed using a 7 mm probe, 20 watts, 3 ablations each for 10 seconds (Video).

EUS/FNA repeated 3.5 months later showed residual PNET.

A second ablation was performed using a 7 mm probe, 20 watts, 4 ablations each for 10 seconds.

Repeated CT a month later confirmed complete ablation. The tumor was replaced by a cyst without any contrast enhancement.

eP377V SALVAGING A MALFUNCTION OF A STENT DEPLOYMENT DURING EUS-GUIDED HEPATICO-GASTROSTOMY

Author Lajin M.¹

Institute 1 SHARP Health Care, Gastroenterology, San Diego, United States

DOI 10.1055/s-0042-1745230

A 61-year-old female with metastatic neuroendocrine carcinoma presented with jaundice.

Abdominal MRI/MRCP showed extensive liver metastases and biliary obstruction causing severe left intrahepatic ductal dilation.

ERCP failed to cannulate the targeted ducts. Under EUS guidance the left intrahepatics were punctured with a 19-g needle and a cholangiogram was obtained. The track was dilated with a 5-F catheter followed by a 6 mm Hurricane balloon.

During Viabil stent (10 mm x 10 cm) deployment, the ePTFE string broke, preventing deployment.

A pediatric endoscope was advanced on the side of the echoendoscope. The string was pulled using forceps resulting in full stent deployment.

eP378V A SEROUS CYSTADENOMA DIAGNOSED USING A CONFOCAL LASER ENDOMICROSCOPY (CLE)

Author Lajin M.¹

Institute 1 SHARP Health Care, Gastroenterology, San Diego, United States

DOI 10.1055/s-0042-1745231

A 31-year-old female was referred for evaluation of a pancreatic cyst.

She is asymptomatic and has never had pancreatitis.

On EUS a 1.8 cm pancreatic cyst was found at the neck of the pancreas with septations.

No mural nodules or solid components. No communication with the pancreatic duct which was not dilated. The pancreatic parenchyma was normal.

A Confocal Laser Endomicroscopy (CLE) probe was passed through a 19-g needle. The cyst was punctured and the CLE showed a Superficial Vascular Network (SVN) which is specific for a serous cystadenoma. The patient was reassured and no further follow-up was needed.

eP379V SALVAGING EUS-GUIDED HEPATICO-GASTROSTOMY UTILIZING “CONTROLLING THE TWO ENDS OF THE WIRE” TECHNIQUE IN THE TREATMENT OF A COMPLEX MALIGNANT HILAR STRICTURE

Author Lajin M.¹

Institute 1 SHARP Health Care, Gastroenterology, San Diego, United States

DOI 10.1055/s-0042-1745232

A 70-year-old male presented with stage 4 cholangiocarcinoma resulting in hilar obstruction. After a failed ERCP, EUS-guided hepaticogastrostomy was attempted.

The Gore stent catheter could not be advanced across the hepaticogastrostomy track. During an attempt to place a PD stent across the track, the wire moved downstream and was manipulated through the papilla. The Echoendoscope was removed and a gastroscope pulled the “exiting” wire end to the mouth. The gastroscope was advanced over the “entering” wire end. The hepaticogastrostomy track was dilated and 2 overlapping Gore stents were deployed. Two biliary stents were then deployed to the right intrahepatic ducts.

eP380V EUS-GUIDED CHOLEDOCHODUODENOSTOMY TO TREAT BILIARY OBSTRUCTION IN A PATIENT WITH LOCALLY ADVANCED PANCREATIC CANCER

Author Lajin M.¹

Institute 1 SHARP Health Care, Gastroenterology, San Diego, United States

DOI 10.1055/s-0042-1745233

A 73-year-old male presented with jaundice. CT showed a dilated CBD and PD. EUS revealed a 3 cm mass invading the portal vein, FNB revealed adenocarcinoma. ERCP failed to cannulate the CBD.

Under EUS guidance the CBD was punctured from the duodenal bulb and a cholangiogram was obtained. Following that, a wire was passed. Over the wire,

a hot LAMS (1 cm x 1 cm) was deployed. The stent was dilated with a balloon and a double pigtail stent was deployed through LAMS.

His jaundice resolved and he did not require any further intervention until he passed away a year later.

eP381 SELF-EXPANDABLE METAL STENT (SEMS) VERSUS LUMEN-APPPOSING METAL STENT (LAMS) FOR EUS-DRAINAGE OF PANCREATIC FLUID COLLECTIONS: RANDOMIZED CLINICAL TRIAL (RCT)

Authors Lera Dos Santos M.E.¹, Proença I.M.¹, Matuguma S.E.¹, Cheng S.¹, De Freitas Junior J.R.¹, Ribeiro I.B.¹, De Moura D.T.H.¹, Guimaraes Hourneaux De Moura E.¹

Institute 1 Hospital das Clínicas da Faculdade de Medicina de São Paulo, Serviço de Endoscopia Gastrointestinal, São Paulo, Brazil

DOI 10.1055/s-0042-1745234

Aims Endoscopic Ultrasound (EUS)-guided drainage is considered the gold standard for the treatment of encapsulated pancreatic collections (EPCs) – pseudocysts and walled-off necrosis (WON) –, presenting the same clinical efficacy as surgical drainage, but fewer complications and less morbidity. Several types of stents have been developed and used for this purpose, however, there is no strong evidence to support which is the best option. The aim of this RCT is to compare the efficacy and safety of the SEMS versus LAMS for EUS-guided drainage of EPCs.

Methods This is a Randomized Clinical Trial phase IIB comparing SEMS versus LAMS regarding efficacy and safety in EUS-guided drainage of EPCs. Technical success, clinical success, radiological success, adverse events, intra-procedure intercurrences, and procedure time were evaluated. A sample size of 42 patients was determined.

	Group				Total		p-value
	LAMS		SEMS		n	%	
	n	%	n	%	n	%	
Migration							
Yes	0	0.00	1	5.00	1	2.78	
No	17	100.00	19	95.00	36	100.00	1.000
Related deaths							
	3	50.00	1	50.00	4	50.00	1.000
Adverse Events							
Migration	0	0.00	1	25.00	1	16.67	
Early bleeding	0	0.00	1	25.00	1	16.67	1.000
Late bleeding	1	50.00	2	50.00	3	50.00	
Recurrence							
Symptomatic	1	50.00	0	0.00	1	20.00	0.400
Asymptomatic	1	50.00	3	100.00	4	80.00	
Technical success							
Yes	17	80.95	21	100.00	38	90.48	0.107
No	4	19.05	0	0.00	4	9.52	
Clinical success							
Yes	18	85.71	20	95.24	38	90.48	0.808
No	4	22.22	1	4.76	5	12.50	
Radiological success (up to 6 months)							
Yes	14	77.78	16	80.00	30	78.95	1.000
No	4	22.22	4	20.00	8	21.05	
Radiological success (6 to 12 months)							
Yes	13	92.86	15	83.33	28	87.50	0.813
No	1	7.14	3	16.67	4	12.50	
Puncture site							
Transgastric	20	95.24	20	95.24	40	95.24	1.000
Transbulbar	1	4.76	1	4.76	2	4.76	
Intra-procedural intercurrences							
Yes	5	23.81	0	0.00	5	11.90	0.048
No	16	76.19	21	100.00	37	88.10	

► Fig. 1

Results There was no difference in technical success, clinical success, radiological success, adverse events, or stent migration rate between the two groups. The procedure time was longer in the LAMS group (mean time 43.81 ± 6.55 min vs

24.43 ± 1.99 min, $p = 0.001$). There were more intra-procedure intercurrences in the LAMS (5) than in the SEMS group (0) ($p = 0.048$).

Conclusions SEMS and LAMS have similar technical success, clinical success, radiological success, and adverse events. However, the SEMS had a shorter procedure time and fewer intra-procedure intercurrences. The choice of which stent is used for EUS-drainage of EPCs must consider the availability and expertise of the service. Both SEMS and LAMS are possible options with similar clinical efficacy and safety profile.

eP382 ENDOSCOPIC ULTRASOUND FINE-NEEDLE BIOPSY VERSUS FINE-NEEDLE ASPIRATION FOR TISSUE SAMPLING OF LYMPH NODES: A SYSTEMATIC REVIEW AND META-ANALYSIS

Authors Facciorusso A.^{1,2}, Crinò S.F.², Gkolfakis P.³, Ramai D.⁴, Lisotti A.⁵, Papanikolaou I.⁶, Mangiavillano B.⁷, Triantafyllou K.⁶, Fusaroli P.⁵

Institutes 1 University of Foggia, Gastroenterology Unit, Department of Surgical and Medical Sciences, Foggia, Italy; 2 The Pancreas Institute, University Hospital of Verona, Department of Medicine, Gastroenterology and Digestive Endoscopy Unit, Verona, Italy; 3 Erasme University Hospital, Department of Gastroenterology, Hepatopancreatology and Digestive Oncology, Brussels, Belgium; 4 University of Utah Health, Salt Lake City, United States; 5 Hospital of Imola, Gastroenterology Unit, Imola, Italy; 6 Medical School, National and Kapodistrian University of Athens, "Attikon" University General Hospital, Hepatogastroenterology Unit, Second Department of Internal Medicine-Propaedeutic, Athens, Greece; 7 Humanitas – Mater Domini, Gastrointestinal Endoscopy Unit, Castellanza, Italy

DOI 10.1055/s-0042-1745235

Aims There is scarce evidence on the comparison between endoscopic ultrasound (EUS) fine-needle biopsy (FNB) and fine-needle aspiration (FNA) of lymph nodes (LNs). Aim of this meta-analysis was to compare the diagnostic performance of these two approaches.

Methods We searched the PubMed/Medline and Embase database through August 2021 and identified 9 studies, of which 4 randomized controlled trials. Primary outcome was diagnostic accuracy. Secondary outcomes were diagnostic sensitivity, specificity, sample adequacy, optimal histological core procurement, number of passes, and adverse events. We performed pairwise meta-analysis through a random effects model and expressed results as odds ratio (OR) or mean difference along with 95% confidence interval (CI).

Results Median age was 67 years and most patients were male in both groups. Diagnostic accuracy was not different between the two approaches (OR 1.31, 95% CI 0.81-2.10; $p = 0.27$). FNB resulted significantly superior to FNA when performed with newer end-cutting needles (OR 1.87, 1.17-3; $p = 0.009$) and in abdominal LNs (OR 2.48, 1.52-4.05; $p < 0.001$). No difference in terms of sample adequacy was observed (OR 1.40, 0.46-4.26; $p = 0.55$) whereas histological core procurement and diagnostic sensitivity were significantly superior with EUS-FNB (OR 6.15, 1.51-25.07 and OR 1.87, 1.27-2.74, respectively). Number of needle passes needed to obtain diagnostic samples was significantly inferior in the FNB group (mean difference -0.54, -0.97 to -0.12; $p = 0.01$). No procedure-related adverse events were observed.

Conclusions Although EUS-FNB could not still be preferred to standard EUS-FNA, newer FNB represent a promising diagnostic tool for LN sampling.

eP383V ANTEGRADE PANCREATOSCOPY VIA PANCREATO-GASTROSTOMY: GUIDEWIRE FRAGMENT EXTRACTION AND TOTAL STENOSIS CONFIRMATION

Authors Luna-Rodriguez D.¹, Fajardo I.², Loras C.², Garcia-Sumalla A.¹, Gornals J.B.¹

Institutes 1 Bellvitge University Hospital, Interventional Endoscopy Unit, Barcelona, Spain; 2 University Hospital Mutua Terrassa, Interventional Endoscopy Unit, Terrassa, Spain

DOI 10.1055/s-0042-1745236

A 52yo man with chronic pancreatitis of unknown origin, with neck stenosis and pancreatic ductal lithiasis. After failure of transpapillary cannulation, a Rendezvous technique is realized. After several tries without success, fragmentation of intrapancreatic guidewire occurs. A transmural drainage (USE-guided pancreatic-gastrostomy) with 2 plastic stents is realized. Then, an antegrade pancreatoscopy via pancreato-gastrostomy (SpyGlass-DSII) is made. Main pancreatic duct dilatation, with no lithiasis but with several parenchymatous calcifications that cause total ductal stenosis. Guidewire fragment identification and retrieval with spy-basket. Another Rendezvous for a transpapillary conversion is made, without success. A third coaxial plastic stent is placed, optimizing the transmural pancreatic drainage

eP384 NEW STEP APPROACH FOR TREATMENT OF LARGE SIZE INFECTED PANCREATIC NECROSIS: PERCUTANEOUS ENDOSCOPIC NECROSECTOMY FOLLOWED BY TRANSLUMINAL DRAINAGE/NECROSECTOMY

Authors Mangiafico S.¹, Bertani H.¹, Pigò F.¹, Lupo M.¹, Grande G.¹, Russo S.¹, Cocca S.¹, Conigliaro R.¹

Institute 1 University Hospital of Modena, Modena, Italy

DOI 10.1055/s-0042-1745237

Aims We report a case series of a new endoscopic approach to treat infected pancreatic necrosis (IPN).

Methods Consecutive patients with large size IPN from stomach into paracolic gutters or the pelvis were prospectively studied from April 2018 to August 2021.

Treatment protocol was radiological percutaneous drainage as first step followed by fully covered metal stent (SEMS) placement in the track of the catheter under fluoroscopic guidance to dilate the track. Percutaneous endoscopic necrosectomy (PEN) was performed 2-4 days later using a flexible endoscope through the percutaneous tract under conscious sedation.

About 2-4 weeks later when, a matured sac was visible, EUS-guided endoscopic transluminal drainage (ETD) with LAMS was performed under general anesthesia.

Control of sepsis with resolution of collection(s) was primary outcome measure.

Results A total of 14 patients (mean age 56 ± 12, 8 males) were included, IPN median size of 18 cm, PEN and ETD timing (after 18 days and 36 days in median). SEMS in PEN were esophageal type 8 cm (8 cases) or 12 cm (6 cases) in length and LAMS in ETD were HotAxios (8 cases), HotSpaxus (3 cases) and NagiStent (3 cases). A median of 2 endoscopic sessions in PEN and ETD were necessary to achieve resolution in all patients, in a median time of 3 weeks. Severe adverse events were reported in 3 cases (2 GI bleeding and 1 case of over inflation)

Conclusions Step up percutaneous and transluminal endoscopic necrosectomy therapy is an effective strategy for large size IPN with combined central and peripheral necrosis.

eP385V SEQUENTIAL INSERTION OF TWO PLASTIC STENTS (STENT-PUSHING-STENT TECHNIQUE) WITH A SINGLE GUIDEWIRE DURING DOUBLE-BALLOON-ERCP IN ROUX-EN-Y HEPATICOJEJUNOSTOMY AFTER LIVER TRANSPLANT

Authors Martínez-Alcalá A.¹, Mönkemüller K.¹

Institute 1 Amedeo University Teaching Hospital, Gastroenterology, Halberstadt, Germany

DOI 10.1055/s-0042-1745238

A 45-year-old patient who had undergone liver transplant for cirrhosis due to primary sclerosing cholangitis presented with jaundice and cholestasis. Because

of PSC the liver transplant was attached to a jejunal loop (hepaticojejunostomy). Therefore, ERCP had to be performed using double-balloon-enteroscopy technique. During DBE-ERCP a tight hepaticojejunostomy stricture type A1 according to Mönkemüller-Jovanovic classification was found and dilated with a CRE-balloon. The two plastic stents were placed immediately, one-after-the-other, using a single 0,035-inch 450 cm long biliary wire (stent-pushing-stent technique). This video shows the technique in detail, which shortens procedure time and is useful when using device-assisted ERCP methods.

eP386V USEFULNESS OF SPYBITE™ BIOPSY FORCEPS FOR GUIDEWIRE PASSAGE IN CRITICAL BILIARY ANASTOMOSIS STRICTURES IN PATIENTS WITH LIVER TRANSPLANTATION

Authors Martínez-Moreno B.¹, Guilabert L.¹, Martínez-Sempere J.¹, Compañy L.¹, Ruiz F.¹, Mangas C.¹, Aparicio J.R.¹

Institute 1 Hospital General Universitario de Alicante, Unidad de Endoscopia, Alicante, Spain

DOI 10.1055/s-0042-1745239

We present a new technique that can help guidewire passage in cases of complete or significant stenosis. Using direct visualization with the Spyglass and the Spybite™ biopsy forceps, repeated biopsies of the anastomosis are taken until the pathway is big enough for the passage of the guidewire. We present 3 cases of patients with liver transplantation and anastomosis stenosis: 1 month after transplantation in 2 cases and one year after in another one, in which this technique allowed us to advance the guidewire through the anastomosis and complete the procedure successfully.

eP387 ENDOSCOPIC ULTRASOUND-GUIDED RADIOFREQUENCY ABLATION FOR PANCREATIC INSULINOMA: EXPERIENCE IN TWO TERTIARY CENTERS

Authors Marx M.¹, Trosic-Ivanisevic T.², Caillol F.¹, Demartines N.³, Schoepfer A.², Pesenti C.¹, Ratone J.-P.¹, Robert M.², Giovannini M.¹, Godat S.²

Institutes 1 Paoli-Calmettes Institute, Gastroenterology, Marseille, France;

2 Centre hospitalier universitaire vaudois, Gastroenterology, Lausanne,

Switzerland; 3 Centre hospitalier universitaire vaudois, Visceral surgery, Lausanne, Switzerland

DOI 10.1055/s-0042-1745240

Aims Insulinoma is the most frequent functional neuroendocrine tumor of the pancreas and preserving surgery its treatment of choice. Endoscopic ultrasound-guided radiofrequency ablation (EUS-RFA) is a novel and promising technique that induces tissue necrosis of localized lesions. This study presents a preliminary clinical experience in treating pancreatic insulinomas < 2 cm by EUS-RFA, focusing on safety and efficacy.

Methods Clinical course of patients with pancreatic insulinoma treated by EUS-RFA at two tertiary referral centers was analyzed.

Results Between November 2017 and December 2020, seven patients were included (6/7 female; mean age 66 years). Lesion size ranged between 8 and 20 mm. EUS-RFA was feasible in all patients (7/7) with immediate hypoglycemia relief after only one single treatment session, 6/7 achieved complete response by cross sectional imaging and remained asymptomatic (median follow up 21 months; range 3–38). Three patients had minor complications. One elderly patient developed a large retrogastric collection 15 days after treatment and died one month after EUS-RFA.

Conclusions Management of pancreatic NETs < 2 cm by EUS-RFA seems effective with an acceptable safety profile. Yet, further evidence focusing on long term survival and recurrence is needed.

eP388V COMBINED ENDOSCOPIC AND SURGICAL MANAGEMENT OF A RIGHT INTRAHEPATIC BILE DUCT INJURY DURING LAPAROSCOPIC CHOLECYSTECTOMY

Authors Mayer P.^{1,2}, Héroin L.^{1,2}, Habersetzer F.^{1,2,3}, Vix M.^{4,5}, Pessaix P.^{6,7,3}, Felli E.^{6,7,3}, Mathis G.^{4,5}

Institutes 1 Hôpitaux Universitaire de Strasbourg, Gastroenterology and Hepatology, Strasbourg, France; 2 IHU de Strasbourg, Digestive endoscopy unit, Strasbourg, France; 3 University of Strasbourg, Inserm U1110, Institute for Viral and Liver Diseases, LabEx HepSYS, Strasbourg, France; 4 Hôpitaux Universitaire de Strasbourg, Visceral and Digestive Surgery, Strasbourg, France; 5 IHU de Strasbourg, Digestive and Endocrine Surgery, Strasbourg, France; 6 Hôpitaux Universitaire de Strasbourg, Hepatobiliary and Pancreatic Surgery, Strasbourg, France; 7 IHU de Strasbourg, Hepatobiliary and Pancreatic Surgery, Strasbourg, France
DOI 10.1055/s-0042-1745241

We report the case of a 70-year-old female who underwent laparoscopic cholecystectomy following cholecystitis. Intraoperative opacification of biliary tract showed a section of the right posterior bile duct. At the same time, an ERCP was performed. The guidewire was introduced inside the right posterior bile ducts laparoscopically. A 7 French-15 cm plastic biliary stent was then placed inside the right posterior bile ducts to act as a stent for the healing of the bile duct. The immediate stent placement could ease the healing but also the calibration of the injured bile duct and thus avoid the occurrence of biliary stenosis.

eP389 DIAGNOSTIC ACCURACY OF DIGITAL SINGLE-OPERATOR CHOLANGIOSCOPY FOR INDETERMINATE BILIARY STRICTURES: AN ITALIAN SINGLE-CENTER EXPERIENCE

Authors Milluzzo S.M.^{1,2}, Tringali A.¹, Perri V.¹, Familiari P.¹, Boskoski I.¹, Ricci R.¹, Costamagna G.¹

Institutes 1 Fondazione Policlinico Universitario A. Gemelli IRCCS – Università Cattolica del Sacro Cuore, Roma, Italy; 2 Fondazione Poliambulanza Istituto Ospedaliero, Brescia, Italy
DOI 10.1055/s-0042-1745242

Aims A precise characterization of indeterminate biliary strictures (IDBS) still represents a major challenge. Digital single-operator cholangioscopy (DSOC) could potentially overcome limits of conventional biopsy and brushing sampling. The aim was to analyze the diagnostic accuracy of visual evaluation and DSOC guided biopsies compared to previous sampling techniques.

Methods Consecutive patients who performed DSOC-guided biopsy after conventional sampling techniques for IDBS during a six-year period were retrospectively evaluated. Final diagnosis was based on histological evaluation of the surgical specimen if available or a clinical follow-up of at least 6 months.

Results Fourteen patients (M:F = 5:9) with a median age of 64 years (range 53-76) were enrolled. Stricture was located at common bile duct in 4 patients (21.4%), common hepatic duct in 4 (28.6%), right hepatic duct in one (7.1%), and hilum in 6 (42.8%). After DSOC, strictures were excluded and/or location changed in 3 patients (additional yield of 21.4%). Intraductal DSOC-guided biopsies were technically successful in all cases, with an adequacy of 92.8% (13/14). No adverse events were recorded. Final diagnosis was benign biliary scar in three cases, primary sclerosing cholangitis in one, Mirizzi's Syndrome in one and cholangiocarcinoma in the remaining cases. Results of the comparison between the diagnostic techniques are shown in Table 1.

► **Table 1** Comparison between diagnostic techniques for indeterminate biliary strictures.

	Conventional sampling	DSOC-guided biopsy	Visual finding
Sensitivity	44.4 %	44.4 %	88.9 %
Specificity	80 %	100 %	80 %
Positive Predictive Value	80 %	100 %	88.9 %
Negative Predictive Value	44.4 %	50 %	80 %
Accuracy	57.1 %	64.3 %	64.3 %

Conclusions Combining the high sensitivity of visual finding with the specificity of direct biopsy sampling, DSOC can improve diagnostic accuracy for IDBS.

eP390 THE BURDEN OF CHOLANGITIS IN PATIENTS WITH CHOLEDOCHOLITHIASIS IN TERMS OF POST-ERCP PANCREATITIS AND PROCEDURE TIME

Authors Moga T.V.¹, Miutescu B.¹, Ratiu I.¹, Foncea C.¹, Fofiu R.¹, Burciu C.¹, Popescu A.¹, Sirli R.¹

Institute 1 University of Medicine and Pharmacy "Victor Babes", Department of Internal Medicine II, Division of Gastroenterology and Hepatology, Center for Advanced Research in Gastroenterology and Hepatology, Timisoara, Romania
DOI 10.1055/s-0042-1745243

Aims Post-ERCP pancreatitis (PEP) is a worrisome and common adverse event of ERCP and is thought to have a multifactorial mechanism. We analyzed if acute cholangitis is a risk factor for PEP and if the procedure time and time to ERCP (TtE) differ in patients with or without acute cholangitis.

Methods We performed a retrospective study that included patients with choledocholithiasis. The indication for ERCP was given by the presence of biliary obstruction or acute cholangitis (classified according to Tokyo 2018 criteria). The development of PEP, time to ERCP (TtE) and procedure duration were assessed between patients with acute cholangitis in comparison with those without.

Results We analyzed 602 consecutive patients (mean age 65.7 ± 15.2 years, 45.7% males). In 61.1% (368/602) the obstruction was caused by choledocholithiasis out of which 38.6% patients (142/368) had acute cholangitis (AC). From the AC subgroup, 14.1% (20/142) patients developed PEP, while 9.3% (21/226) of those without developed PEP (p = 0.2099). Mean procedure time (minutes) was 33.1 ± 12.9 in AC group vs. 31.09 ± 14.8 in non-AC (p = 0.1861), while TtE was lower in the AC group 45.5 ± 39.8 hours vs. 55.3 ± 42.4 hours (p = 0.0278).

Conclusions PEP was not influenced by acute cholangitis in our cohort of patients with choledocholithiasis

eP391 TRANSPANCREATIC BILIARY SPHINCTEROTOMY (TPBS), THE EXPERIENCE OF A GREEK ERCP CENTER

Authors Theopistos V.¹, Moutzoukis M.¹, Moussavere I.¹, Lamouri C.¹, Foussekis F.¹, Psichos N.¹, Katsanos K.¹, Tzampouras N.¹, Christodoulou D.¹

Institute 1 University Hospital of Ioannina, Department of Gastroenterology and Therapeutic Endoscopy, Ioannina, Greece
DOI 10.1055/s-0042-1745244

Aims Transpancreatic biliary sphincterotomy (TPBS) is an advanced cannulation method for accessing common bile duct (CBD) in endoscopic retrograde cholangiopancreatography (ERCP) when CBD cannulation is difficult according

to the European Society of Gastrointestinal Endoscopy (ESGE) guidelines. The effectiveness of this procedure is still unclear. We studied the efficacy of this technique, the possible complications, and the demographic characteristics of our patients.

Methods Our study included 18 patients that underwent ERCP with one wire-guided cannulation (WGC) performed in Ioannina University Hospital between July and November of 2021 (Among 300 ERCP). We studied the demographic characteristics, their indications, the success rate of catheterization, and the prevalence of side effects.

Results 18 patients of which 55 % (n = 10) were women and 45 % (n = 8) men, underwent TPBS-WGC because of difficult biliary access. In terms of indication, 27.7 % (n = 5) was attributed to pancreatic tumor/cancer, 16.6 % (n = 3) cholangiocarcinoma, 38.8 % (n = 7) CBD stone and 16.6 % (n = 3) biliary pancreatitis. Deep bile duct access was achieved in all patients (100%) with this technique. Post-ERCP mild pancreatitis (PEP) developed in one patient (5,6%) and post-ERCP bleeding presented in one patient (5,6%) who was receiving antiplatelet agent. 66.6 % (n = 12) underwent biliary stent placement and 100 % (n = 18) pancreatic stent placement for PEP prophylaxis.

Conclusions TPBS is a useful rescue method in cases of difficult cannulation, accompanied by an acceptable complication rate. Compared to other cannulation techniques, TPBS is a feasible, safe, and relatively inexpensive process. However, no follow-up studies are available for TPBS. Therefore, such studies are needed for its full evaluation.

eP392 CONTRIBUTION OF MACRODILATATION OF THE ODDI SPHINCTER IN THE TREATMENT OF LARGE CHOLEDCOICAL STONES

Authors Mrabti S.¹, Addajou T.¹, Benhamdane A.¹, Sair A.¹, Guelh M.O.¹, Touibi A.¹, Radouane I.¹, Rokhsi S.¹, Iloghmane H.¹, Laaroussi R.¹, Sentissi S.¹, Berrida R.¹, El Koti I.¹, Rouibaa F.¹, Benkirane A.¹, Seddik H.¹

Institute 1 Mohammed V Training Hospital, HEPATO-GASTRO-ENTEROLOGY II, Rabat, Morocco

DOI 10.1055/s-0042-1745245

Aims The objective is to evaluate the effectiveness of sphincteroplasty and to analyze the factors associated with the success of this technique in patients with large bile duct stones.

Methods Descriptive and analytical retrospective study between January 2008 and August 2021, including 51 patients who presented with a large obstructive stone measuring more than 15mm and whose treatment required the use of sphincteroplasty. The success rate was defined by the clearance from the main bile duct. Statistical analysis made by SPSS software version 24.0. Factors associated with the success of endoscopic treatment were done using logistic regression.

Results 51 patients were included, the mean age was 65.37 ± 17.46 years [26-95] with a female predominance in 56.9 % (n = 29). 31.4 % of patients have already been cholecystectomized. Five patients had acute lithiasis cholangitis and one patient had acute lithiasis pancreatitis. The success rate was 96.1 %. The early complication rate was zero. In univariate and multivariate analysis and adjusting for the factors studied (age, sex, antecedents, presence of acute pancreatitis or acute cholangitis, the diameter of the main bile duct, presence of peri-ampullary diverticula, presence of stenosis of the main bile duct), none of these factors did not appear to be associated with the success or failure of the sphincteroplasty.

Conclusions Sphincteroplasty is an effective technique with low morbidity for the endoscopic extraction of large bile duct stones. In our study, none of the factors studied appeared to be associated with the failure or success of macrodilatation of the sphincter of oddi.

eP393 RISK OF POST-ERCP PANCREATITIS AFTER DOUBLE-GUIDEWIRE TECHNIQUE FOR DIFFICULT BILIARY CANNULATION

Authors Myung Y.¹, Han J.¹, Lee S.¹, Han K.j.¹

Institute 1 Catholic Kwandong University International St. Mary's Hospital, Incheon, Korea, Republic of

DOI 10.1055/s-0042-1745246

Aims Although double-guidewire technique (DGT) is useful for difficult biliary cannulation, this technique has the potential risk of post-ERCP pancreatitis (PEP). The objective of this study was to clarify the incidence and risk factors of PEP after DGT for difficult biliary cannulation.

Methods A total of 71 patients with difficult biliary cannulation who underwent DGT from April 2018 to November 2021 were retrospectively identified, and clinical data were collected.

Results The incidence of PEP in patients who had undergone DGT was 19.7 % (14/71). The severity of PEP was mild in 11 patients and moderate in 3 patients. The risk factors for PEP included the following: female, pancreatic duct (PD) contrast injection and no PD stent. In multivariate analysis, sex (female; odds ratio (OR) = 6.14, 95 % confidence interval (CI) = 1.30–28.94) and PD stent (no stent; OR = 15.06, 95 % CI = 2.89–78.26) were significant risk factors for PEP. When divided into the PD stent placement or the no stent, the frequency of PEP in the stent group was significantly lower than that in the no stent group (10.9 % vs 50.0 %; $P = 0.02$). The serum amylase level after the procedure was significantly lower in stent group than no stent group (179 ± 30 vs 979 ± 248 , $P < 0.001$). The serum lipase level in the stent group was significantly lower than in the no stent group (319 ± 65 vs 2861 ± 730 , $P < 0.001$).

Conclusions Female and no PD stenting were found to be independent risk factors of PEP after DGT for difficult biliary cannulation. Pancreatic duct stenting after DGT is recommended to reduce the incidence of PEP.

eP394 COMPARATIVE EFFICACY AND SAFETY OUTCOMES OF ENDOSCOPIC ULTRASOUND-GUIDED LUMEN-APPPOSING METAL STENTS DRAINAGE FOR PANCREATIC PSEUDOCYSTS AND WALLED-OFF NECROSIS – A SINGLE-CENTER EXPERIENCE

Authors Gröhl K.¹, Ebigo A.¹, Schnoy E.¹, Braun G.¹, Weber T.¹, Goeldner S.K.², Messmann H.¹, Nagl S.¹

Institutes 1 University Hospital Augsburg, Gastroenterology, Augsburg, Germany; 2 Ostalb Klinikum, Aalen, Germany

DOI 10.1055/s-0042-1745247

Aims Endoscopic ultrasound (EUS)-guided transmural drainage is considered the first-line treatment of pancreatic fluid collections (PFCs). The results of LAMS drainage for different PFC types remain controversial. This study aimed to compare the outcome and safety of LAMS drainage for walled-off necrosis (WON) and pancreatic pseudocysts (PPC).

Methods Patients with PPC or WON who underwent EUS-guided drainage with LAMS from November 2013 to October 2021 were analysed retrospectively. Efficacy outcomes were technical and clinical success rates and procedure time. Safety outcomes included bleeding rate, stent migration, stent occlusion, perforations, septic complications, hospital stay. Pathogen spectrum analyses of WON vs. PPC were included.

Results 35 and 48 patients with PPC and WON, respectively, underwent drainage with LAMS. The median procedure time for PPC and WON were 42.5min and 50.0min, respectively ($P = 0.175$). Median stent indwell time was 56 days for WON and 66 days for PPC ($P = 0.349$). Technical and clinical success rates did not differ significantly ($P = 0.635$ and $P = 0.225$). 56 % of patients in the WON group required subsequent endoscopic necrosectomy. Overall adverse events after LAMS placement occurred more often in the WON group (37 % vs. 12 %; $P = 0.019$). Fungal pancreatic infections and enterococcus infections differed significantly between both groups (63 % WON vs. 33 % PPC; $P = 0.03$ and 50 %

WON vs. 23.8% PPC, $P=0.048$, retrospectively). Fungal infections were associated with a significantly longer hospital stay ($P=0.029$).

Conclusions LAMS placement in WON is associated with more adverse events. Fungal infections are more common in patients with infected WON and indicate patients with higher morbidity and longer hospital stay.

eP397 ACCIDENTAL ENDOSCOPIC CHOLECYSTECTOMY AFTER LAMS-CHOLECYSTOBULBOSTOMY

Authors Nennstiel S.C.¹, Herner A.¹, Tatu A.¹, Weber A.¹, Müllhaupt B.¹, Schlag C.¹

Institute 1 Universitätsspital Zürich, Zürich, Switzerland

DOI 10.1055/s-0042-1745250

Aims A 72-year old cholestatic patient was admitted to our hospital with a suspected malignant hilar biliary stenosis. An additional stricture of the common bile duct, including the orifice of the cystic duct was detected in the following ERC – balloon dilation of the strictures and insertions of bilateral plastic stents were conducted. One week after the initial intervention, a rise of cholestasis- and inflammatory parameters was noted.

Methods One week after the initial intervention, a rise of cholestasis- and inflammatory parameters was noted. Subsequent ultrasound and CT-imaging showed cholecystitis with diffuse wall thickening of the hydropic gallbladder. Direct endoscopic drainage of the gallbladder via hot lumen-apposing-metal stent (LAMS) and subsequent insertion of an additional double-pigtail stent through the LAMS was performed without any complications resulting in improvement of clinical condition and lab values.

Results Two weeks later the patient developed again increasing markers of inflammation and cholestasis. Another stent exchange of the biliary tract stents was performed. This intervention also showed occluded gallbladder-LAMS by food residues and direct endoscopic cleansing was done. During this procedure, a 6x3 cm long greenish structure was removed through the LAMS, histologically corresponding to the necrotic gall bladder. The further clinical course of the patient was free of complications with regard to the endoscopic cholecystectomy and the LAMS was finally replaced by two pigtail-stents between duodenum and gallbladder bed.

Conclusions This case presents an uncommon event after endoscopic ultrasound-guided gallbladder drainage with endoscopic removal of the gallbladder through the LAMS. This individual case did not result in specific complications.

eP398 EFFICACY OF PANCREATIC STENTS IN A REAL-WORLD PRACTICE: 10-YEAR RETROSPECTIVE COMPREHENSIVE STUDY

Authors Nicolaou P.¹, Velegaki M.¹, Psistakis A.¹, Arna D.¹, Mpitouli A.¹, Fragaki M.¹, Voudoukis E.¹, Theodoropoulou A.¹, Vardas E.¹, Paspatis G.¹

Institute 1 Venizeleio General Hospital, Department of Gastroenterology, Heraklion, Greece

DOI 10.1055/s-0042-1745251

Aims Recent data have shown an increase in the incidence of [post- endoscopic retrograde cholangio-pancreatography (ERCP) pancreatitis] (PEP) among hospitalized patients having ERCP. Pancreatic duct stent (PDS) placement seems to facilitate common bile duct (CBD) access and reduces the rate of PEP. However, endoscopists, feel uncomfortable placing a PDS. Most information regarding PDS comes from randomized control trials. In this study, we present a retrospective analysis of prospectively collected data, focusing on the effectiveness of PDS placement in assisting CBD cannulations and in preventing PEP, in real world practise.

Methods Eligible patients were those who underwent ERCP procedures with a PDS placement and they had a naive papilla. The PDS was placed after three inadvertent guidewire passages into the pancreatic duct.

Results A total of 4830 patients underwent ERCP between 2010-2020, with PEP rate 5.1 % and cannulation rate 93 %. Among them, 289 met the inclusion

criteria (133 males, mean age:67yrs). Indications are presented in Table 1. In 253 patients CBD cannulation was achieved after the placement of the PDS in the same procedure, whereas in 21 patients in a second ERCP. In 15 patients the cannulation was not possible. One patient developed severe PEP and another one PDS migration into the duct.

Conclusions Our data have shown that the PDS placement facilitates the CBD cannulation in difficult cases without significant side effects. Also, it seems to reduce the incidence of the PEP and therefore PDS use should not be avoided when the indication is fulfilled.

Table 1.

► Table 1

Indication	
CBD stones	168
Malignant CBD stricture	90
Benign CBD stricture	18
Bile leak	13

eP399V CONVERSION OF A MALFUNCTIONING PERCUTANEOUS CHOLECYSTOSTOMY INTO AN EUS-GUIDED CHOLECYSTOGASTROSTOMY

Authors Omella Usieto I.¹, Agudo Castillo B.¹, Gonzalez-Haba Ruiz M.¹

Institute 1 Hospital Puerta de Hierro – Majadahonda, Madrid, Spain

DOI 10.1055/s-0042-1745252

Percutaneous gallbladder drainage (PGD) is the treatment of choice for acute cholecystitis in high risk surgical patients. EUS-guided transmural drainage (EUS-GBD) has shown similar results with a lower rate of complications. In addition, as its role as initial approach, EUS-GBD may convert a pre existing PGD into an internal drain, reducing common complications (ie catheter dislodgement, cellulitis, fistula formation and infection) and increasing patient's comfort. We hereby report a case of successful EUS-GBD conversion in a patient with PGD and recurrent complications.

eP400 EFFECTIVENESS AND SAFETY OF TRANSPANCREATIC PAPILOTOMY: A LARGE SCALE RETROSPECTIVE CROSS-SECTIONAL STUDY

Authors Papaefthymiou A.¹, Florou T.¹, Koffas A.¹, Kateri C.¹, Pateras K.¹, Fytisilis F.¹, Chougias D.¹, Bektsis T.¹, Manolakis A.¹, Kapsoritakis A.¹, Potamianos S.¹

Institute 1 University Hospital of Larissa, Gastroenterology, Larissa, Greece

DOI 10.1055/s-0042-1745253

Aims Difficult cannulation represents a common condition during endoscopic retrograde cholangiopancreatography (ERCP). This study assessed the efficacy and adverse events during transpancreatic sphincterotomy (TPS), and investigated confounders associated with those outcomes.

Methods All patients referred to our department for ERCP during 2015-2020 were eligible, in case of intact papilla and visceral anatomy. In addition to standard measures, TPS was combined with pancreatic stent (PS) placement. Beyond demographics, we retrieved data considering indication, peri-ampullary anatomy, necessity for TPS or fistulotomy, their outcomes and complications. x2 test was conducted to investigate associations between TPS and independent variables, and statistical significance was set at $p<0.05$. When significance was observed, the respective variables were introduced in a regression model.

Results 1082 individual patients were eligible, with equal female:male ratio and mean age of 72.7 (± 15.82) years. Seventy-three patients (6.7%) underwent TPS, with a 95.9% success rate. Papilla morphology or regional divertic-

ulum did not affect the decision to TPS, though it was significantly associated with malignant common bile duct (CBD) obstruction as ERCP indication ($p = 0.001$) and followed ineffective fistulotomy in 23 % of cases ($p < 0.001$). Considering adverse events, TPS did not increase the incidence of post-ERCP pancreatitis (PEP), whilst affected bleeding ($p = 0.005$). Regression analysis revealed a protective role of TPS on PEP, probably due to PS (RR:0.015, $p < 0.001$), whereas the aforementioned risk of hemorrhage was attributed to previous pre-cut attempts (RR:3.024, $p = 0.004$).

Conclusions TPS combined with PS is an effective and safe modality in cases of difficult cannulation and could be the first choice in malignant CBD obstruction.

eP401 OUTCOMES OF CHOLANGIOSCOPY-GUIDED ELECTROHYDRAULIC LITHOTRIPSY FOR DIFFICULT BILE DUCT STONES: EXPERIENCE OF TWO HEPATOBILIARY UNITS IN GREECE

Authors Paraskeva K.¹, Papastergiou V.¹, Giannakopoulos A.¹, Psistakis A.², Dinic M.¹, Pentilas N.¹, Androustos N.¹, Makridaki D.¹, Themistocleous E.¹, Mastrokosta E.¹, Delatolas V.¹, Petraki S.¹, Vardas E.², Paspatis G.²

Institutes 1 Konstantopoulou-Patision General Hospital, Athens, Greece; 2 Venizelion General Hospital, Gastroenterology, Heraklion, Greece
DOI 10.1055/s-0042-1745254

Aims Conventional endoscopic techniques for stone extraction fail in up to 10 % of patients with common bile duct (CBD) stones. The Spyglass single-operator cholangioscopy (SOC) system provides the capability to fragment biliary stones under direct visualization using SOC-directed electrohydraulic lithotripsy (SOC-EHL). We evaluated the efficacy and safety of SOC-EHL in treating difficult CBS stones.

Methods Consecutive patients who underwent SOC-EHL from 2015 to 2021 in two tertiary hepatobiliary units in Greece were retrospectively reviewed.

Results A total of 54 patients (59.2 % females, mean 70.6 ± 14.8 years) underwent 67 SOC-EHL procedures. Forty-nine (90.7 %) of the procedures were performed under monitored anesthesia care without intubation, and 5 (9.3 %) were performed under general anesthesia. The median procedure duration was 45 minutes (range 20-90min). CBD clearance was achieved in 46/54 (85.2 %). Of the 46 patients undergoing successful SOC-EHL, 38 (82.6 %) required one SOC-EHL session, 6 (13 %) required two SOC-EHL sessions and 2 (4.3 %) required three SOC-EHL sessions for complete CBD clearance. Two (3.7 %) patients developed post-procedure cholangitis responding to antimicrobial therapy and one (1.8 %) patient developed mild, self-limiting, acute pancreatitis.

Conclusions SOC-EHL was successful in 85 % of patients with difficult CBD stones who had previously failed extraction by conventional techniques. SOC-EHL appears to be effective and safe for the treatment of refractory CBD stones.

eP402V CHOLANGIOSCOPY GUIDED-RFA ABLATION OF TUMORAL INGROWTH IN A BILIARY METALLIC STENT: BURN, SPY AND WAIT

Authors Pereira Correia F.¹, Carvalho Lourenço L.¹, Horta D.¹, Martins A.¹
Institute 1 Hospital Prof. Dr. Fernando Fonseca, Amadora, Portugal
DOI 10.1055/s-0042-1745255

A 74-years-old male diagnosed with pancreatic adenocarcinoma, currently under palliative approach. Due to obstructive jaundice, a metallic biliary stent was placed. After a few months, a new metallic biliary stent was replaced due to cholangitis and evidence of tumoral ingrowth. Recently, there was new episode of obstruction of biliary stent due to tumoral ingrowth. We decided to perform cholangioscopy-guided radiofrequency ablation to reduce tumour burden and increase stent permeability. The result was good, so we did not replace a new biliary stent. After 3 months of the procedure, the patient remains stable with no evidence of biliary stent obstruction.

eP403 DESMOPLASTIC STROMA IDENTIFICATION AS A QUALITY MARKER FOR RELIABLE HISTOLOGIC SAMPLES OBTAINED BY EUS IN SOLID PANCREATIC LESIONS. A NEW STANDARD FOR ADEQUACY

Authors Perez Alvarez G.¹, Husain Calzada I.², Vargas Gonzalez C.A.¹, Cano Calderero F.X.¹, Junquera Alonso E.¹, Terroba Alonso M.¹, Cerrella Cano C.¹, Alonso de la Campa J.², Meijide Santos G.², Perez Vidal L.², Crespo Sanchez M.¹, Sanchez Dominguez L.¹

Institutes 1 Hospital Universitario San Agustin, Gastroenterology, Aviles, Spain; 2 Hospital Universitario San Agustin, Pathology, Aviles, Spain
DOI 10.1055/s-0042-1745256

Aims To evaluate the presence of desmoplastic stroma as a potential new quality marker of the fine needle biopsy (FNB) samples in pancreatic ductal adenocarcinoma (PDAC). To illustrate that a simplified strategy to obtain and process the tissue using histologic needles allows an adequate high-quality sample, including the identification of stroma.

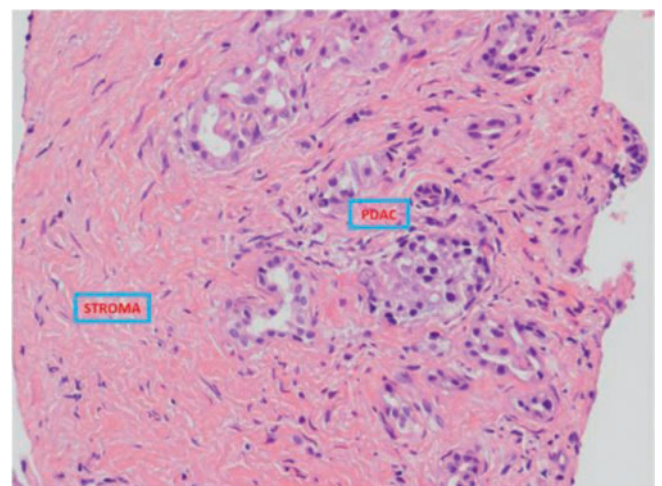
Methods We retrospectively analyzed the global diagnostic performance and the presence of desmoplastic stroma in consecutive FNB samples of solid pancreatic lesions clinically suspicious of PDAC. We included those lesions starting after the switch from cytologic-based (FNA) samples to those obtained using histologic needles (FNB), and processed straightforwardly as a usual biopsy, what we defined as "simplified biopsy", namely to directly express the tissue in formalin, doing a rapid first adequacy assessment according to macroscopic on-site evaluation (MOSE) as described in the literature. 22G caliber Franseen and fork-type needles were used.

Results

► Table 1

ANALYSED VARIABLE	FREQUENCY: Mode (n)
Tip design	Franseen 22G (14)
Number of passes	3 (9), range 2-4
Adequacy to diagnose PDAC	YES: 100 % (15)
Visible desmoplastic stroma	YES: 100 % (15)

From January 2020 to August 2021, fifteen consecutive purely solid and 5 solid-cystic lesions were diagnosed as PDAC using the simplified biopsy strategy. Diagnostic accuracy was 100 %. Desmoplastic stroma was identified in all the samples from solid lesions.



► Fig. 1

Conclusions Identification of desmoplastic stroma could work as a new specific quality marker for FNB samples, as it represents a more reliable feature of a PDAC lesion in terms of molecular microenvironment. This could facilitate ancillary tests aimed at stromal therapeutic targets including the design of organoids. A simplified biopsy strategy allows to easily obtain high quality histologic specimens with a complete diagnostic yield.

eP404V EUS-GUIDED JEJUNO-JEJUNAL ANASTOMOSIS AS SALVAGE THERAPY FOR A COMPLEX BENIGN GASTRIC OUTLET OBSTRUCTION

Authors Perez-Cuadrado-Robles E.¹, Perrod G.², Lansier A.³, Palle J.⁴, Mariani A.⁵, Cellier C.¹, Rahmi G.²

Institutes 1 Georges-Pompidou European Hospital, Department of Gastroenterology, Paris, France; 2 Georges-Pompidou European Hospital, Gastroenterology, Paris, France; 3 Georges-Pompidou European Hospital, Radiology, Paris, France; 4 Georges-Pompidou European Hospital, Oncology, Paris, France; 5 Georges-Pompidou European Hospital, Department of Surgery, Paris, France
DOI 10.1055/s-0042-1745257

Lumen-apposing metal stents (LAMS) are gaining ground in the treatment of benign gastric outlet obstruction (GOO). A 76 years-old male patient with recurrent GOO following a surgical gastrojejunostomy. An upper-GI endoscopy revealed a kinking of the proximal efferent limb resulting in a long complex stricture.

First, a 7-French catheter was placed in the alimentary limb. Subsequently, an endoscopic ultrasound (EUS) scope was advanced into the afferent limb. The efferent limb was punctured with a 19-gauge needle. Finally, a wire-guided 20mm LAMS was used to perform the jejuno-jejunal anastomosis. The patient recovered well, with solid diet 48h later. No delayed complications.

eP405V TANDEM ENDOSCOPE ASSISTED EUS-GUIDED ANTEGRADE STENTING OF BILIARY AND PANCREATIC DUCT IN A SURGICALLY TRANSECTED PAPILLA

Authors Pham K.D.-C.¹, Havre R.F.¹

Institute 1 Haukeland University Hospital, Dept. of Medicine, Bergen, Norway
DOI 10.1055/s-0042-1745258

Iatrogenic injuries to the major papilla involving the pancreatic (PD) and common bile duct (CBD) are challenging to treat. Surgical reconstruction is usually required. We describe the endoscopic reconstruction of the pancreatic and biliary orifices after a surgical complication in a 61-year-old male who underwent duodenal surgery where the papilla was accidentally stapled and resected, and resulted in occlusion of the PD and CBD. The CBD and PD were accessed from the stomach for antegrade stenting to form pancreaticoduodenectomy and choledochoduodenostomy. The tandem endoscope rendez-vous technique was used due to multiple instrumentation bends, to allow better antegrade pushability.

eP406V MUCINOUS CYSTADENOMA INFECTION AFTER EUS AND MORAY MICROFORCEPS BIOPSIES

Authors Pijoan Comas E.^{1,2}, Vargas García A.^{1,2}, Torres Monclús N.³, Bayas Pástor D.C.³, Miguel Salas I.³, Albuquerque Miranda M.^{1,2}, Torres Vicente G.³, Zaragoza Velasco N.³, Figa Francesch M.¹, Gonzalez-Huix Lladó F.^{1,3}

Institutes 1 Clínica Girona, Girona, Spain; 2 Hospital de Palamós, Palamós, Spain; 3 Hospital Universitari Arnau de Vilanova, Lleida, Spain
DOI 10.1055/s-0042-1745259

A 74-year-old woman underwent EUS for pancreatic isthmus cyst with increasing size (up to 62x54mm). Puncture with cytologic 16G needle was performed,

obtaining liquid and biopsies of the cystic wall with Moray microforceps (5 bites). Mucinous cystadenoma with low grade dysplasia was diagnosed. The patient was admitted for abdominal pain and fever 48 hours afterwards, with cystic infection suspicion. Antibiotic treatment was started with clinical deterioration at 48 hours. EUS showed 65x58mm lesion with thickened walls and hyperechogenic component (pancreatic abscess). Drainage was performed through LAMS (HotAxios) 10x10mm with 7Fx3cm pigtail. Both stents were removed 3 weeks after favourable evolution.

eP407V INTRACHOLEDOCAL BLEEDING DUE TO EPICHOLEDICAL ARTERY LACERATION AFTER ENDOSCOPIC BALLOON DILATATION

Authors Pijoan Comas E.^{1,2}, Torres Monclús N.³, Bayas Pástor D.C.³, Albuquerque Miranda M.^{1,2}, Torres Vicente G.³, Vargas García A.^{1,2}, Miguel Salas I.³, Huelin Álvarez P.³, Figa Francesch M.¹, Gonzalez-Huix Lladó F.^{1,3}

Institutes 1 Clínica Girona, Girona, Spain; 2 Hospital de Palamós, Palamós, Spain; 3 Hospital Universitari Arnau de Vilanova, Lleida, Spain
DOI 10.1055/s-0042-1745260

A 58-year-old man underwent ERCP for symptomatic choledocholithiasis. Dilated CBD (15mm) with narrowing of intrapancreatic CBD (7mm) and 12mm lithiasis in medium CBD were found. Lithiasis could not be removed with balloon. Endoscopic-balloon-dilatation up to 14mm was performed. Immediately following balloon deflation, a spurting pulsatile bleeding from CBD was seen, probably due to epicholedocal artery laceration. Bleeding could not be controlled by compression. However, adrenalin injection achieved temporary haemostatic control. Lithiasis was removed. cSEMS of 4cm was placed. The bleeding was controlled during ERCP, the patient was discharged in 24h and stent had spontaneously migrated at 4 weeks.

eP408 ENDOSCOPIC AND SURGICAL TREATMENT OF AMPULLARY TUMORS: A SINGLE CENTER STUDY

Authors Potrusil M.¹, Hlavsa J.¹, Kala Z.¹, Kroupa R.², Kolovratnikova H.², Sochorova D.¹, Janecek P.¹, Andrasina T.³, Kunovsky L.^{1,2}

Institutes 1 Department of Surgery, University Hospital Brno, Faculty of Medicine, Masaryk University, Brno, Czech Republic; 2 Department of Gastroenterology and Internal Medicine, University Hospital Brno, Faculty of Medicine, Masaryk University, Brno, Czech Republic; 3 Department of Radiology and Nuclear Medicine, University Hospital Brno, Faculty of Medicine, Masaryk University, Brno, Czech Republic
DOI 10.1055/s-0042-1745261

Aims Neoplastic tumors of the ampulla of Vater are rare. Pathologically benign lesions are primarily indicated for endoscopic treatment. Cases of early adenocarcinomas affecting only the mucosa might be resolved by endoscopic resection in selected patients. Tumors infiltrating deeper layers of the wall must be removed by radical surgery.

Methods In the years 2012 – 2020, 63 patients with ampullary tumors were treated at the University Hospital Brno. All underwent appropriate staging examinations. The individual therapeutic options were discussed by a multidisciplinary committee. The main monitored parameters were: the type of surgery, 30 day morbidity and mortality, the results of definitive histopathological examination, adjuvant therapy and recurrence of the disease.

Results Surgical resection was indicated in 44 patients. Transduodenal ampullectomy (TDA) was performed in 11 patients. The main type of resection was pancreaticoduodenectomy (PD) performed in 33 patients. 19 patients underwent endoscopic papillectomy. Definitive pathology described adenocarcinoma in 36 patients.

Conclusions In the cases of adenomas of ampullary tumors endoscopic treatment is indicated. In early stages of ampullary carcinoma, it is appropriate to consider an endoscopic solution in selected patients. If endoscopic treatment is not possible due to the extent or biological nature of the lesion, a radical

surgical solution with a preference for PD is fully indicated. TDA can be considered in polymorbid and elderly patients without suspected lymph node involvement. In all our patients with pT1a adenocarcinomas (n = 3), all nodes removed were pathologically negative. These patients could benefit from endoscopic resection or TDA.

eP409 QUANTITATIVE ASSESSMENT OF CONTRAST ENHANCED ENDOSCOPIC ULTRASONOGRAPHY (CE-EUS) WASHOUT RATE IN PREDICTING MALIGNANCY IN PANCREATIC SOLID MASSES: A PILOT STUDY

Authors Rednic V.¹, Cioltean C.^{2,1}, Orzan R.^{2,1}, Spulber A.^{2,1}, Pojoga C.^{3,1}, Mosteanu O.^{2,1}, Hagiu C.^{2,1}, Rusu I.^{2,1}, Seicean A.^{2,1}

Institutes 1 Regional Institute of Gastroenterology and Hepatology, Gastroenterology, Cluj-Napoca, Romania; 2 Iuliu Hațieganu University of Medicine and Pharmacy, Cluj-Napoca, Romania; 3 Babeș-Bolyai University, Clinical Psychology and Psychotherapy Department, Cluj-Napoca, Romania
DOI 10.1055/s-0042-1745262

Aims Contrast enhanced endoscopic ultrasound (CE-EUS) is a sensitive method to evaluate pancreatic solid masses. The arterial phase was mostly studied, however, the importance of venous wash-out has been less studied.

The aim: to evaluate the diagnostic role of CE-EUS wash-out rate in the early and late venous phase based on quantitative analysis.

Methods We prospectively analyzed patients from one center with solid pancreatic masses on CT scan who underwent conventional EUS followed by CE-EUS and EUS-fine needle aspiration. Quantitative parameters were generated by time-intensity curve analysis. A standardized region of interest inside the tumor was examined and the quantitative uptake of SonoVue was recorded. The wash-out phase was assessed as early washout = uptake at 45 seconds/peak intensity between 25-30 seconds and late wash-out = uptake at 60 seconds/ peak intensity between 25-30 seconds. The final diagnosis was based on surgery or EUS tissue acquisition results and 6 months follow-up.

Results A total of 31 patients were included, 23 adenocarcinomas and 8 chronic pancreatitis patients. In adenocarcinomas the early wash-out was $79,4 \pm 28,8\%$ and the late wash-out was $80,5 \pm 17,8\%$, showing slow wash-out. In case of chronic pancreatitis, the early wash-out was $74,3 \pm 47,2\%$ and late wash-out was $60,5 \pm 21\%$. There was no statistically significant difference between the groups.

Conclusions The washout rates between pancreatic adenocarcinoma and chronic pancreatitis were not different. The high standard deviation value at 60 seconds in the adenocarcinoma group shows the heterogeneity of the wash-out rate and further assessment based on different grading of adenocarcinoma is needed.

eP410 A CHALLENGING DIAGNOSE OF A GIANT BILIARY CYSTADENOMA

Authors Rizza S.¹, Laudi C.², Staiano T.²

Institutes 1 Candiolo Cancer Institute, FPO – IRCCS, Candiolo, Torino, Gastroenterology and Digestive Endoscopy Unit, Candiolo – Torino, Italy; 2 Candiolo Cancer Institute, FPO – IRCCS, Candiolo, Torino, Gastroenterology and Digestive Endoscopy Unit, Candiolo, Italy
DOI 10.1055/s-0042-1745263

Aims Differential diagnosis of intra-abdominal cysts can often be challenging.

Methods We present a case of a woman with a huge intra-abdominal cyst subjected to various in-depth investigations.

Results A 62-year-old lady presented for persistent epigastric pain, early satiety, post-prandial vomiting and weight loss. No history of pancreatitis and no biochemical alterations. EGDS showed a little bulging, US revealed a voluminous epigastric cystic formation. CT and MRI confirmed a cyst extended for 12 cm, with thin and regular walls, arranged between the left hepatic lobe and the

small gastric curvature, suspected for duplication cyst. EUS showed a cyst almost completely anechoic, with slightly well-defined walls, thin peripheral hyperechoic internal septa. No evidence of communication with the Wirsung or its branch ducts or even apparent origin from the gastro-intestinal wall. Intra ed extrahepatic biliary system was regular. Suspicion of cystic lymphangioma was posed, without completely ruling out an extrinsically developing duplication cyst. Considering the low diagnostic accuracy of FNA (with risk of seeding if malignancy) and worsened symptoms, the patient was referred to surgery and underwent laparoscopic excision. Final histological diagnosis was mucinous biliary cystadenoma.



► Fig. 1

Conclusions Biliary cystadenomas are rare cystic dilation in the biliary ducts typically occurring in middle-aged females. They can be a reaction to an acquired biliary injury or originating from congenital hamartomatous bile ducts. Usually diagnosed incidentally, they represent a diagnostic challenge and imaging alone is often not conclusive. Due to their malignant potential (up to 20%), the treatment is complete surgical excision, with or without liver resection.

eP411 METACHRONOUS PANCREATIC METASTASIS FROM COLON CANCER DIAGNOSED BY ENDOSCOPIC ULTRASOUND-GUIDED FINE NEEDLE BIOPSY (EUS-FNB)

Authors Rizza S.¹, Laudi C.¹, Maldì E.², Staiano T.¹

Institutes 1 Gastroenterology and Digestive Endoscopy Unit, Candiolo Cancer Institute, FPO – IRCCS, Candiolo, Torino, Candiolo, Italy; 2 Pathology Unit, Candiolo Cancer Institute, FPO – IRCCS, Candiolo, Torino, Candiolo, Italy
DOI 10.1055/s-0042-1745264

Aims Pancreatic metastases are rare (2% of pancreatic neoplasms). They can appear long after the initial surgery and primary cancer most frequently associated is renal cell carcinoma. Preoperative diagnosis is very challenging.

Methods Here a case of a rare pancreatic metastasis from colo-rectal cancer (CRC).

Results A 66-year-old man underwent a left hemicolectomy in urgency for a colonic obstruction. Histological examination revealed an ulcerated CRC (stage IIIB:pT4aN1M0). Four months later a computed-tomography (CT) described liver metastases treated with atypical resections, after neoadjuvant chemotherapy. After 18 months, a 18FDG PET/CT showed uptake in S6-S8 and in the pancreatic tail. CT confirmed a hypodense lesion of 26 mm of the pancreatic tail, uncertain whether primary or secondary. Multidisciplinary team indicated EUS-FNB. EUS showed a lesion of the pancreatic tail measuring 24x21 mm, hypoechoic and inhomogeneous, with poorly defined margins, hypovascularized even after administration of contrast medium, of hard consistency on elastosonography, in close proximity to the splenic vessels and the posterior gastric wall. The main pancreatic duct was regular. FNB was performed using a 25-G needle (SharkCore, Beacon Endoscopic/Medtronic, Newton, MA, USA). Sufficient specimens were obtained after 3 passes. Histopathological and im-

munohistochemical analysis described the presence of adenocarcinoma and revealed cytokeratin-20 (CK20) and caudal-type homeobox transcription factor-2 (CDX2) positive with cytokeratin-7 (CK7) negative, morphologically similar to primary CRC. Final diagnosis was metachronous pancreatic metastasis from CRC and the patient will be discussed for subsequent treatment (chemotherapy vs surgery).



► Fig. 1

Conclusions EUS-FNB is a fundamental diagnostic tool which allowed to pre-operatively characterize a rare pancreatic lesion.

eP412 KI67 AGREEMENT BETWEEN EUS-GUIDED SAMPLING (EUS-FNA/FNB) AND SURGICAL SPECIMEN IN PANCREATIC NEUROENDOCRINE NEOPLASMS (PNEN)

Authors Rizzi F.¹, Bruno M.¹, Sacco M.¹, Maletta F.², Rizza S.³, Cortegoso Valdivia P.⁴, Gaia S.¹, Gesualdo M.¹, Cravero F.¹, De Angelis C.G.¹

Institutes 1 City of Health and Science University Hospital, University Division of Gastroenterology, Digestive Endoscopy Unit, Turin, Italy; 2 City of Health and Science University Hospital, Surgical Pathology Unit, Turin, Italy; 3 Cardinal Massaia Hospital, Department of Gastroenterology and Endoscopy, Asti, Italy; 4 University Hospital of Parma, Gastroenterology and Endoscopy Unit, Parma, Italy

DOI 10.1055/s-0042-1745265

Aims In pancreatic neuroendocrine neoplasms (pNEN) prognosis and therapeutic choices are mostly influenced by histological grading (G), based on Ki67 proliferative index: a correct pre-surgical evaluation is fundamental. The aim of the study is to evaluate the agreement of Ki67 and the respective grading, between EUS-guided sampling (FNA/FNB) and surgical specimen, in patients with pNEN.

Methods 68 patients who underwent surgery for pNEN, after EUS-guided sampling (47 FNA, 21 FNB), between 2005 and 2021, were retrospectively evaluated. EUS grading (eG) and surgical one (sG), measured according to Ki67 proliferative index (respectively eKi67 and sKi67), were compared.

Results Patients were mostly female (51%), with a mean age of 52 ± 13.4 years; lesions were non-functioning in 79% and the mean size was 24.6 ± 13.9 mm. In the whole population, eG-sG concordance was 69%; dividing the population according to the diameter of the lesion (< 2 cm vs ≥ 2 cm), concordance was 77.8% vs 63.2%, respectively; evaluating only lesions ≥ 3 cm, the agreement decreased to 59.1%. EUS-sampling technique (FNA vs FNB) did not change the degree of agreement (71% vs 65%, $p = 0.77$). The correlation between eKi67 and sKi67 was positive and moderate ($\tau = 0.36$, $p < 0.0001$), slightly stronger in the FNB group than in the FNA one ($\tau = 0.41$, $p < 0.05$ vs $\tau = 0.32$, $p < 0.05$).

Conclusions In pNEN, Ki67 evaluation on the material obtained by EUS-guided sampling (both by FNA and FNB) shows a good agreement with Ki67 evalu-

ated on surgical specimens; this agreement is even higher in small pancreatic lesions (< 2 cm).

eP413 CONTRIBUTION OF ENDOSCOPIC RETRO-GRADE CHOLANGIOPANCREATOGRAPHY IN LITHIASIS PATHOLOGY IN THE ELDERLY OVER 75 YEARS : RESULTS OF A RETROSPECTIVE STUDY

Authors Rokhsi S.¹, Addajou T.¹, Mrabti S.¹, Benhamdane A.¹, Sair A.¹, Touibi A.¹, Berrida R.¹, El koti I.¹, Rouibaa F.¹, Benkirane A.¹, Seddik H.¹

Institute 1 Mohammed V Military Hospital, Rabat, Morocco

DOI 10.1055/s-0042-1745266

Aims The aim is to determine the particularities and safety of ERCP in patients over 75 years old by comparing its results with those of younger subjects.

Methods A retrospective descriptive and analytical study was carried out from September 2002 to August 2021 including 122 patients, whose age was over 75 years and had undergone ERCP for lithiasis. Epidemiological, clinical and endoscopic data were collected, and compared with younger subjects results. Statistical analysis was performed using SPSS 20 software.

Results Among 1080 ERCPs performed for lithiasis pathology, 12.6% were over 75 years old ($n = 122$). There was a sex ratio (M/F) of 0.96 compared to 0.6 ($p = 0.014$).

Endoscopic biliary sphincterotomy was performed in 94.3% of cases.

Primary vacuity of the main biliary duct was achieved in 64.8% of cases (compared to 78.8% in younger subjects; $p = 0.001$), the use of additional endoscopic manoeuvres was 33.6% (18.5% in younger subjects), namely naso-biliary drain in 11.5%, sphincteroclase in 9.8%, prosthesis in 6.6%, mechanical lithotripsy in 3.3%, enlargement by endoscopic biliary sphincterotomy in 1.6%, and extracorporeal lithotripsy in 0.8% ($p < 0.001$).

The early complication rate after ERCP was 6.6% compared to 5.6% ($p = 0.06$).

The overall success rate was 88.4% compared to 92.5% ($p = 0.1$).

In multivariate analysis, there was no significant difference in the efficacy of ERCP in lithiasis between subjects under and over 75 years old.

Conclusions Although the overall success rate remains better in younger subjects, the results of ERCP in lithiasis in elderly subjects over 75 years of age remain satisfying, with no statistically significant difference in terms of the effectiveness of ERCP.

eP414 ENDOSCOPIC BILIARY DRAINAGE IN THE PALLIATIVE TREATMENT OF KLATSKIN TUMOURS: OUTCOMES AND FACTORS ASSOCIATED WITH SUCCESS OR FAILURE

Authors Rokhsi S.¹, Addajou T.¹, Mrabti S.¹, Benhamdane A.¹, Sair A.¹, Touibi A.¹, Berrida R.¹, El koti I.¹, Rouibaa F.¹, Benkirane A.¹, Seddik H.¹

Institute 1 Mohammed V Military Hospital, Rabat, Morocco

DOI 10.1055/s-0042-1745267

Aims The aim is to report the results of endoscopic biliary drainage as well as the factors associated with its success or failure.

Methods This is a retrospective and analytical study of 75 patients, conducted between July 2009 and August 2021, including all patients admitted with a Klatskin's tumour and for whom endoscopic drainage was indicated.

Factors associated with the success or failure of endoscopic treatment were studied by logistic regression analysis.

Statistical analysis was performed using SPSS version 22.0 software.

Results The average age was 62.67 ± 12 years. Our series was characterised by a male predominance of 68%.

Endoscopic drainage was successfully performed in 81.3% of patients.

Dilation was performed in 47% of cases.

In multivariate analysis and adjusting for age, gender, Bismuth tumour type, presence of metastases and endoscopic dilatation of the stenosis, only the

presence of metastases, endoscopic dilation and Bismuth tumour type modified the success rate.

Indeed, endoscopic dilatation prior to stenting increases the success rate by a factor of 4 [OR = 4; $p = 0.01$], whereas the presence of metastases decreases this rate by 65 % [OR = 0.35; $p < 0.001$]. However, tumours classified as Bismuth IV [OR = 8; $p < 0.001$] or Bismuth IIIa [OR = 5; $p = 0.004$] were associated with a risk of endoscopic treatment failure.

Conclusions Our study suggests that the presence of metastatic hilar cholangiocarcinoma classified as Bismuth IV or Bismuth IIIa appear to be associated with failure of endoscopic biliary drainage, whereas endoscopic dilatation prior to prosthesis placement appears to be associated with success.

eP415 REAL-TIME COMPUTER AIDED DETECTION OF SOLID FOCAL PANCREATIC MASSES IN ENDOSCOPIC ULTRASOUND IMAGING BASED ON CONVOLUTIONAL NEURAL NETWORKS

Authors Udristoiu A.L.¹, Constantinescu C.E.², Cazacu I.M.², Gruionu L.G.³, Gruionu G.^{3,4}, Iacob A.V.¹, Burtea D.E.², Constantin A.⁵, Podina N.⁵, Bejinariu N.⁶, Udristoiu S.¹, Surlin V.⁷, Copaescu C.⁸, Saftoiu A.^{2,5}

Institutes 1 University of Craiova, Faculty of Automation, Computers and Electronics, Craiova, Romania; 2 University of Medicine and Pharmacy Craiova, Research Center of Gastroenterology and Hepatology Craiova, Craiova, Romania; 3 University of Craiova, Faculty of Mechanics, Craiova, Romania; 4 Indiana University School of Medicine, Department of Medicine, Indianapolis, United States; 5 Ponderas Academic Hospital, Department of Gastroenterology, Bucharest, Romania; 6 Santomar Oncodiagnosics, Department of Pathology, Cluj-Napoca, Romania; 7 University of Medicine and Pharmacy Craiova, Department of General Surgery, Craiova, Romania; 8 Ponderas Academic Hospital, Department of Surgery, Bucharest, Romania

DOI 10.1055/s-0042-1745268

Aims Endoscopic ultrasound (EUS) imaging has a high accuracy for detection of solid focal pancreatic masses. However, the learning curve to master EUS is prolonged. The aim of our pilot project was to develop a real-time deep learning system used to detect and differentiate solid focal pancreatic masses as compared to normal pancreas.

Methods In this pilot study, deep learning algorithms for localization and segmentation were trained and optimized taking into consideration the trade off between performance and speed, to: 1) find pancreas/tumor in frames; 2) label them; 3) compute their bounding box with the corresponding coordinates and 4) segment them, by producing a mask, which gives pixel-wise segmentation of the pancreas/tumor.

Results 50 patients with normal pancreas or solid focal pancreatic masses were included in the study, with 15 images selected for each patient from the movies stored on the embedded hard disk drive of the ultrasound system. A total of 750 images and their ground-truths were used for training and testing of deep learning segmentation models presented in this study, reaching an average precision of 91 %.

Conclusions Our model showed a robust classification of normal pancreas versus solid focal pancreatic masses. The model has potential to be transferred to real-time EUS imaging. Preliminary evidence suggests that these observations have the potential to improve operating characteristics of EUS by enabling targeting biopsies of focal pancreatic masses and to shorten the learning curve of trainee endosonographers.

eP416V RETROPERITONEAL SCHWANNOMA

Authors Santos Pérez E¹, Agudo Castillo B¹, García-Oria M.², Martins Pinto da Costa A¹, El Hajra Martínez I.¹, Blanco Rey S.¹, Martín López J³, Silvestre Egea G³, González-Haba Ruiz M¹

Institutes 1 Hospital Universitario Puerta de Hierro, Majadahonda, Aparato Digestivo, Madrid, Spain; 2 Hospital Universitario Puerta de Hierro, Majadahonda, Cirugía General y Digestiva, Madrid, Spain; 3 Hospital Universitario Puerta de Hierro, Majadahonda, Anatomía Patológica, Madrid, Spain

DOI 10.1055/s-0042-1745269

A retroperitoneal mass was incidentally detected in an asymptomatic 48-year-old woman undergoing abdominal ultrasound. Laboratory tests, including tumor markers, were within normal limits. CT and MRI revealed a 48 × 46-mm well-defined, heterogeneous retroperitoneal mass. Given the broadness of differential diagnosis, EUS-FNA was performed showing a hypoechogenic mass between the gastric wall, pancreatic tail and left adrenal gland, non organ-dependent. On site cytology was concordant with a spindle cell neoplasm. Tumor-ectomy, distal pancreatectomy and splenectomy was performed with a final pathologic diagnosis of a well differentiated schwannoma. We hereby highlight the role of EUS in the preoperative assessment of retroperitoneal lesions.

eP417 THE IMPORTANCE OF CHOLANGIOSCOPY IN THE DIAGNOSIS OF INTRADUCTAL LESIONS OF THE BILIARY TRACT

Authors Saraiva R.O.¹, Simões G.¹, Canha M.I.¹, Rocha M.¹, Loureiro R.¹, Ramos G.¹, Cordeiro A.M.², Vigia E.³, Dias A.M.¹, Coimbra J.¹

Institutes 1 Centro Hospitalar Universitário Lisboa Central, Gastroenterology, Lisboa, Portugal; 2 Centro Hospitalar Universitário Lisboa Central, Radiology, Lisboa, Portugal; 3 Centro Hospitalar Universitário Lisboa Central, Surgery, Lisboa, Portugal

DOI 10.1055/s-0042-1745270

Aims Illustrate the importance of ERCP and cholangioscopy.

Methods Retrospective review of the clinical process.

Results Male of 41-years-old with postprandial infarction, nausea and weight loss (5 kg, 7 % total weight) with two years evolution. On examination, he presented scleral icterus. Analytically, conjugated hyperbilirubinemia (BT 3.62mg/dL/Bd 2.60mg/dL) and cytocholestasis (AST 102U/L, ALT 144U/L, FA 330U/L, GGT 681U/L) stood out.

Abdominal CT showed intra and extrahepatic biliary tract dilatation, and MRCP described dilatation of the intrahepatic bile duct and main biliary duct (MBD) with a reduction in the caliber of the distal half, without parietal changes or endoluminal images.

He underwent ERCP showing a heterogeneous filling defect in the distal half of the MBD, with upstream dilatation. Biliary sphincterotomy and exploration with a balloon and Dormia basket were performed, with the removal of fragments of tumor tissue, villous in appearance, with hemorrhagic and necrotic areas. Cholangioscopy identified a villous and friable exophytic lesion in the middle third of the MBD, which caused insurmountable stenosis. Biopsies revealed an intraductal tubulopapillary neoplasm with high-grade dysplasia, with focal transformation into adenocarcinoma (ADC).

Imaging staging was completed, without evidence of metastasis. A Whipple's cephalic pancreaticoduodenectomy with hepatico-jejunostomy was performed. The anatomopathological examination of the surgical specimen showed moderately differentiated ADC from the biliary tract, in an intraductal papillary neoplasm of the biliary tract (IPNB), (pT1N0R0).

Conclusions IPNB are percussive lesions of cholangiocarcinoma, which don't have a typical clinical or imaging presentation. Early diagnosis is a clinical challenge, and ERCP and cholangioscopy are fundamental for characterization of these lesions.

eP418 THE ROLE OF CHOLANGIOSCOPY IN THE DIAGNOSIS OF INTRADUCTAL PAPILLARY NEOPLASM OF THE BILE DUCT

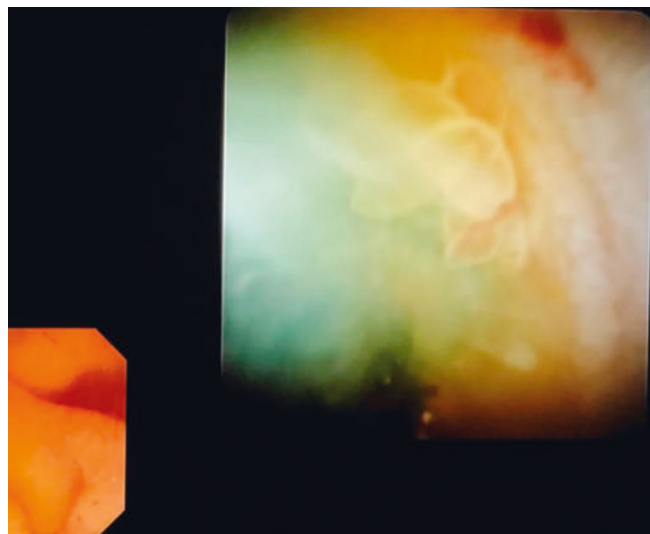
Authors Sarmiento Costa M.¹, Almeida N.^{1,2}, Donato P.³, Tralhão G.⁴, Figueiredo P.^{1,2}

Institutes 1 Centro Hospitalar e Universitário de Coimbra, Gastroenterology Department, Coimbra, Portugal; 2 University of Coimbra, Faculty of Medicine, Coimbra, Portugal; 3 Centro Hospitalar e Universitário de Coimbra, Radiology Department, Coimbra, Portugal; 4 Centro Hospitalar e Universitário de Coimbra, General Surgery Department, Coimbra, Portugal
DOI 10.1055/s-0042-1745271

Aims Intraductal papillary neoplasms of the bile duct (IPNB) constitute 10 to 15 % of all bile duct tumors. They are characterized by a papillary or villous neoplasm with a histological spectrum ranging from benign disease to invasive malignancy. IPNB can present surreptitiously as an intraductal mass within a dilated intrahepatic or extrahepatic bile duct. We intend to bring attention as its rarity in Western countries and tendency to masquerade as biliary stone disease can prevent its early diagnosis and management.

Methods An asymptomatic 77-year-old man with dilation of the biliary tree was referred to our Gastroenterology department.

Results He had no previous surgeries and liver enzymes were normal. Magnetic resonance cholangiopancreatography was performed, confirming a dilation of the intrahepatic bile ducts, more prominently of the left hepatic duct (16 mm), and common bile duct (CBD; 15 mm). The patient had been previously submitted to an endoscopic retrograde cholangiopancreatography (ERCP) that didn't reveal any obstructive lesions. Endoscopic ultrasonography showed a dilated common bile duct (14 mm) with some echogenic material inside without acoustic shadowing and a diffuse thickening of the bile duct wall. Since IgG4 was normal and a subsequent CT scan revealed a mass-forming structure in the left biliary duct, the patient was proposed to ERCP with cholangioscopy. It showed a thick mucoid secretion and multiple lesions with "fish-egg"/papillomatous appearance protruding in the dilated CBD. Biopsies confirmed the suspected diagnosis of intraductal papillary neoplasm of the bile duct with low grade dysplasia. The patient refused surgical intervention and remains asymptomatic.



► Fig. 1

eP419 ENDOSCOPIC MINOR PAPILLA SPHINCTEROTOMY IN PATIENTS WITH PANCREAS DIVISUM AND ACUTE RECURRENT PANCREATITIS: A METANALYSIS

Authors Schepis T.¹, Tringali A.^{1,2}, Familiari P.^{1,2}, Boskoski I.^{1,2}, Perri V.^{1,2}, Costamagna G.^{1,2}

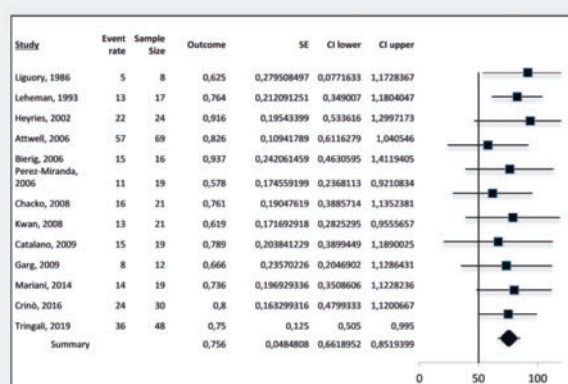
Institutes 1 Policlinico Agostino Gemelli Foundation IRCCS, Digestive Endoscopy Unit, Rome, Italy; 2 Centre for Endoscopic Research Therapeutics and Training – CERTT, Catholic University of the Sacred Heart, Rome, Italy

DOI 10.1055/s-0042-1745272

Aims Pancreas divisum (PD) is a common congenital variant of the pancreatic ductal system and a potential cause of acute recurrent pancreatitis (ARP). Endoscopic minor papilla sphincterotomy (MiES) is the most common procedure performed in the management of PD-related ARP. The aim of this study is to perform a meta-analysis estimating the efficacy and the safety of MiES in the management of patients with PD-related ARP.

Methods A research was performed in Pubmed and Web of science, the studies were reviewed and selected according to inclusion and exclusion criteria. Evaluation of heterogeneity and publication bias was performed, and a random effect model was used to estimate the effect size of each study.

Results 113 articles were selected and reviewed, 13 met the inclusion criteria. All the studies were retrospective with a mean follow-up duration of 45.9 months. A total of 323 patients with PD-related ARP treated with MiES were included in the meta-analysis. The clinical success rate of MiES (defined as no further episodes of ARP, reduction of episodes of ARP, or improvement in QoL) was of 75.60 % (95 %CI, 66 %-85 %) (Figure 1). Adverse-events occurred in 22.67 % of cases (95 %CI, 17.20 % – 28.60 %): acute pancreatitis in 13.67 %, bleeding in 3.56 %, and other AEs in 3.61 % of cases.



MiES: endoscopic minor papilla sphincterotomy; PD: pancreas divisum; ARP: acute recurrent pancreatitis.

► Fig. 1

Conclusions MiES is a safe and effective treatment in the management of PD-related ARP. The retrospective nature of the studies selected is the main limitations of the present meta-analysis. Prospective trials are needed to confirm these data.

eP420 ENDOSCOPIC PANCREATIC SPHINCTEROTOMY IN PATIENTS WITH IPMN-RELATED RECURRENT PANCREATITIS: A SINGLE CENTER EXPERIENCE

Authors Schepis T.¹, Tringali A.^{1,2}, D'Aversa F.¹, Nista E.C.¹, Familiari P.^{1,2}, Boskoski I.^{1,2}, Perri V.^{1,2}, Costamagna G.^{1,2}

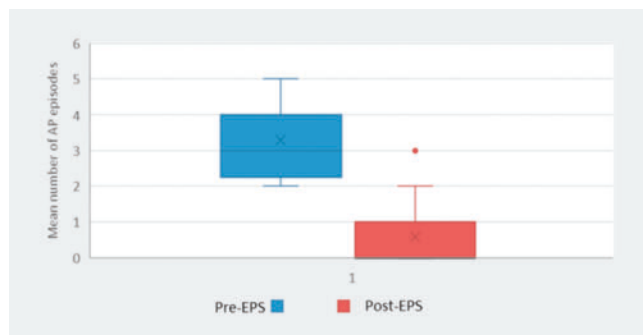
Institutes 1 Foundation Policlinico Agostino Gemelli IRCCS, Digestive Endoscopy Unit, Rome, Italy; 2 Centre for Endoscopic Research Therapeutics and Training (CERTT), Catholic University of the Sacred Heart, Rome, Italy

DOI 10.1055/s-0042-1745273

Aims Intraductal Papillary Mucinous Neoplasms (IPMNs) are a mucin producing subtype of pancreatic cysts arising from the pancreatic duct system. The thick mucous produced by IPMNs can cause an obstruction of the main pancreatic duct leading to recurrent acute pancreatitis (RAP). Endoscopic pancreatic sphincterotomy (EPS) can reduce the frequency of RAP. The aim of this study is to assess the safety and effectiveness of EPS in reducing the episodes of RAP in patients with IPMNs related RAP.

Methods Patients with IPMNs induced RAP treated with EPS from January 2004 to December 2020 were retrospectively collected. Clinical and technical data were recorded (demographics, IPMN type, number of AP episodes, type of EPS, adverse events). A clinical follow-up was performed to assess the number of AP episodes occurred after the EPS.

Results 25 patients were included (Table 1). The mean follow-up from ESP period was 93.4 months (SD \pm 56.6). The mean number of AP before and after EPS were respectively 3.29 (SD \pm 1.04) and 0.51 (SD \pm 0.71) ($p < .00001$ paired samples t-test) (Figure 1). A complete response (no further episodes of AP) and a partial response ($> 50\%$ reduction of AP episodes) were obtained in 64% and 88% of the cases, respectively. One post-EPS bleeding and one minor papilla stenosis were reported and were endoscopically managed. One patient underwent pancreatic resection for the occurrence of high-risk stigmata.



► Fig. 1

► **Table 1** Demographic and technical data of endoscopic pancreatic sphincterotomy in 25 patients with IPMNs induced RAP.

Demographics:	
No. of patients treated, n	25
Age (years), mean \pm SD	59.6 \pm 15
Sex (men), n (%)	9 (45%)
Type of IPMN:	
Main duct-IPMN, n (%)	6 (24%)
Side Branches-IPMN, n (%)	17 (68%)
Mixed type-IPMN, n (%)	2 (8%)
Endoscopic procedure:	
Major Papilla Sphincterotomy, n (%)	20 (80%)
Minor Papilla Sphincterotomy, n (%)	5 (20%)
Nose-Pancreatic Drainage, n (%)	21 (84%)
Pancreatic stent, n (%)	4 (16%)
Procedure related adverse events:	
Sphincterotomy stenosis (treated with re- sphincterotomy, no further episodes of AP)	1
Post-sphincterotomy bleeding (treated with adrenaline injection and endoclip)	1

Conclusions EPS is a safe and effective treatment to reduce the number of episodes of AP in selected patients with IPMNs-related RAP. Prospective trials are needed to confirm these data.

eP421 DEEP LEARNING CAN ACCURATELY DISTINGUISH BETWEEN LOW GRADE DYSPLASIA AND HIGH GRADE DYSPLASIA/ INVASIVE CARCINOMA IN IPMN BY UTILIZING ENDOSONOGRAPHIC IMAGES

Authors Schulz D.¹, Schmid R.¹, Abdelhafez M.¹

Institute 1 Klinikum rechts der Isar, Munich, Germany

DOI 10.1055/s-0042-1745274

Aims Management of intraductal papillary mucinous neoplasms (IPMNs) is currently consensus based on high-risk stigmata and remains a challenge. While low grade IPMNs could be stable for years favoring a watch and wait concept, high-grade IPMN possess a more timely risk of development into invasive pancreatic cancer. To date however there is no established method to distinguish low grade from high-grade IPMNs/early invasive carcinoma before surgery with an acceptable accuracy. We aimed to develop and validate a deep learning-based computer aided detection system to achieve this distinction in endoscopic ultrasound (EUS) images.

Methods We collected 4084 endoscopic ultrasound images of 55 patients who underwent pancreatectomy in our clinic. All patients had histologically proven IPMN. A convolutional neural network with pretrained weights was fine tuned to classify "low grade IPMN" from "high grade IPMN/invasive carcinoma" in 3355 training images from 44 patients. We evaluated our model on a test set with 729 images from 11 patients with no patient overlap to the training set.

Results The convolutional network classified low grade from high grade/invasive carcinoma in the test set of 729 images with an accuracy of 100%.

Conclusions This pilot study demonstrates that deep learning can predict the grade of dysplasia in IPMN from EUS images prior to surgery with high accuracy.

eP422 DIAGNOSTIC VALUE OF A SENSITIVE NEXT GENERATION SEQUENCING PANEL WITH UNIQUE MOLECULAR IDENTIFIERS (UMIS) FOR EVALUATING ROUTINE EUS-FNA SMEARS OF SOLID PANCREATIC LESIONS

Authors Schutz H.M.¹, Quispel R.¹, Atmodimedjo P.N.², Biermann K.², van Velthuisen M.², Dinjens W.N.², Bruno M.J.³, van Driel L.M.³

Institutes 1 Reinier de Graaf Gasthuis, Gastroenterology and Hepatology, Delft, Netherlands; 2 Erasmus University Medical Center, Pathology, Rotterdam, Netherlands; 3 Erasmus University Medical Center, Gastroenterology and Hepatology, Rotterdam, Netherlands

DOI 10.1055/s-0042-1745275

Aims Detection of clonal mutations may be of additional value for EUS-guided FNA. The amount of tissue on smears is often limited. Standard targeted next generation sequencing (NGS) approaches lack sensitivity to detect mutations in little material. The aim of this study was to investigate the diagnostic value of a NGS panel with unique molecular identifiers (UMI-NGS) on smears from solid pancreatic lesions with various cytological gradings according to the Bethesda criteria.

Methods Forty EUS-FNA single slide smears of solid pancreatic lesions were selected retrospectively covering the six categories of the standardized Bethesda terminology for pancreatobiliary cytology.

UMI-NGS analysis (ThermoFisher, Oncomine Colon cfDNA Assay) was performed on all samples. The results of both cytology and NGS analyses were compared with the definite diagnosis after surgery or at least one year of follow-up.

Results The cytological diagnosis was correct, compared to the follow-up, in 63% of the cases. NGS analysis was performed successfully in 83% of the cases based on one smear slide with a UMI-NGS panel. UMI-NGS altered the morphological diagnosis (b5 to b6) in 2 out of 33 cases (6%). For the morphological diagnoses non-diagnostic, benign and atypical, UMI-NGS did not lead to addi-

tional malignant diagnosis whereas > 50 % of these cases proved malignant during follow-up (Table 1).

► Table 1

Morphology	Non-diagnostic	Benign	Atypical
Number of cases	3	7	3
UMI-NGS panel result	2 insufficient material	3 insufficient material	2 insufficient material
	1 no mutations found	3 no mutations found	1 no mutations found
		1 KRAS mutation only	
Follow-up	2 malignant	4 malignant	3 malignant
	1 benign	3 benign	

Conclusions In this pilot study UMI-NGS analysis was of limited additional value to the morphological evaluation of a single FNA smear. Non-diagnostic FNA smears all remained non-diagnostic after NGS. Results of UMI-NGS analysis can be helpful in diagnosing pancreatic malignancies when the pathologist is doubtful.

eP423 PROVIDING THE PATHOLOGIST WITH CLINICAL INFORMATION IMPROVES THE READING AND INTERPRETATION OF EUS-GUIDED TISSUE ACQUISITION OF SOLID PANCREATIC LESIONS

Authors Schutz H.M.¹, Quispel R.¹, van Velthuysen M.², Bruno M.J.³, van Driel L.M.³

Institutes 1 Reinier de Graaf Gasthuis, Gastroenterology and Hepatology, Delft, Netherlands; 2 Erasmus University Medical Center, Pathology, Rotterdam, Netherlands; 3 Erasmus University Medical Center, Gastroenterology and Hepatology, Rotterdam, Netherlands

DOI 10.1055/s-0042-1745276

Aims EUS-guided tissue acquisition is the most sensitive method to collect tissue samples of solid pancreatic lesions. The availability of clinical information might aid the pathologist's ability to establish a diagnosis. The aim of this study was to investigate the diagnostic accuracy and agreement of cytotechnicians and pathologists in the evaluation of EUS-FNA samples of solid pancreatic lesions and the impact of clinical information on agreement and diagnostic accuracy.

Methods Forty EUS-FNA smears were collected retrospectively and reviewed by eight cytotechnicians and sixteen pathologists. After a month, all participants reviewed the smears again, but in a different order. Clinical information was available in half of the cases in the first round, and for the other half of the cases in the second round. The participants were blinded to the purpose of this study. The diagnostic accuracy is described as the proportion of smears that is correct, compared to the final follow-up diagnosis. Inter-observer agreements are calculated using unweighted Fleiss' kappa statistics.

Results The diagnostic accuracy based on smears only was significantly higher with clinical information compared to without clinical information (45 % versus 38 %, p-value 0.002). The overall agreement among participants without clinical information was fair (κ 0.225). With clinical information the overall agreement was significantly higher compared to the agreement without clinical information (κ 0.271, p-value of the difference = 0.018).

Conclusions Adding clinical information to the pathology requisition form improves the diagnostic reproducibility and diagnostic accuracy of EUS-FNA smears of solid pancreatic lesions.

eP424 COMBINED ENDOSCOPIC STENTING FOR CONCOMITANT MALIGNANT GASTRIC OUTLET OBSTRUCTION (GOO) AND MALIGNANT BILIARY OBSTRUCTION (MBO): DATA FROM A SINGLE REFERRAL CENTER

Authors Di Mitri R.¹, Scimeca D.¹, Amata M.¹, Lo Mastro M.¹, Bonaccorso A.¹, Conte E.¹, D'Agostino D.¹, Scrivo B.¹, Cali A.¹, Mocchiari F.¹

Institute 1 ARNAS Civico – Di Cristina – Benfratelli Hospital, Gastroenterology and Endoscopy Unit, Palermo, Italy

DOI 10.1055/s-0042-1745277

Aims In bilio-duodenal malignant strictures, double biliary and duodenal stenting is required, as alternative approach to surgical by-pass. Aim of this study was to evaluate the technical/clinical efficacy and safety of combined endoscopic stenting, in patients with concomitant malignant GOO and MBO.

Methods From 02/2013 to 12/2021, we collected data on patients treated with combined duodenal and biliary stenting for concomitant malignant GOO and MBO, occurred simultaneously or sequentially. Malignant GOO was managed by duodenal self-expanding metal stent (SEMS); biliary drainage was achieved using trans-papillary biliary SEMS or EUS-guided Lumen-Apposing Metal Stent (LAMS) placement.

Results

► Table 1

TIMING AND TYPE OF COMBINED STENTING	N. (%)
ONE STEP	36 (49.3 %)
- Duodenal SEMS	36
- Trans-papillary biliary SEMS	22
- EUS-guided biliary drainage (LAMS)	14
TWO STEPS	37 (50.7 %)
- Biliary drainage before	25
Trans-papillary biliary SEMS	25
EUS-guided biliary drainage (LAMS)	0
Duodenal SEMS before	12
Trans-papillary biliary SEMS	3
EUS-guided biliary drainage (LAMS)	9

Seventy-three patients (39M, 53.4 %) were treated with combined duodenal and biliary stenting for concomitant malignant GOO and MBO. Biliary drainage was performed using biliary SEMS in 50 (68.5 %) and EUS-guided LAMS in 23 (31.5 %) patients.

Double duodenal and biliary stenting was performed during the same procedure (one-step) in 36/73 (49.3 %) patients, while in 37/73 (50.7 %) it was performed in two-steps. See Table 1.

Technical success of double stenting was achieved in 71/73 (97.3 %). Clinical success was obtained in 67/73 (91.8 %) for biliary drainage and in 65/73 (89.0 %) for duodenal stenting.

We observed 15/73 (20.5 %) complications [9 intra-procedural (5 self-limiting bleedings, 2 LAMS-maldeployments, 2 duodenal perforation), 6 early (pancreatitis) and 17/73 (23.3 %) late "stent-related" (13 cholangitis, 2 stent migration and 1 outlet obstruction for duodenal stent ingrowth).

Conclusions Combined stenting of bilio-duodenal malignant strictures is effective, minimally invasive, safe and alternative to surgery, thus becoming the standard of palliative care in this setting, especially in a referral center for bilio-pancreatic diseases.

eP425 UPPER GASTRO INTESTINAL BLEEDING AND CIRRHOTICS- A SINGLE CENTRE OBSERVATIONAL STUDY FROM SOUTH INDIAN POPULATION

Authors Sebastian S.¹, Susan Roy D.J.^{2,3}, Sebastian D.B.⁴, Mathai D.S.K.⁵

Institutes 1 Mount Zion Medical college, Gastroenterology, Adoor, India;

2 Mount Zion Medical college, Assistant professor, Adoor, India; 3 Mount

zion Medical College, Periodontics and Nutrition, Pathnamthitta, India;

5 Medical Trust Hospital, Gastroenterology, Kochi, India; 6 Medical Trust

Hospital, gastroenterology, Kochi, India

DOI 10.1055/s-0042-1745278

Aims The etiology of upper gastrointestinal bleed in cirrhotics (UGIB) is variable in different geographical regions. Epidemiological data are helpful in knowing the burden of the problem. This study was conducted to know the spectrum, mortality, morbidity, and predictors of outcome in patients with Cirrhotics presenting with acute UGIB.

Methods We retrospectively analyzed the data of patients admitted to our hospital between April 2020 and April 2021, with UGIB and cirrhosis and noted the clinical presentation, etiology of bleed, and outcome.

Results A total of 134 patients (83.58% male, (16.41% female (male: female ratio: 5:1)) of UGIB were included in the study. The mean age of the patients was 52.31 ± 15.3 years. The most common etiology of UGIB in cirrhotics was Variceal related (83.21%) followed by Erosive mucosal disease and Peptic ulcer related 28 (24.81%). Majority of patients were managed endoscopically. The mean duration of hospital stay was 6.6 ± 5.79 days. Re bleeding was seen in 7 patients but None of them underwent surgery. In hospital, mortality was 2.6%. Age ≥ 65 years (odds ratio [OR]: 9.5, 95% confidence interval [CI]: 3.108-29.266), serum albumin 2 mg/dl (OR: 4.1, 95% CI: 1.068-8.591) were associated with increased mortality.

► **Table 1** Variables analyzed for outcome.

Parameters (Mean)	Variceal (n=112)	Non variceal (n=22)	P
Platelet count x 10 ³ cells/cumm	94 ± 63.34	43.01 ± 109	0.002
Blood urea (mg/dl)	52.32 ± 37.96	59.43 ± 44.3	0.176
Creatinine(mg/dl)	1 ± 0.92	0.94 ± 0.83	0.363
Albumin(g/dl)	2.31 ± 0.74	3.8 ± 0.43	000

Conclusions Cirrhotics may present with non variceal sources of UGI bleeding though variceal bleeding is still the most common cause of UGIB. Rebleed rate, need for surgery, and mortality due to UGIB are declining. Elderly age (>65), hypoalbuminemia(serum albumin < 3mg/dl) and renal dysfunction are important factors associated with increased mortality.

eP426 ASSESSMENT OF RISK VARIABLES AND MORBIDITY IN PATIENTS WITH CIRRHOTIC WITH ASSOCIATED PORTAL VEIN THROMBOSIS IN A SINGLE ASIAN CENTRE -A OBSERVATIONAL STUDY

Authors Sebastian S.¹, Roy J.², Sebastian B.³, Mathai S.K.³

Institutes 1 Mount Zion Medical college, Gastroenterology, Adoor, India;

2 Mount zion Medical College, Periodontics and Nutrition, Pathnamthitta,

India; 3 Medical Trust Hospital, Gastroenterology, Kochi, India

DOI 10.1055/s-0042-1745279

Aims To Study was done to determine the various risk factors and prognostic factors of newly detected portal vein Thrombosis(PVT) in Cirrhotics. In hospital complications and short term mortality were also followed up.

Methods Hospitalized cirrhotic patients were segregated into the PVT and non-PVT groups. Various clinical and laboratory parameters are included in the study. Indices possibly associated with PVT were measured. PVT was detected by both Doppler US and CECT abdomen. The SPSS soGware was used for all statistical analyses. All quantitative data were expressed as mean ± standard deviation. Multivariate binary logistic regression was performed and the model was estimated using the step wise backward method.

Results 700 cirrhotic patients screened over 2 years period, 178 patients who full fill the inclusion criteria were included in our study. 56 (8%) had portal vein thrombosis. Majority of PVT were found in males aged 55 ± 12 years. Most common presentation were gastrointestinal bleeding, abdominal distention, fever, jaundice, and hepatic encephalopathy. Most common site of portal vein thrombosis was PV trunk. NASH followed by alcohol related cirrhosis was the major etiology for cirrhosis in PVT.

Conclusions Some of the previously hypothesized risk factors for PVT, such as advanced age, male gender, smoking status, alcohol consumption, systemic hypertension, and D.M however were not associated with portal vein thrombosis in our study. Lower Blood platelet, Splenic diameter and Haemoglobin levels were found statistically significant risk factor for portal vein thrombosis. There were no in hospital complications.

eP427 THE IMPACT OF COVID-19 ON SURVEILLANCE OF PATIENTS WITH PANCREATIC CYSTIC NEOPLASMS (PCN)

Authors Sengupta S.¹, Kelleher B.¹, Leyden J.¹, Bennett G.¹, Murphy C.¹

Institute 1 Mater Misericordiae University Hospital, Gastroenterology, Dublin, Ireland

DOI 10.1055/s-0042-1745280

Aims Correct surveillance of Pancreatic cystic neoplasms (PCN) may prevent progression to pancreatic cancer. European guidelines recommend MRI surveillance of PCN's in suitable patients. The COVID-19 pandemic has impacted cancer surveillance programs in Ireland.

Our aim is to assess the impact of COVID-19 on the Mater Misericordiae University Hospital's (MMUH) PCN surveillance program.

Methods A retrospective review of the PCN database was performed to identify patients with a radiological diagnosis of PCN undergoing active surveillance. Dates of surveillance due and delays were computed.

Results 43 patients are undergoing active radiological follow-up for a PCN with a median age of 69 years.

33 patients were due surveillance in 2020. 11(33%) of these scans were delayed. The average length of delay was 9 months(SD 7.76).

38 patients were due surveillance in 2021. 18 patients (47.4%) have had their correct surveillance incremental scan. 7 patients(18.4%) had their scan performed but experienced an average delay of 3 months(SD 1.86).

The remaining 13 (34.2%) of scans have been deferred indefinitely due to lack of capacity.

4 patients(9%) have not had any radiological surveillance since the start of the pandemic.

There have been no cancer diagnoses so far in this cohort over the pandemic period.

Conclusions The PCN surveillance program in MMUH has been significantly impacted by COVID-19. Delays were evident in 2020 but the most significant impact is noted in 2021 with over one-third of scans, deferred indefinitely. Delays have not resulted in a cancer diagnosis however, the long-term impact of COVID-19 will only become apparent in the future.

eP428 ACUTE PANCREATITIS AND INTRAGASTRIC BALLOON

Authors Sina M.¹, Bilaj F.², Pemaj X.¹, Pifti S.¹, Hysa A.¹

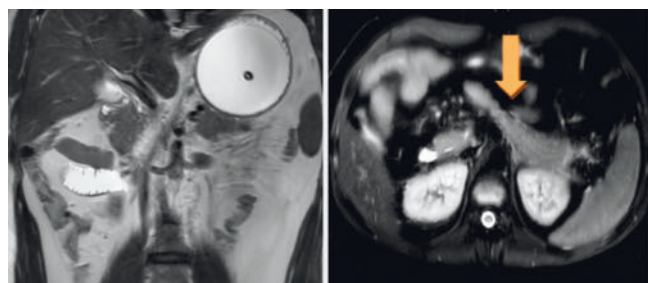
Institutes 1 University Hospital Center Mother Teresa, Internal Medicine, Division of Gastrohepatology, Tirana, Albania; 2 University Hospital Center Mother Teresa, Radiology Department, Tirana, Albania

DOI 10.1055/s-0042-1745281

Aims The prevalence of obesity is increasing worldwide; it has become a major health problem even in low to middle income countries. Intra-gastric balloon (IGB) has been confirmed as an effective weight loss treatment. We aim to present a case of acute pancreatitis following IGB insertion.

Methods We present a case of a 25-year-old male, admitted at our emergency department with acute onset of epigastric pain, nausea and vomiting, one month after IGB insertion.

Results The diagnosis of acute pancreatitis was made based on the clinical picture, with radiological and laboratory confirmation, after excluding other causes. Abdominal MRI demonstrated evidence of pancreatitis with minimal fluid and inflammation of peripancreatic fat. There was evidence of IGB compressing the body and tail of the pancreas. Despite conservative treatment, patient's symptoms and laboratory markers improved only after endoscopic IGB removal. Endoscopic placement of IGB is considered safe compared to surgical treatment of obesity. Pancreatitis may be due to IGB pancreatic compression and/or dislodgement of the catheter into the second part of the duodenum. In our patient, acute pancreatitis developed due to the mass effect of IGB on the pancreas, and no migration. The symptoms improved, lipase and amylase returned to normal levels after IGB removal.



► Fig. 1

Conclusions IGB-induced pancreatitis is a rare but significant complication. Pancreatic compression appears to be the most important causing factor. Further studies are needed to determine the appropriate definitive treatment.

eP429 SECONDARY TUMORS OF THE PANCREAS: A MULTICENTER ANALYSIS OF CLINICOPATHOLOGICAL AND ENDOSONOGRAPHIC FEATURES

Authors Spadaccini M.¹, Crinò S.F.², Fantin A.³, Rahal D.⁴, Manfrin E.⁵, Gavazzi F.⁶, Bozzarelli S.⁷, Conti Bellocchi M.C.², Maselli R.⁸, Anderloni A.⁸, Fugazza A.⁸, Frulloni L.², Repici A.⁸, Carrara S.⁸

Institutes 1 Humanitas Clinical and Research Center, Digestive Endoscopy Unit, Division of Gastroenterology, Rozzano, Italy; 2 Gastroenterology and Digestive Endoscopy Unit, The Pancreas Institute, G.B. Rossi University Hospital, Verona, Italy; 3 Istituto Oncologico Veneto IOV-IRCCS, Gastroenterology Unit, Padova, Italy; 4 Humanitas Clinical and Research Center, Department of Pathology, Milano, Italy; 5 Department of Diagnostics and Public Health, G.B. Rossi University Hospital, Verona, Italy; 6 Humanitas Clinical and Research Center, Pancreatic Surgery Unit, Milano, Italy; 7 Humanitas Clinical and Research Center, IRCCS, Humanitas Cancer Center, Medical Oncology and Hematology Unit, Milano, Italy; 8 Humanitas

Clinical and Research Center, Digestive Endoscopy Unit, Division of Gastroenterology, Milano, Italy

DOI 10.1055/s-0042-1745282

Aims Many extrapancreatic tumors may secondarily involve the pancreas (3-12%). However, most evidences are based on retrospective analysis of autopsies and surgical series. The aim of this study was to describe clinical, endosonographic, and pathological features of secondary tumors of the pancreas, along with their therapeutic approach and related outcomes.

Methods We performed a retrospective review of all consecutive histologically confirmed secondary pancreatic tumors referred to five Italian centers between 2010 and 2021. Demographic, clinical, treatment and outcome data were collected. The EUS-related characteristics of the lesions (size, location, number of focal masses, echotexture and vascularization) and the tissue acquisition procedures (needle, passages, histology) were also collected.

Results One-hundred-sixteen patients (Male/Female: 69/47; mean age: 66.7 ± 10.1 years) with 236 histologically confirmed pancreatic metastases were included in the analysis, with kidney being the most common primary neoplastic site. EUS was performed in order to confirm the diagnosis in 205 pancreatic lesions (101 patients), mostly solitary (n = 59), hypoechoic (n = 95) hyper-vascular (n = 60) with well-defined borders (n = 52). EUS-guided fine needle sampling was performed in 94 patients with an overall accuracy of 97.9% (2.4 ± 1.3 needle passes) (range: 1-4). A histologic evaluation was possible in 88.3% of patients and the final diagnosis was obtained in all cases. When cytology alone was performed, the final diagnosis was obtained in the 83.3% of cases. Sixty-seven patients underwent either chemo- or radiation therapy. In 45 patients (38.8%) the surgical approach was attempted.

Conclusions Metastases to the pancreas are a possible occurrence in the natural history of various solid tumors. They are mostly solitary, hypoechoic, hyper-vascular lesions with well-defined borders, and EUS-guided sampling with fine needle biopsy (FNB) needles may be suggested.

eP430 THE ROLE OF ENDOSCOPIC MANAGEMENT OF POST ORTHOTOPIC LIVER TRANSPLANT ANASTOMOTIC STRICTURES: EXPERIENCE IN A TERTIARY TRANSPLANT CENTRE

Authors Stack R.^{1,2}, Conlon C.³, Doherty J.^{1,2}, O'Morain N.^{1,2}, Mc Cormick A.^{3,2}, Cullen G.^{1,2}, Mulcahy H.^{1,2}

Institutes 1 St. Vincent's University Hospital, Gastroenterology, Dublin, Ireland; 2 University College Dublin, Dublin, Ireland; 3 St. Vincent's University Hospital, Hepatology, Dublin, Ireland

DOI 10.1055/s-0042-1745283

Aims To determine the effect of endoscopic management on post orthotopic liver transplant (OLT) anastomotic strictures.

Methods A retrospective review of the incidence and treatment of post OLT anastomotic strictures at a tertiary transplant centre. Post OLT anastomotic strictures were analysed for rate of ERCP procedure success and incidence of stricture resolution versus surgery.

Results 386 OLTs were performed between 2014 and 2020. 28 (7%) were referred for ERCP due to anastomotic stricture. Median age at OLT 57 years; female n = 9 (32%). The median interval from OLT to ERCP was 21 weeks (range 1-159). Successful stent placement at initial ERCP was achieved in 22 (79%) with an overall success rate of 93% following repeat ERCP. Strictures resolved in 12 (43%), while 10 (36%) were referred for hepaticojejunostomy because of continued stricturing. Two patients (7%) died with their stent in-situ while 4 (14%) remain under active management. Median number of procedures in stricture resolution versus the surgical cohort was 3 vs 2, and median time from initial ERCP to stricture resolution 27 weeks (range 0 - 82) in those with endoscopic success. There was no statistical difference in stricture resolution with or without use of self-expanding metal stent; 7 of 11 (64%) vs 5 of 9 (56%) with plastic stents (Fisher's exact test; p = 1.00).

Conclusions Despite satisfactory technical success of ERCP in most post OLT anastomotic strictures (93 %), a high portion of patients were ultimately resistant to endoscopic therapy and subsequently required surgical intervention. Use of SEMS did not improve stricture resolution.

eP431 ASSESSMENT OF ADVANCED METHODS FOR DIFFICULT BILIARY CANNULATION

Authors Steshenko A.¹, Klymenko A.¹, Klymenko V.², Molnar I.³, Zakcharchuk A.¹, Kiosov A.¹, Tkachov V.¹

Institutes 1 Zaporizhzhia State Medical University, Faculty Surgery Department, Zaporizhzhia, Ukraine; 2 Zaporizhzhia State Medical University, Hospital Surgery Department, Zaporizhzhia, Ukraine; 3 Kyiv City Clinical Hospital № 3, Endoscopy, Kyiv, Ukraine

DOI 10.1055/s-0042-1745284

Aims Our research aim to assess the effectiveness and safety of advanced methods for difficult biliary cannulation such as needle knife precut sphincterotomy, double guide wire technique, transpancreatic biliary sphincterotomy with pancreatic stent placement.

Methods We studied 78 of successful endoscopic transpapillary intervention between 2018 and 2020 randomized into three groups. Group 1 includes 32 patients (41.02 %; age – 52.93 ± 6.7; males – 37.50 %) in whom needle knife precut sphincterotomy were performed for successful biliary cannulation after prophylactic pancreatic stenting. Group 2 consisted of 34 patients (43.58 %; age – 53.31 ± 7.6; males – 38.23 %) who underwent double guide wire technique. Group 3 consisted of 12 patients (15.38 %; age – 50.31 ± 6.8; males – 83.33 %) who underwent transpancreatic biliary sphincterotomy. All statistical analyses were performed using SPSS V20.0 software (IBM).

Results Occurrence of severe form of acute pancreatitis was higher in 3d group in cases without pancreatic stent placement. In the 2d group had a reduced level of complications in general cohort ($p < 0.05$). There is no difference in rate of other complications between randomized groups ($p > 0.05$).

Conclusions Pancreatic duct stent placement is mandatory for advanced cannulation techniques. The double guide wire technique with pancreatic duct stent placement helps reduce incidences of post-procedural acute pancreatitis and other complications. The cases of needle knife precut sphincterotomy and transpancreatic biliary sphincterotomy without of pancreatic stenting have a higher rate of complications.

eP432 PANCREATIC CYSTIC FLUID GLUCOSE LEVEL IN THE DIAGNOSIS OF MUCINOUS PANCREATIC CYSTS: A SINGLE CENTRE EXPERIENCE

Authors Stigliano S.¹, Di Matteo F.M.¹

Institute 1 Campus Bio-Medico University Hospital, Endoscopy Department, Rome, Italy

DOI 10.1055/s-0042-1745285

Aims Available intra-cystic biomarkers have low accuracy in distinguishing pancreatic cystic neoplasm (PCN). Glucose is an attractive alternative due to its availability and low cost.

We aimed at assess the role of intra-cystic glucose level in the diagnosis of mucinous PCN.

Methods Prospective observational study on consecutive patients with PCN receiving EUS FNA at the Endoscopy department of Campus Bio-medico University Hospital of Rome.

The cut-off of intra-cystic value used to distinguish mucinous cysts from not mucinous cysts was 50 mg/dl.

A $p < 0.05$ was considered statistically significant.

Results From March 2018 to September 2021, 56 patients were enrolled (32 % male; mean age 64 ± 16 year old). Intra-cystic glucose < 50 mg/dl was observed in 58.9 %. The final diagnosis was "mucinous" in 51.7 % PCN.

The mean value of intra-cystic glucose was lower in mucinous cyst (23 ± 28 vs 56 ± 42 p 0.001).

The presence of intra-cystic glucose < 50 mg/dl was associated with higher rate of mucinous cysts (75.8 % vs 24.1 % p 0.01).

Sensitivity was 75.8 % (95 % CI 56.5-89.7) and specificity was 59.3 % (95 % CI 38.8- 77.6). The PPV and the NPV were respectively 66.7 % (95 % CI 54.8-76.7) and 69.6 % (95 % CI 52.7-82.4).

A ROC curve analysis showed the best glucose cut-off of 66 mg/dl had a sensitivity of 93 % and specificity of 52 % (AUC 0.74 (p 0.001).

Conclusions Intra-cystic level of glucose is lower in mucinous cysts. A cut off of 66 mg/dl seems to have higher accuracy in the diagnosis of mucinous cysts but larger studies are necessary to confirm it.

eP433 ENDOSCOPIC ULTRASOUND GUIDED BILIARY DRAINAGE IN MALIGNANT HILAR OBSTRUCTION- EXPERIENCE FROM TERTIARY CARE ONCOLOGY CENTER IN INDIA

Authors Sundaram S.¹, Mane K.¹, Jain A.K.¹, Tyagi U.¹, Chhanchure U.¹, Seth V.¹, Patil P.¹, Mehta S.¹

Institute 1 Tata Memorial Hospital, Department of Digestive Diseases and Clinical Nutrition, Mumbai, India

DOI 10.1055/s-0042-1745286

Aims Endoscopic Ultrasound guided biliary drainage (EUS-BD) is an alternative in patients with distal biliary obstruction and failed ERCP. Data on EUS-BD in hilar obstruction is sparse. We retrospectively analysed outcomes of EUS-BD in malignant hilar obstruction.

Methods Retrospective review of endoscopy database was done for patients who underwent EUS-BD for malignant hilar obstruction between January 2019 and November 2021. Demographic details, imaging findings, primary malignancy, reason for considering EUS-BD and biochemical investigations were noted. Technical and functional success (decrease in bilirubin by > 50 % at 2 weeks and/or normalization at 4 weeks) was noted.

Results 16 patients were included in the analysis (Mean age- 55.6 years, 43.8 % male). Carcinoma Gall bladder (6/16, 37.5 %) was most common underlying malignancy. Four (25 %) patients had cholangitis at presentation. EUS-BD was done due to inaccessible papilla in 12 (75 %) patients, and failed CBD cannulation in 4 (25 %) cases. Puncture of intrahepatic biliary tree was technically successful in all patients (100 %). Cholangiogram showed Bismuth type I block in 11 (68.75 %) cases, type II block in 4 (25 %) cases, and type IV block in 1 case. Stent placement was done in 15 patients (EUS-BD abandoned in Type IV block and PTBD done). 12/15 patients (80 %) underwent antegrade stent placement, while 3/15 (20 %) underwent hepaticogastrostomy. Functional success was seen in all patients (100 %). One patient developed post procedure pancreatitis.

► Table 1

Primary malignancy	Gall Bladder – 6/16 (37.5 %) Pancreas – 5/16 (31.25 %) Hilar Cholangiocarcinoma – 4/16 (25 %) Duodenal carcinoma with periportal adenopathy- 1/16 (6.25 %)
Status of primary disease	Metastatic – 11/16 (68.75 %) Locally advanced – 4/16 (25 %) Resectable – 1/16 (6.25 %)
Mean baseline bilirubin	14.045 ± 7.1 mg %
Site of puncture	Segment III – 12/16 (75 %) Segment II – 4/16 (25 %)
Mean bilirubin at 2 weeks after EUS-BD	4.68 ± 5.1 mg %

Conclusions EUS-BD is a safe and effective alternative to PTBD in patients with hilar biliary obstruction after failed ERCP. Larger comparative trials between EUS-BD and PTBD in hilar obstruction are needed.

eP434 DATA ENVELOPMENT ANALYSIS APPROACH TO PREDICT RISK FACTORS FOR POST-ENDOSCOPIC RETROGRADE CHOLANGIOPANCREATOGRAPHY PANCREATITIS

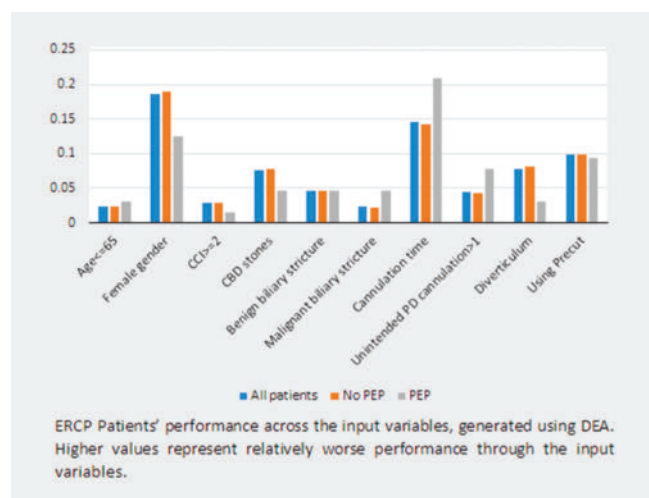
Authors Tabak F.^{1,2}, Assani S.³, Zhang F.^{2,1}, Lu X.¹, Gao W.¹

Institutes 1 Sir Run Run Hospital, Nanjing Medical University, Nanjing, China; 2 Second Affiliated Hospital of Nanjing Medical University, Medical Center for Digestive Diseases, Nanjing, China; 3 Nanjing University of Aeronautics & Astronautics, Department of Mathematics, Nanjing, China
DOI 10.1055/s-0042-1745287

Aims Determining the characteristics of patients who develop post-endoscopic retrograde cholangiopancreatography pancreatitis (PEP) is an important direction to improve ERCP performance. However, the rarity of specific adverse events such as PEP mostly violates the sample size requirement of multivariate analysis, leading to inaccurate risk prediction. To overcome this issue, we propose an approach based on data envelopment analysis (DEA), a data-driven method, to identify reliable predictive factors associated with the incidence of PEP.

Methods The DEA-based approach is implemented to a set of 10 inputs including the indications and cannulation-related variables, with PEP as an output within a decision-making system that retrospectively analyzes the evolution of ERCP patients. Using the clustering technique of DEA, we generated an overall inefficiency index to classify patients based on the relative efficiency performance across different variables and identify specific variables that potentially contribute to the inefficient performance.

Results PEP was developed in 32 /615 patients who underwent ERCP with native papilla (5.2%). The attached figure provides a concise description of the patients' performance across the input variables, with higher values representing relatively worse performance. We noted that patients who had PEP showed highly suboptimal performances for cannulation duration and unintended PD cannulation. However, using precut to achieve biliary cannulation was not directly associated with PEP.



► Fig. 1

Conclusions To our knowledge, this is the first attempt at developing a PEP prediction model using mathematical approaches, DEA. Herein, we found that long cannulation time and unintended PD cannulation > 1 contribute as factors significantly related to PEP.

eP435 ENDOSCOPIC RETROGRADE CHOLANGIO-PANCREATOGRAPHY IN THE MANAGEMENT OF IATROGENIC BILE DUCT INJURY

Authors Tishkov I.¹, Karagoyozov P.¹, Jecheva I.¹

Institute 1 Acibadem City Clinic Tokuda Hospital, Interventional Gastroenterology, Sofia, Bulgaria
DOI 10.1055/s-0042-1745288

Aims The aim of this study was to assess the role of endoscopic retrograde cholangiopancreatography (ERCP) in the management of iatrogenic bile duct injuries.

Methods Data was collected retrospectively from April 2015 to November 2021. All the patient included in the study had bile duct injuries caused by gastrointestinal surgery.

Results We present a case series of fifty four patients (N = 54, 22 men, 32 women, mean age 62.7). Twenty three of the bile duct injuries occurred due to conventional cholecystectomy, twenty four by laparoscopic cholecystectomy, four by echinococcectomy, two by metastasectomy and one by trauma of the liver. Thirty seven patients had bile leak only (68.5%): eighteen lesions on ductus cysticus, four on ductus choledochus, eight on ductus hepaticus communis, three on ductus hepaticus sinister and four on ductus hepaticus dexter. Seven patients had postoperative biliary stenosis (12.9%), nine patients had bile duct obstruction (16.6%) and one patient had both bile leak and biliary stenosis (1.8%). Thirty six of the patients were successfully treated by ERCP and eighteen of them were surgically treated. The type of IBDI was a statistically significant prognostic factor in determining the success rate of non-surgical treatment. In addition, a shorter time to diagnosis of BDI after the operation correlated significantly with higher success rates in the treatment. Technical and long-term clinical success was achieved in 66.6%.

Conclusions Management of bile duct injury requires a multidisciplinary team approach incorporating endoscopists, hepatobiliary surgeons and depends on the timing of recognition of injury, the extent of bile duct injury and patient's condition.

eP436 SUBOPTIMAL ADEQUACY OF EUS-GUIDED TISSUE ACQUISITION FOR PANCREATIC TUMORS OF THE HEAD/UNCINATE. WHAT IS THE ROLE OF FIBROSIS?

Authors Togliani T.¹, Lisotti A.², Rinaldi R.³, Pilati S.¹, Fusaroli P.²

Institutes 1 Hospital of Mantova, Gastroenterology Unit, Mantova, Italy; 2 University of Bologna, Hospital of Imola, Gastroenterology Unit, Imola, Italy; 3 Hospital of Mantova, Pathology Unit, Mantova, Italy
DOI 10.1055/s-0042-1745289

Aims The aim of this study was to compare the adequacy of pancreatic EUS-guided tissue acquisition with the fibrosis of the specimens.

Methods Our pathologists reassessed the FNA/FNB specimens effected since 2007 for pancreatic solid focal lesions according to two new scores for grading the adequacy (inadequate, low, moderate, optimal) and the fibrosis (absent, mild, severe) of the acquired tissue.

Results 316 FNA and 91 FNB were included; overall adequacy was 90.2%; fibrosis was assessable in 98.6% of the adequate cases. Adequacy was moderate/optimal in 89.2% of cases with absent/mild fibrosis and in 55.6% of cases with severe fibrosis. The head-uncinate of the pancreas compared to the neck-body-tail appeared more fibrotic (45.2% of cases vs 28.9%) and showed a lower adequacy (87.8% vs 95.8%), regardless of the histotype of the tumor and of the type/size of the needle used. Finally, the adequacy was independently related to the number of needle passes (83.6% after ≤ 2, 93.9% after ≥ 3). Adequate cases negative for malignancy generally showed high fibrosis and low adequacy scores, and they turned out to be a cancer in 37.5% of cases after one-year follow-up.

Conclusions These new adequacy and fibrosis scores can be usefully applied on pancreatic FNA and FNB specimens. In the head-uncinate the fibrosis is higher and the adequacy is lower; thus, especially in these sites, the execution of at least 3 needle passes is recommended. Not malignant FNA/FNB findings, mainly when the fibrosis score is high or the adequacy score is low, often hide a false negative diagnosis.

eP437 BRUSH CYTOLOGY IN ERCP PATIENTS – FEATURES AND PERFORMANCE AS A DIAGNOSIS TOOL

Authors Topala M.¹, Ionescu V.², Iacob R.¹, Gheorghe C.¹

Institutes 1 Fundeni Clinical Institute, Gastroenterology, Bucharest, Romania; 2 Bucharest Emergency Hospital, Epidemiology, Bucharest, Romania

DOI 10.1055/s-0042-1745290

Aims Brush cytology is widely used in endoscopic retrograde cholangiopancreatography (ERCP) for the evaluation of indeterminate biliary strictures, although its moderate sensitivity represents a challenge in clinical practice. We aim to evaluate the performance of brush cytology as a diagnosis test for neoplastic strictures, as well as factors associated with malignancy in brush cytology results.

Methods We retrospectively analysed 152 patients that performed ERCP for indeterminate biliary stricture between June 2016 and November 2021 in Fundeni Clinical Institute, Bucharest. Brush cytology specimens were collected for 47 patients. Diagnosis of neoplastic stricture was established after evaluating biochemical, radiological and histopathology results.

Results The mean age was 66.19 ± 12.29 years old and 68.1 % of patients were males. Neoplastic biliary stricture was diagnosed in 63 % of patients – 37 % cholangiocarcinoma, 17.4 % pancreatic cancer, 4.3 % ampullary tumour and 4.3 % other malignant causes. Brush cytology results were positive for malignancy in 46.8 % of patients. Positive cytology was associated with proximal biliary dilatation ($p = 0.07$) and with higher values of direct bilirubin ($p = 0.45$), tumoral marker CA 19-9 ($p = 0.43$) and alkaline phosphatase ($p = 0.23$). As compared to the final diagnosis, brush cytology has sensitivity of 68.96 % and specificity of 88.23 %.

Conclusions Our results reported moderate sensitivity for brush cytology as a diagnosis test for malignancy in biliary strictures, similar to literature data. Positive brush cytology associated with factors such as bile ducts dilatation and biochemical markers.

eP438 ABSENCE OF CHOLEDOCHUS: AN EXCEPTIONAL ABNORMALITY OF THE BILIARY TRACT

Authors Torres Monclús N.¹, Pijoan Comas E.², Miguel Salas I.¹, Torres Vicente G.¹, Bayas Pastor D.¹, Vazquez Gomez D.¹, Zaragoza Velasco N.¹, Gonzalez-Huix Llado F.²

Institutes 1 Hospital Arnau de Vilanova, Lerida, Spain; 2 Clinica Girona, Girona, Spain

DOI 10.1055/s-0042-1745291

Aims Demonstrate an uncommon anatomic variation in biliary anatomy

Methods Use of imaging techniques and ERCP

Results 77-year-old patient with acute cholangitis. In the imaging study, a variant of normality is detected: right and left hepatic ducts converge at the distal intrapancreatic level with the consequent absence of a common hepatic duct. Likewise, the cystic duct has a very low implantation, in the same region of confluence. A 5mm stone was observed in the cystic duct and another in the duct confluence area. ERCP was performed with removal of the impacted stone at the suprapapillary level. On injecting contrast, cystic and what appears to be choledochus, replenished. Contrast reflux into a third duct, suspecting a malformation of the choledochus insertion. It was not possible to extract the lithiasis located in cystic, so a double pigtail plastic stent was placed in the gallbladder. He was readmitted for a new episode of cholangitis. A second ERCP is

performed: spontaneous migration of the cystic stent. At 7-8mm from the papilla, confluence of right and left hepatic ducts was observed that cross between them: the right goes to the left and the left goes to the right, with the absence of common bile ducts and choledochus. Cystic with obstructive lithiasis implanted about 5-6 mm from the bifurcation in the left hepatic duct.



► Fig. 1

Conclusions Anatomical variants of the bile ducts are frequent, although the absence of choledochus is exceptional. Their knowledge is of the utmost importance during invasive bile duct procedures to avoid incidental bile duct injury.

eP439 PERFORMANCE OF P2/MS NON-INVASIVE INDEX IN THE PREDICTION OF HIGH-RISK ESOPHAGEAL VARICES

Authors Trad N.¹, Mohamed G.¹, Bizid S.¹, Gamgami I.¹, Ben Slimane B.¹, Boughoula K.¹, Ben Abdallah H.¹, Bouali R.¹, Abdelli M.N.¹

Institute 1 Military Hospital Of Tunis, Tunis, Tunisia

DOI 10.1055/s-0042-1745292

Aims Acute variceal bleeding is a life-threatening complication of portal hypertension. Our objective was to evaluate the performance of the P2/MS non-invasive index using complete blood counts in the prediction of high-risk esophageal varices (HRV).

Methods We performed a retrospective analysis of data from consecutive cirrhotic patients followed in our department, recruited from January 2010 to December 2019. The P2/MS score was calculated using the following formula: $(\text{platelet count})^2 / [\text{monocyte fraction}(\%) \times \text{segmented neutrophil fraction}(\%)]$.

Results A total of 224 patients were included with an average age of 61.02 ± 13.2 years and a sex ratio of 1.6. The main etiology of cirrhosis was viral infection C (32.1 %) followed by viral infection B (22.8 %) and non-alcoholic steatohepatitis (21.4 %). One hundred and seventy patients had One HRV (75.9 %). Patients without HVR had a higher P2/MS score value compared to patients with HVR (103.58 ± 185.3 vs 27.99 ± 64.81 ; $p < 0.001$). The area under the ROC curve of P2/MS score was 0.745 [95 % IC: 0.658-0.832]. At a cut-off of P2/MS < 12 , the positive predictive value of the presence of HRV in patients with cirrhosis was 90.11 % while, at a cut-off of P2/MS > 18 , the negative predictive value of P2 / MS score was 87.82 %.

Conclusions In our study, P2/MS score, which was a simple and useful score for predicting HRV, could allow better risk stratification. Patients with P2/MS > 18 may avoid endoscopy while those with P2/MS < 12 should be considered for adequate prophylactic treatments.

eP440 EFFICACY OF AGGRESSIVE PERIPROCEDURAL HYDRATION IN THE PREVENTION OF POST-ERCP PANCREATITIS: AN OBSERVATIONAL STUDY

Authors Tripodi G.¹, Giannitti S.¹, D'ambra G.¹, Annibale B.¹, Angeletti S.¹

Institute 1 "Sapienza", University of Rome, Department of Gastroenterology and Gastrointestinal Endoscopy, Rome, Italy

DOI 10.1055/s-0042-1745293

Aims Post-endoscopic retrograde cholangiopancreatography (ERCP) pancreatitis (PEP) is the most common complication of ERCP. Aggressive periprocedural hydration (APH) in addition to rectal administration of NSAIDs has been proposed to further reduce incidence of PEP with discordant results. We aimed to evaluate the added value of APH in reducing incidence of PEP in patients undergoing ERCP.

Methods We prospectively evaluated all consecutive patients undergoing ERCP in our center between 2019 and 2021. All patients received administration of rectal NSAIDs. According to the admission ward, (Gastroenterology versus Surgery) patients would undergo APH or normal hydration, respectively. Anthropometric, clinical and procedural characteristics were collected. Procedures were categorized in high- and low-risk of PEP (ESGE guidelines). Multivariate analysis for factors affecting the risk of PEP were calculated.

Results In the study period 117 patients, 55 females (47 %), mean age 72.3 (± 13.8) years, were included. Indications for ERCP were common-bile-duct stones (85/117, 72 %), pancreatic adenocarcinoma (13/117, 11 %) and benign biliary strictures (12/117, 10 %). Overall, 74/117 (63.2 %) patients received APH, and 87/117 (74.3 %) procedures were defined as high-risk. Of these, 56/87 (64 %) received APH. Overall, 5/117 PEP were observed (5/5 mild severity-Atlanta criteria), 2/74 (2.7 %) in APH group and 3/43 (7 %) in normal-hydration group. At multivariate analysis, APH was not associated to lower incidence of PEP (OR 0.37 95 %CI 0.1–2.3), while high-risk procedures (OR 7.4 95 %CI 1.2–69.3) were associated to increased risk.

Conclusions APH did not result in a further reduction of PEP risk. Known risk-factors for difficult procedures were associated to increased risk of PEP.

eP441 EUS-FNA/FNB AND ERCP IN THE DIAGNOSTIC WORK-UP OF BILIARY STENOSIS: A RETROSPECTIVE STUDY

Authors Gadaleta F.¹, Troncone E.¹, Montesano L.¹, Mossa M.¹, Grasso E.¹, Monteleone G.¹, Del Vecchio Blanco G.¹

Institute 1 Department of Systems Medicine, Gastroenterology Unit, University of Rome Tor Vergata, Rome, Italy

DOI 10.1055/s-0042-1745294

Aims Defining the etiology of biliary stenosis is challenging, and endoscopic tissue sampling often shows a low diagnostic yield. We evaluated the diagnostic yield of endoscopic ultrasound (EUS) fine-needle aspiration/biopsy (FNA/FNB) and endoscopic retrograde cholangiopancreatography (ERCP) brushing/biopsy in biliary stenosis

Methods We retrospectively reviewed EUS-FNA/FNB and ERCP procedures performed in patients with biliary stenosis from November 2015 to September 2021 at the Policlinico Tor Vergata, Rome, Italy. Final diagnosis was obtained from surgical specimens or clinical/radiological follow-up

Results Fifty-two patients (31 males; median age 73, range 49–94) underwent 75 endoscopic procedures: 46 ERCP with brushing/biopsy, 23 EUS-FNB, 6 EUS-FNA (15 patients underwent both ERCP and EUS sampling; 4 patients underwent 2 ERCP, 1 patient 3 ERCP and 2 patients 2 EUS-FNA/FNB after negative histology/cytology). Malignancy was diagnosed in 28/52 (53.8 %) patients. The

sensitivity, specificity, and diagnostic accuracy of ERCP brushing/biopsies were 66.7 %, 100 %, and 84.8 % respectively, and those of EUS-FNA/FNB were 71.4 %, 100 %, and 80 %, respectively. In the cases in which both EUS-FNA/FNB and ERCP were performed, sensitivity, specificity and diagnostic accuracy were 81.8 %, 100 % and 86.6 %.

Overall, sensitivity, specificity and diagnostic accuracy of endoscopic sampling with EUS-FNA/FNB or ERCP in our population were 80.6 %, 100 % and 90 %.

Conclusions Endoscopic tissue sampling with EUS-FNA/FNB and/or ERCP brushing/biopsies showed high diagnostic yield in patients with biliary stenosis. In selected cases, performing both procedures increases sensitivity and diagnostic accuracy compared to individual procedures

eP442 USEFULNESS OF EUS-GUIDED SINGLE-STEP COMPLETE-ASPIRATION IN THE MANAGEMENT OF ABDOMINAL COLLECTIONS: EXPERIENCE FROM 2 TERTIARY CENTRES

Authors Velasquez-Rodriguez J.^{1,2,3}, Maisterra-Santos S.^{1,2,3},

Colán-Hernández J.⁴, Andujar-Murcia X.⁵, Loras-Alastruey C.⁵, Gornals J.^{1,6,3}

Institutes 1 Hospital Universitari de Bellvitge, Gastroenterology, Barcelona, Spain; 2 Universitat de Barcelona, Barcelona, Spain; 3 Instituto de Investigación Biomédica de Bellvitge (IDIBELL), Barcelona, Spain; 4 Hospital Germans

Trias i Pujol, Barcelona, Spain; 5 Hospital Universitari Mutua de Terrassa, Terrassa, Spain; 6 Universitat Oberta de Catalunya, Barcelona, Spain

DOI 10.1055/s-0042-1745295

Aims Endoscopic management of abdominal collections include endoscopic ultrasound (EUS)-guided transmural drainage, transpapillary drainage via ERCP, and EUS-guided single-step complete-aspiration (SSCA). The latter is little reported, and there are some doubts about its real effectiveness.

Methods Database review and retrospective cohort identification among two tertiary Spanish hospitals that includes abdominal collections treated by EUS-guided SSCA. The decision to apply this strategy was based on endoscopist criteria. Treatment by transmural and/or transpapillary drainage were excluded. Technical success was defined as needle access inside the collection and complete aspiration till collapse. Clinical success was defined as reduction ≥ 50 % of initial size or decrease < 50 % with clinical improvement. Failure: increased collection or need for re-intervention. Other variables: demographics, collection features, re-intervention or safety.

Results

► Table 1

Variables, features	Success	p
Sex (Men/Female), n (%)	14 (45)/10 (47)	0,86
Etiology (Pancreatic/Non-pancreatic), n (%)	18 (41)/6 (66)	0,17
Microbiology (Positive/Negative), n (%)	8 (38)/ 15 (55)	0,23
Mean collection size (success group/non-success group), mm (SD)	54,5 (16,8)/51,1 (26,1)	0,10

Fifty-two patients were included (31 men, mean age 56-y(SD 13.1)). Collection data: mean size 56-mm(SD 13.1); positive culture in 40 %; pancreatic nature in 82 % (n=43). Clinical success of 46 % (one attempt) and 55 % after a second attempt. Adverse events were detected in 5 %. Most needle type used, 19 G (87 %). Mean follow-up, 467-days (SD 437). No identification of any factor associated with clinical success. Table 1. Failed-treatment approach: 40 % conservative vs 60 % re-intervention, of which 66.6 % endoscopic (second SSCA in 4; pigtail placement in 3, lumen-apposing stent in 1), in 25 % percutaneous and 8.3 % surgery.

Conclusions In a percentage of selected abdominal collections treatment by EUS-SSCA could save a more aggressive strategy. No specific factor associated with failure of this strategy has been identified.

eP443V ENDOSCOPIC TRANSPAPILLARY RESOLUTION OF COMPLETE POSTSURGICAL TRANSECTION OF THE BILE DUCT

Authors Vila J.J.¹, Carrascosa J.¹, Salmón P.¹, Bravo S.¹, Ganuza M.¹, Jusué V.¹, Gómez M.¹, Estremera F.¹

Institute 1 Hospital Universitario de Navarra, Endoscopy Unit. Gastroenterology Dpt., Pamplona, Spain

DOI 10.1055/s-0042-1745296

42-year-old man with postoperative jaundice and complete biliary transection (Strassberg type E). A first ERCP could not achieve biliary drainage, so percutaneous external drainage is performed. The patient is referred to our hospital and in a second ERCP with manipulation of an angled tip hydrophilic guidewire, proximal biliary recannulation is achieved, passing the guidewire into the intrahepatic bile duct. A 6 cm long covered metal stent is deployed resuming transpapillary biliary drainage. These lesions usually require surgical treatment by means of hepaticojejunostomy or combined treatment. We managed to recanalize the bile duct with a purely endoscopic approach.

eP444 EARLY CHOLANGITIS AFTER BILIARY PLASTIC STENTING- ROOM TO IMPROVE. PRELIMINARY RESULTS FROM THE TEMPEST STUDY

Authors Dinescu B.¹, Bajdechi G.², Bengus A.², Voiosu T.^{2,1}, Danielescu C.², Mateescu B.^{2,1}, Voiosu R.¹, Voiosu A.^{2,1}

Institutes 1 UMF Carol Davila, Bucharest, Romania; 2 Colentina Clinical Hospital, Bucharest, Romania

DOI 10.1055/s-0042-1745297

Aims Temporary plastic biliary stenting is widely used to ensure biliary drainage in various benign or malignant settings. Indwelling stents are however prone to complications generally arising from occlusion and bacterial colonization. We aim to identify procedure and patient-specific factors associated with early cholangitis.

Methods This is a prospective, single-center, cohort follow-up study of consecutive patients in whom temporary biliary plastic stenting was performed during the study period. Clinical, biochemical, ERCP-related data were recorded, and bile was extracted prior to stenting at the index procedure. At 3 months patients were recalled, the initial stent was retrieved for analysis and a new sample of bile was obtained. The main outcome analyzed was the development of early cholangitis after initial successful stenting.

Results This interim analysis included 79 patients in whom 87 biliary plastic stents were placed at the index visit. The patients were followed up for a median of 56 days. 44 patients (56%) suffered a composite outcome (cholangitis, hospitalization or death) before the planned 3-month visit. On excluding immediate complications, 19 patients developed cholangitis after a median of 41 days from stenting. 21 patients died during follow-up, 5 of which probably due to cholangitis after stenting. Retrieved stent examination revealed no association between premature cholangitis and degree of stent occlusion, presence of bacterial colonies, positive bile cultures or prior exposure to antibiotics.

Conclusions Patient or procedure-related characteristics do not predict early cholangitis after stenting. Careful follow-up and revision earlier than 3 months in certain cases might prevent serious complications.

eP445V MANAGEMENT OF CHOLANGIOHYDATIDOSIS WITH ENDOSCOPIC RETROGRADE CHOLANGIOGRAPHY

Authors Volkanovska Nikolovska A.^{1,2}, Isahi U.^{1,2}, Nikolova D.^{1,2}, Nikolovska Trpchevska E.^{1,2}, Trajkovska M.^{1,2}

Institutes 1 University Clinic for Gastroenterohepatology, Skopje, North Macedonia, The Republic of; 2 Ss.Cyril and Methodius University in Skopje, Faculty of Medicine, Skopje, North Macedonia, The Republic of

DOI 10.1055/s-0042-1745298

A serious complication of hepatic hydatid disease is intrabiliary rupture (IBR). We present a 19-year-old male patient with acute cholangitis. His abdominal ultrasound (US) revealed multiple liver cystic lesions, two of which large and partially collapsed, and impaction of membranes into common bile duct. Endoscopic biliary drainage resulted in significantly improved patient's condition, with control US disclosing complete evacuation of one of the large collapsed liver cysts. Endoscopic retrograde cholangiopancreatography as a minimally invasive procedure has become preferred approach of IBR management, with remarkable success rates, and additional advantage of permitting elective surgery, associated with decreased morbidity and mortality.

eP448 PRE-PROCEDURE PREDICTORS OF UNNECESSARY ERCP

Authors Yavuz A.¹, Akan K.¹, Tuncer I.¹

Institute 1 Istanbul Medeniyet University, Gastroenterology, Istanbul, Turkey

DOI 10.1055/s-0042-1745301

Aims Our aim was to evaluate the risk of unnecessary endoscopic retrograde cholangiopancreatography (ERCP) in patients with suspected common bile duct (CBD) stones before the procedure.

Methods In a retrospective single-center study, we investigated the ERCP records between 12.2016- 04.2021. 30 patients with malignancy were excluded. All patients had abdominal imaging before the ERCP. Laboratory parameters were derived at the time of admission. Statistical analyses were performed using SPSS. ROC curve analysis was used to determine the cut-off values.

Results Out of 237 patients, CBD stones were removed from 128 patients (54%). 131 (55.3%) patients had choledocholithiasis, 31 patients (13.1%) had pancreatitis, 32 patients (13.5%) had cholangitis, and the rest 43 patients (18.1%) had cholestasis at the time of admission. There was a significant difference between groups by means of ALP, total bilirubin, direct bilirubin, CBD stone diameter, and CBD diameter ($p < 0.001$). According to the ROC curve analysis, the best cut-off ALP to differentiate between groups was 223 IU/L (Sens:67; Spec:67), best cut-off total bilirubin value was 3.45 mg/dL (Sens:76; Spec:76), best cut-off direct bilirubin value was 1.75 mg/dL (Sens:81; Spec:71), best cut-off CBD diameter value was 9.75 mm (Sens:52; Spec:60), and best cut-off CBD stone diameter value was 3.2 mm (Sens:62; Spec:87).

Conclusions Among all parameters, ALP, total bilirubin, direct bilirubin, CBD diameter, CBD stone diameter were statistically significant. The cut-off values were 223, 3.45, 1.75, 9.75, 3.2 respectively. Thus, both parameters may be used to predict unnecessary ERCP. Large-scale, prospective studies are needed for further conclusions.

eP449 CAN WE PREDICT A POSSIBLE MALIGNANCY BEFORE ENDOSCOPIC RETROGRADE CHOLANGIOPANCREATOGRAPHY (ERCP)?

Authors Yavuz A.¹, Akan K.¹, Tuncer I.¹

Institute 1 Istanbul Medeniyet University, Gastroenterology, Istanbul, Turkey

DOI 10.1055/s-0042-1745302

Aims Our aim was to predict the malignancy in patients with cholestasis before ERCP.

Methods In a retrospective single-center study, we investigated the ERCP records of patients between 12.2016- 04.2021. All patients had abdominal imaging before the ERCP. Laboratory parameters were derived at the time of admission. Statistical analyses were performed using SPSS. Receiver operating characteristic (ROC) curve analysis was used to determine the cut-off values for predicting malignancy pre-ERCP.

Results 267 patients were included in the analysis. In ERCP, 35 (13.1 %) patients had normal common bile duct (CBD), 56 (20.9 %) patients had dilated CBD, 18 (6.7 %) patients had sludge in CBD, stone extracted from 128 (48 %) patients in ERCP, 25 (9.4 %) patient had a periampullary tumor and 5 (1.9 %) patients had CBD tumor. There were significant differences between groups by means of ALP, total bilirubin, direct bilirubin, diameter of CBD. According to ROC curve analysis, the best cut-off ALP value to differentiate between patients with malignancy from control group was 285 (Sens:53,3 ; Spec:80,6 PPV:25,8 ; NPV:93,2), best cut-off total bilirubin value was 3 (Sens:73,3 ; Spec:73,4 ; PPV:25,9 ; NPV:95,6), best cut-off direct bilirubin value was 2 (Sens:73,3 ; Spec:72 ; PPV:25 ; NPV:95,5), and best cut-off CBD value was 10 (Sens:80,8 ; Spec:50,9 ; PPV:16,8 ; NPV:95,6).

Conclusions Among all parameters, ALP, total bilirubin, direct bilirubin, the diameter of CBD were statistically significant. The cut-off values were 285, 3, 2, 10 respectively. Thus, both parameters may be used to predict malignancy before ERCP. Large-scale, prospective studies are needed for further conclusions.

eP450V MINIMAL RESIDUAL INTRAHEPATIC LITHIASIS TREATED WITH INTRADUCTAL LITHOTRIPSY

Authors Sacco M.¹, Gesualdo M.¹, Caronna S.¹, Debernardi Venon W.¹, De Angelis C.G.¹

Institute 1 AOU Città della Salute e della Scienza di Torino, Gastroenterology Department, Endoscopy Unit, Torino, Italy
DOI 10.1055/s-0042-1745303

This video present a case of combined extra- and intrahepatic lithiasis; patient underwent a first ERCP with mechanic lithotripsy and removal of stones from common bile duct (CBD). Since patient was still mild symptomatic and blood test did not normalize, a new cholangio-MRI was performed, showing residual intrahepatic lithiasis.

A second ERCP with intraductal ultrasound (IDUS) and cholangioscopy was performed, in order to reach the intrahepatic stone and perform a intraductal lithotripsy. A systematic exploration of the biliary tree was performed reaching the stone, and the intraductal lithotripsy was successfully done.

eP451 ANALYSIS OF THE EUS-GUIDED RENDEZVOUS TECHNIQUE IN BILIOPANCREATIC DRAINAGE: HISTORICAL COHORT

Authors Garcia-Sumalla A.¹, Quintana S.¹, Luna-Rodriguez D.¹, Busquets J.², Marin M.³, Laquente B.³, Fabregat J.², Gornals J.B.¹

Institutes 1 Hospital Universitari de Bellvitge – IDIBELL, Digestive Endoscopy Unit, L'Hospitalet de Llobregat, Barcelona, Spain; 2 Hospital Universitari de Bellvitge – IDIBELL, Biliopancreatic Surgery Unit, L'Hospitalet de Llobregat, Barcelona, Spain; 3 Hospital Universitari de Bellvitge – IDIBELL, Oncology Department, L'Hospitalet de Llobregat, Barcelona, Spain
DOI 10.1055/s-0042-1745304

Aims The rendezvous technique (RV) has been described as a rescue method in cases of difficult biliopancreatic access by the usual method (transpapillary-ERCP). Current literature remains unclear regarding its efficacy and safety. **Objective** To report the accumulated RV experience in a tertiary center. To evaluate the efficacy and safety of the procedure. Stratified assessment according to the approached route and nature (malignancy/benignity). Comparative analysis of different technical variants.

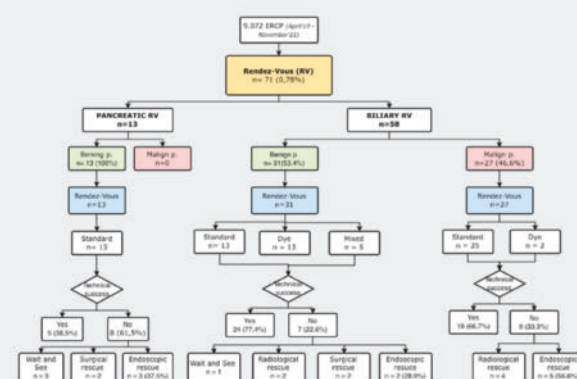
Methods Retrospective cohort study with prospective, consecutive inclusion in a specific database. Period: October'10-Novembre'21. Technical success (TS): cannulation or papilla identification. Clinical success (CS) according to clinical indication: jaundice (decreased Br >50 %, 4-weeks); choledocholithiasis (bile duct cleaning); chronic pancreatitis (pain relief, 4-weeks). Crossover analysis of failed cases between RV- transmurals.

Results

► Table 1

RV Technical success	47/71	66.1 %
RV Clinical success	43/71	60.6 %
Overall EUS guided drainage technical success	55/71	77.5 %
Overall EUS guided drainage clinical success	51/71	71.8 %
Adverse events	16/71	22.5 %

A total of 71 RV performed out of 9.072 ERCP (0.7 %). 27 RV malignant pathology (38.1 %). 58 RV biliary access (81.7 %), the rest in pancreatic duct. Standard technique (n=51), use of dye (n=15), mixed (n=4), linoleic acid (n=1). Overall TS 66.1 %, higher in biliary RV (p<0.05). TC 60.6 %. Failed cases: mainly guide-wire-related. Eight failed RV were successfully rescued by transmurals drainage. One failed choledochoduodenostomy rescued with a RV. No significant differences according to transpapillary cannulation technique, guidewire or needle types. Adverse events 22.5 %: higher in malignant pathology group (p<0.05).



► Fig. 1

Conclusions The EUS-guided RV technique is a technically demanding alternative technique for biliopancreatic drainage, with remarkable clinical efficacy and not free from adverse events. In case of failure, it can be completed with transmurals drainage.

eP452 ENDOSCOPIC ULTRASOUND-GUIDED LIVER BIOPSY: A SAFE AND EFFECTIVE CHOICE IN THE STUDY OF HEPATIC DISEASES

Authors Marquina V.^{1,2}, Andújar X.^{1,2}, Raga A.^{1,2}, Martín-Cardona A.^{1,2}, Horta D.^{1,2}, Báez C.³, González C.³, Esteve M.^{1,2}, Fernández-Bañares F.^{1,2}

Institutes 1 Hospital Universitari Mútua Terrassa, Department of Gastroenterology, Terrassa, Spain; 2 Centro de Investigación Biomédica en Red de Enfermedades Hepáticas y Digestivas (CIBERehd), Madrid, Spain; 3 Hospital Universitari Mútua Terrassa, Department of Pathology, Terrassa, Spain
DOI 10.1055/s-0042-1745305

Aims Percutaneous liver biopsy has been considered as the main technique for liver diseases anatomopathological diagnosis. Endoscopic ultrasound-guided liver biopsy (EUS-LB) has been reported as an alternative. The aim is to evaluate the diagnostic yield, related factors and the safety of the EUS-LB.

Methods Descriptive analysis from an unicenter prospective database of patients who underwent EUS-LB from 12/2019 to 10/2021. We defined diagnostic yield as a satisfactory sample, which provided a successful histopathological diagnosis.

Results Sixty-two procedures (59 patients) were identified, over a total of 1807 EUS carried out in mentioned period (age: 56 ± 14.2 years; 66.1 % women). 19G-aspiration needle(FNA) was used in 6.5 % of the procedures and 22G and 19G-core biopsy needle(FNB) in 22.6 % and 71 %, respectively. Global diagnostic yield was of 90.3 %. Median number of portal tracts(NPT) were 9(95 %CI:6.3-13.3) and median specimen length was 13.5mm(95 %CI:10-15). The needle type and the NPT obtained were the only factors related to diagnostic yield, which was 25 % for 19G-FNA needle, and 78 % and 100 % for 22G and 19G-FNB needles ($p < 0.0005$). Median NPT in diagnostic samples were 10(95 %CI:7.7-14) versus 1(95 %CI:0-4.6) in non-diagnostic samples ($p = 0.0002$). NPT was 14(95 %CI:9-16) for 19G-FNB needles versus 4(95 %CI:3.6) with other needles ($p < 0.0001$). Only 3.2 % of mild adverse effects was observed (post-puncture gastric-wall bleeding treated with clip and a preventive hospitalization for suspected hepatic bleeding that was later not confirmed).

Conclusions EUS-LB is a safe and effective procedure. We recommend the use of 19G-FNB needles to obtain a higher diagnostic yield given that it is related with a greater NPT acquired.

eP453 COMPARING OUTCOMES OF ERCP UNDER CONSCIOUS SEDATION TO GENERAL ANESTHESIA

Authors Bak A.^{1,2}, Parker B.¹, Nguyen V.C.², Harding K.², Perren J.², Yee B.², Richardson W.², Grey M.¹, Greaves G.², Perini R.^{1,2}

Institutes 1 The Kelowna General Hospital, Medicine, Kelowna, Canada;

2 University of British Columbia, Medicine, Kelowna, Canada

DOI 10.1055/s-0042-1745306

Aims In Canada, ERCP performed under conscious sedation (CS) is the standard of care but is limited by patient movement and agitation, especially in the context of lengthy or technically complex cases. General anesthesia (GA) may optimize patient comfort and safety while reducing complications such as pancreatitis, perforation, and mortality. In October 2017, Kelowna General Hospital (KGH), in British Columbia, Canada, transitioned the standard anesthesia modality for ERCP from CS to GA. This study investigated differences in complications and patient outcomes for ERCP performed under CS ($n = 1334$) before the practice change compared to GA ($n = 899$) after the practice change.

Methods Our study is a pre-post retrospective chart review of 2,233 patients who underwent ERCP between 2015 and 2020 at KGH. Demographic, clinical, and procedural data were extracted from patient charts, and analyzed using univariate statistical analysis.

Results Rates of post-ERCP pancreatitis (6 % vs. 4 %; $p = 0.018$) and rates of procedure failure (8 % vs. 3 %; $p < 0.001$) were statistically significant and higher in the CS cohort compared to GA cohort. These results were significant despite the average Charlson Comorbidity Index Score, a measure of the number and severity of patient disease comorbidities, being higher in the GA cohort. The rates of 30-day mortality, ICU transfer, return rates post-discharge, and cholangitis were similar.

Conclusions Performing ERCP under GA rather than under CS is a valuable practice change that should be considered by ERCP-related programs due to its potential to reduce procedure failure and is associated with lower post-ERCP pancreatitis rates.

eP454 LONG-TERM FOLLOW-UP OF ELDERLY PATIENTS WITH PANCREATIC CYSTS: DESCRIBING THE NATURAL HISTORY AND PREDICTORS OF GROWTH, HIGH-RISK TRANSFORMATION, MALIGNANT TRANSFORMATION AND SURGICAL INTERVENTION

Authors Alkhayyat M.¹, AbouSaleh M.¹, Habash A.¹, Al-Momani A.¹, Kim W.¹, Qayyum F.¹, Martin C.¹, Simons-Linares R.¹, Chahal P.¹

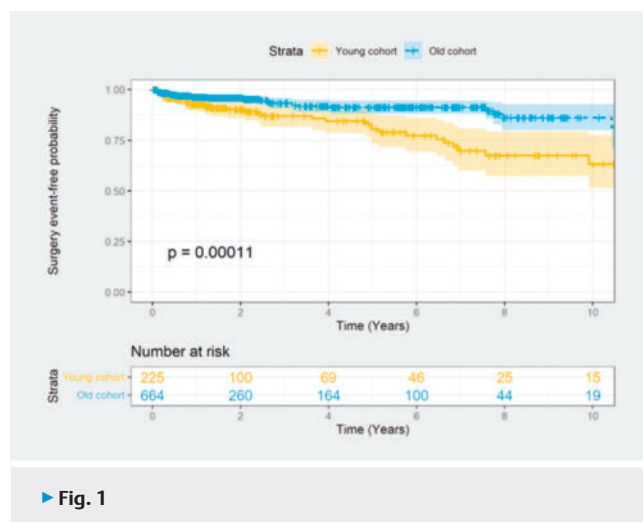
Institute 1 Cleveland Clinic Foundation, Cleveland, United States

DOI 10.1055/s-0042-1745307

Aims The utility of imaging surveillance of pancreatic cysts (PC) in advanced age is unclear with no identified optimal age cutoff to discontinue surveillance. We aim to describe the natural history of PC in patients older than 60 and evaluate long-term outcomes.

Methods A database of patients with abdominal imaging diagnosis of PC (2008-2020) was reviewed. Patients older than 60 at the time of PC detection were identified as the study group ("elderly") and were compared to patients younger than 60 (control group; "young"). Only patients with IPMN, MCN and serous cystadenoma were included. Outcomes were measured at 6-12 months, 1-2 years, 3-5 years, 5-10 years and >10 years. These included growth rate, surgical intervention, high-risk and malignant transformation. Kaplan-Meier estimates, Cox proportional hazards and logistic regression models were performed.

Results A total of 1,169 elderly patients and 408 young patients were identified. Elderly were more likely to have a higher Charlson Comorbidity index at baseline. On follow-up, 1.47 %, 2.68 %, 2.06 %, and 3.91 % elderly developed high-risk transformation at 6-12 months, 1-2, 3-5, and 5-10 years respectively, and 23.8 %, 26.8 %, 28.9 %, 33.6 % and 43.8 % elderly developed increased growth respectively. Overall, 6.65 % elderly developed malignant transformation on follow-up. There were no differences in growth, high-risk or malignant transformation between young and elderly. However, elderly were less likely to undergo surgical resection.



► Fig. 1

Conclusions Except for surgical intervention, age has no impact on other clinically relevant outcomes including high-risk transformation and malignant transformation of PC. Surveillance intervals should be based on morphology and surgical candidacy regardless of age.

eP455V EUS-GUIDED HEPATOGASTROSTOMY FOR AFFERENT LOOP SYNDROME

Authors Borahma M.¹, Benelbarhdadi I.¹, Ajana F.Z.¹

Institute 1 Mohammed V University, Department of Gastroenterology C, Rabat, Morocco

DOI 10.1055/s-0042-1745308

A 61 old-year-male, with a medical history of Whipple surgery for pancreatic head adenocarcinoma nine months ago, was admitted for acute cholangitis. The clinical examination noted cholestatic jaundice and scratching lesions. CT scan showed a malignant relapse on the afferent loop with dilation of this afferent loop and upstream dilation of the common bile duct and intrahepatic duct. We performed an endoscopic ultrasound-guided hepatogastrostomy for this afferent loop syndrome with the deployment of fully covered SEMS 80/8 mm with good drainage.

eP456 ENDOSCOPIC ULTRASOUND (EUS) AND ENDOSCOPIC RETROGRADE CHOLANGIOPANCREATOGRAPHY (ERCP) PERFORMED IN THE SAME SESSION DON'T INCREASE THE RISK OF SEDATION-RELATED COMPLICATIONS

Authors Bota S.¹, Razpotnik M.¹, Urak C.¹, Essler G.¹, Weber-Eibel J.¹, Peck-Radosavljevic M.¹

Institute 1 Klinikum Klagenfurt am Wörthersee, Department of Internal Medicine and Gastroenterology (IMuG), Hepatology, Endocrinology, Rheumatology and Nephrology and Emergency Medicine (ZAE) with Centralized Endoscopy Service, Klagenfurt, Austria

DOI 10.1055/s-0042-1745309

Aims To compare the risk of sedation-related complications of EUS and ERCP performed in the same vs. separate sessions

Methods Our study included all patients with EUS and ERCP performed within five days between 01/2017-10/2021.

Deep sedation was performed with propofol and midazolam in all cases (bolus regime) by a non-anesthesiologist (registered nurse or physician). Use of opioids (nalbuphine) was also documented.

Sedation-related complications were defined as cardiorespiratory instability with a sustained reduction in oxygen saturation to less than 90 % and/or prolonged hypotension or bradycardia.

Results 291 EUS + ERCP cases were performed during the study period, but 29 were excluded (5 cases both EUS + ERCP in general anesthesia, 18 cases with deep sedation by EUS, but ERCP with general anesthesia, 3 cases with sedation related complications by EUS, and 2 cases with difficult sedation by EUS which further received ERCP in general anesthesia).

The mean age of patients was 69.1 ± 15.9 year (51.9 % male, 32.1 % ASA III score). Indication of procedure was: choledocholithiasis–56.1 %, pancreaticobiliary malignancy–29.7 %, and other benign diseases–14.2 %. EUS-FNA was performed in 27.4 % of cases.

The two cohorts (ERCP + EUS in same vs separate sessions) were similar regarding age, gender, ASA classification, EUS + ERCP indication, or performance of EUS-FNA.

The sedation-related complications were similar between the two cohorts, but the duration of EUS + ERCP in one session was shorter and less midazolam and nalbuphine were used when the procedures were performed in the same session

► **Table 1**

	EUS + ERCP in the same session (n = 131)	EUS and ERCP in different sessions (n = 131)	p value
Sedation related complications (%)	2.3	1.5	0.98
Duration of the two procedures (min)	56.4 ± 20.8	63.9 ± 18.9	0.008
Propofol (mg)/Midazolam (mg)	350 (100–1790)/4 (2–10)	340 (130–910)/5 (1–10)	0.77/ <0.0001
Use of nalbuphine (%)	17.5	39.6	0.0001

Conclusions Performance of EUS and ERCP in the same session did not increase the rate of sedation-related complications and seems to be associated with shorter duration of the interventions and sedation dose.

eP457 PERFORMANCE OF ABDOMINAL ULTRASOUND AND ALBUMIN, BILIRUBIN, AND PLATELETS CRITERIA IN PREDICTING THE ABSENCE OF HIGH-RISK ESOPHAGEAL VARICES

Authors Trad N.¹, Mohamed G.¹, Bizid S.¹, Gamgami I.¹, Ben Slimane B.¹, Boughoula K.¹, Ben Abdallah H.¹, Bouali R.¹, Abdelli M.N.¹

Institute 1 Military Hospital Of Tunis, Tunis, Tunisia

DOI 10.1055/s-0042-1745310

Aims Esophageal varices are a serious complication of portal hypertension (PHT). Their diagnosis is based on upper digestive endoscopy (UGIE) which is an invasive examination. We aimed to evaluate the performance of abdominal ultrasound (AU) and ABP in the prediction of the absence of high-risk esophageal varices (HRV).

Methods We performed a retrospective analysis of data from consecutive cirrhotic patients followed in our department, recruited from January 2010 to December 2019. Patients with a CHILD-pugh score ≤ 7 who had a UGIE, AU, and laboratory tests within less than 3 months were included.

Results A total of 224 patients were included. Ninety-two had a CHILD-Pugh score ≤ 7 (41.07 %). The average age was 61.47 ± 12.26 years. The sex ratio was 1.3. Viral infection was the most common etiology of cirrhosis (55.4 %). The absence of PHT signs in AU was significantly associated with the absence of HRV ($p < 0.001$) with an area under the ROC curve (AUROC) of 0.713 [95 % CI: 0.588–0.837]. The sensitivity, specificity, the positive predictive value, and the negative predictive value of the absence of PHT signs in AU in predicting the absence of HRV were 70.83 %, 71.66 %, 50 %, and 86 % respectively. The ABP criteria were significantly correlated with the absence of HRV ($p < 0.001$) with AU-ROC of 0.658 [95 % CI: 0.516–0.801]. The sensitivity, specificity, positive predictive value, and the negative predictive value of the ABP criteria in predicting the absence of HRV were 40.74 %, 98.46 %, 91.66 %, and 80 % respectively.

Conclusions The AU and the ABP criteria were non-invasive and efficient methods that might be useful to avoid screening endoscopy for detecting high-risk varices.

eP458 PERFORMANCE OF BLEEDING RISK SCORES AND NON-INVASIVE LIVER FUNCTION TESTS IN PREDICTING SIX-WEEK MORTALITY IN ACUTE VARICEAL BLEEDING

Authors Trad N.¹, Mohamed G.¹, Bizid S.¹, Gamgami I.¹, Ben Slimane B.¹, Boughoula K.¹, Ben Abdallah H.¹, Bouali R.¹, Abdelli M.N.¹

Institute 1 Military Hospital Of Tunis, Tunis, Tunisia

DOI 10.1055/s-0042-1745311

Aims We aimed to evaluate the performance of bleeding-risk scores and non-invasive liver function tests in predicting six-week mortality in acute variceal bleeding (AVB).

Methods This was a retrospective study including consecutive cirrhotic patients hospitalized for an AVB from January 2010 to December 2019. The following bleeding-risk scores were calculated: GB score, AIMS65, and APASL. The following non-invasive tests were calculated: CHILD-Pugh, MELD, Lok-index, cirrhosis discriminant index (CDS), albumin-bilirubin grade (ALBI), platelet-albumin-bilirubin grade (PALBI), fibrosis-index based on 4 factors (FIB-4), aspartate-aminotransferase-to-platelet ratio (APRI), King's score, Goteborg-University Cirrhosis Index (GUCI), and aspartate-aminotransferase to an alanine-aminotransferase ratio (AAR).

Results A total of 224 patients were included with a mean age of 61.02 ± 13.21 years and a sex-ratio of 1.60. These patients were admitted 518 times to our department for acute decompensation. One-hundred-forty-three admissions were related to AVB (27.6%). The six-week mortality rate was 25.7%. The following scores have been statistically associated with six-week mortality: AIMS65 ($p = 0.001$), APASL ($p = 0.002$), GB score ($p < 0.001$), FIB-4 ($p = 0.003$), ALBI ($p = 0.023$), PALBI ($p = 0.037$), King's score ($p = 0.039$) and CHILD score ($p = 0.043$). AIMS65 had the best area under the ROC curve (AUROC) $0.877 [95\% \text{ CI}: 0.761-0.993]$ followed by APASL (AUROC = $0.847 [95\% \text{ CI}: 0.715-0.978]$), ALBI (AUROC = $0.804 [95\% \text{ CI}: 0.609-0.999]$), PALBI (AUROC = $0.757 [95\% \text{ CI}: 0.490-0.999]$), the GB score (AUROC = $0.747 [95\% \text{ CI}: 0.527-0.966]$), and CHILD score (AUROC = $0.601 [95\% \text{ CI}: 0.331-0.872]$). At the threshold of 1.5, AIMS65 had a sensitivity and specificity of 99% and 70.1% respectively. At the cut-off of 1.37, ALBI had a sensitivity and specificity of 75% and 70.3% respectively in predicting six-week mortality.

Conclusions Bleeding-risk scores had the best prognostic value in patients with AVB, in particular, AIMS65 at the threshold of 1.5. This simple score would allow a better selection of vulnerable patients.

eP459 ENDOSCOPIC ULTRASOUND; HIGHLY EFFECTIVE IN THE INVESTIGATION OF LYMPHADENOPATHY OF UNKNOWN CAUSE

Authors Ahmed W.¹, Joshi D.¹, Prachalias A.¹, Patel A.¹, Harrison P.¹, Menon K.¹, Srinivasan P.¹, Devlin J.¹, Reffitt D.¹

Institute 1 Kings College Hospital NHS Foundation Trust, Institute of Liver Studies, London, United Kingdom

DOI 10.1055/s-0042-1745312

Aims Endoscopic ultrasound (EUS) guided tissue acquisition is an indispensable tool in the diagnostic pathway of upper GI and hepatobiliary cancer. We sought to assess the utility in guiding patient management in patients presenting with lymphadenopathy of unknown cause.

Methods Consecutive patients with lymphadenopathy undergoing EUS guided lymph node sampling were retrospectively analysed. Recorded variables included patient demographics, procedural characteristics, histological findings and patient management.

Results 90 episodes (males $n = 51$, 57%) were identified over a ten-year period. Median age at EUS was 62 years old (range 13-88 years old). Median size of lymph node sampled was 20mm (range 6-71mm), with a median of 2 passes (range 1-4). A 22 G needle was used in 62 (68.89%) of cases.

The majority of lymph nodes sampled were from the peri-pancreatic area ($n = 50$, 56%), followed by peri-hepatic ($n = 15$, 17%), celiac ($n = 14$, 16%), para-esophageal ($n = 4$, 4%), peri-gastric ($n = 3$, 3%), mediastinum ($n = 2$, 2%) and para-duodenal ($n = 2$, 2%).

The final diagnosis were benign lymphadenopathy ($n = 31$, 34%) followed by adenocarcinoma ($n = 23$, 26%), lymphoma ($n = 6$, 7%), tuberculosis (TB) ($n = 5$, 6%), Sarcoid ($n = 5$, 6%), and neuroendocrine tumour ($n = 5$, 6%). There was insufficient tissue for histological diagnosis in 15 (17%) cases. Sensitivity for malignancy was 78% with a specificity of 100%. Sensitivity for inflammatory disorders was 88%. All the cases with tuberculosis had a positive diagnosis. There were no complications associated with EUS guided sampling.

Conclusions EUS is a highly safe and effective method of tissue acquisition in patient presenting with unexplained lymphadenopathy.

eP460V EUS OF A RARE PRIMARY MEDIASTINAL LEIOMYOMA

Authors Altonbary A.¹, Hakim H.¹, El-Nady M.², Abou-Elmagd A.³, Elkashef W.⁴

Institutes 1 Mansoura University, Department of Gastroenterology and Hepatology, Mansoura, Egypt; 2 Cairo University, Department of Gastroenterology and Hepatology, Cairo, Egypt; 3 Armed Forces college of medicine, Department of Gastroenterology and Hepatology, Cairo, Egypt; 4 Mansoura University, Department of Pathology, Mansoura, Egypt

DOI 10.1055/s-0042-1745313

A 29-years-old male presented with a 2-month history of cough, Dyspnea. CT chest revealed large mediastinal mass compressing esophagus and aortic arch. On endoscopy, the mass was compressing the mid esophagus with healthy mucosa. On EUS examination, there was large well defined hypoechoic mediastinal mass with hyperechoic strands, measuring about 87x50 mm. EUS-FNB was done using 22G acquire needle by slow pull technique. Cytopathological examination with IHC revealed spindle cell proliferation with oval nuclei with positive cytoplasmic reaction for smooth muscle actin & Vimentin and negative for S100, B-catenin and Myogenin; consistent with leiomyoma. Patient was referred for surgical resection.

eP461 THE ROLE OF ENDOSCOPIC ULTRASOUND FINE-NEEDLE ASPIRATION (EUS-FNA) IN THE DIAGNOSIS OF MEDIASTINAL NODAL DISEASE

Authors Budimir I.¹, Pavić T.¹, Baršić N.¹, Bakula D.¹, Pelajić S.¹, Juroš Z.², Vulić I.³, Hrabar D.¹

Institutes 1 University of Zagreb, Department of Internal Medicine, Division of Gastroenterology, «Sestre Milosrdnice» University Hospital Center, Zagreb, Croatia; 2 University of Zagreb, Department of Pathology, «Sestre Milosrdnice» University Hospital Center, Zagreb, Croatia; 3 University of Zagreb, Division of Gastroenterology, Department of Internal Medicine, County Hospital Pula, Pula, Croatia

DOI 10.1055/s-0042-1745314

Aims EUS-FNA should be the first choice in diagnosis of mediastinal nodal disease after suspicious findings on CT or PET. Primary goal was confirmation of distribution mediastinal nodal disease considering on age, sex, node length and elastography, while secondary goal was determination of sensitivity, specificity and accuracy of the method in enlarged mediastinal lymph nodes.

Methods In a prospective study, we analyzed 31 patients with enlarged mediastinal lymph nodes from January 2019 to December 2020. The study included adult patients who previously had been diagnosed with enlarged mediastinal lymph nodes by imaging (CT or PET). Exclusive criteria was cystic lesions and patients with contraindication for EUS-FNA. FNA was performed in 2 or 3 passes (Olympus EZshot 3Plus) with 19 or 22 gauge needles. The material was sent for cytological analysis.

Results 31 patients were included in the study. The largest number of subjects (16/51.6%) with EUS-FNA was in the age group up to 65 years, 64.5% were men.

The diameter of the enlarged mediastinal lymph nodes in 87.5 % of patients was greater than 3cm. In the largest number of patients, metastatic cancer was verified (14/45.1 %), followed by lymphoma (5/16.1 %) and granulomatous inflammation (4/12.9 %). Reactive lymphadenopathy was demonstrated in (5/16.1 %) patients and cytological finding in (3/9.7 %) patients was inclusive. Sensitivity of procedure was 70.0 % (95 % CI 34.7-93.3 %), while specificity was 83.3 % (95 % CI 35.9-99.6 %), and accuracy was 75.0 % (95 % CI 47.6-92.7 %). No complications were registered

Conclusions EUS-FNA should be the first choice in diagnosis of mediastinal nodal disease because of relatively high specificity and accuracy.

eP462V EUS-FNB OF AN UPPER MEDIASTINAL TUMOR

Authors Sacco M.¹, Cravero F.¹, Gesualdo M.¹, Bruno M.¹, Gaia S.¹, De Angelis C.G.¹

Institute 1 AOU Città della Salute e della Scienza di Torino, Gastroenterology Department, Endoscopy Unit, Torino, Italy

DOI 10.1055/s-0042-1745315

In this video we present a case of a 68 years old lady, with a history of small lymphocytic lymphoma, complaining about new onset, progressive chest pain. A PET-CT scan showed a mass in the anterosuperior left side of mediastinum, with a suspicion of an enlarged pathologic lymphnode. Endoscopic ultrasound showed a large mass arising from aortic arch, involving carotid artery and left subclavian artery; tissue collected with fine needle biopsy (FNB) revealed a small cell lung cancer with infiltration of mediastinal pleura.

eP463 PROFITABILITY OF THE SHARKCORE ECHOENDOSCOPY BIOPSY NEEDLE IN THE STUDY OF MEDIASTINAL PATHOLOGY

Authors Santos Santamarta F.¹, Moreira da Silva B.A.¹, Montero Moretón Á.M.¹, González de Castro E.¹, Aguilar Argeñal L.F.¹, Robles de la Osa D.¹, Berzal Cantalejo F.², Pérez Citores L.¹, Cimavilla Román M.¹, Curieses Luengo M.¹, Barcenilla Laguna J.¹, Rancel Medina F.¹, Santos Fernández J.¹, Maestro Antolín S.¹, Pérez Millán A.G.¹

Institutes 1 Complejo Asistencial Universitario de Palencia, Gastroenterology, Palencia, Spain; 2 Complejo Asistencial Universitario de Palencia, Pathology Anatomy, Palencia, Spain

DOI 10.1055/s-0042-1745316

Aims Endoscopic ultrasound allows puncture sampling of thoracic structures from the esophagus. Formerly, punctures were performed with fine needles that only allowed cytological diagnosis; devices have now larger-caliber needles, obtaining cell blocks that preserve tissues architecture being possible to perform immunohistochemical techniques to optimize diagnoses. The aim of the study is to evaluate the SharkCore 22G biopsy needle (Covidien-Medtronic) to study mediastinal pathology.

Methods Retrospective, descriptive study of patients who underwent puncture of a mediastinal lesion with SharkCore 22G needle in a second-level hospital between September 2018 and May 2021. All samples were obtained using the slow-pull technique and introduced in formaldehyde.

Results 49 patients were recruited, 71 % were men (median age of 65 years). Target lesion was adenopathy in 87.7 % of cases, the remaining mediastinal masses. Of the 43 biopsied adenopathies, cell block was achieved in 93 %, 100 % in the mediastinal masses being the 100 % primary lung neoplasms. Lymphadenopathy biopsies were diagnostic in 83.7 % cases, diagnoses were: 41.67 % benign lymphadenopathy (46.67 % sarcoidosis), 33.3 % metastases of pulmonary origin, 11.1 % neoplastic urothelial origin and 8.33 % gastrointestinal neoplasia. 42.9 % of the no diagnostic biopsies were lymphomas after adenopathy resection. Median number of passes was 2, no complications were recorded.

Conclusions Puncture of mediastinal lesions with SharkCore needle has proven to be safe, allowing the collection of samples with a high rate of cell blocks

and high diagnostic yield. It is especially interesting in benign pathologies, when additional techniques such as immunohistochemistry are required and characterization of lymphomas, although abundant material and experience of the pathologist is required.

eP464 STUDY ON THE SAFETY AND EFFICACY OF NOVEL MOTORIZED SPIRAL ENTEROSCOPE IN THE DIAGNOSIS AND THERAPY OF SMALL BOWEL DISEASES: A RETROSPECTIVE MULTICENTRE EXPERIENCE

Authors Achanta C.R.¹, Kinhal S.¹, Imandi V.¹, Singh A.¹, Sundaram S.², Mane K.², Panigrahi M.³, Chouhan M.I.³, Hanumanthu S.¹, Kunchala R.M.¹

Institutes 1 KIMS ICON Hospital, Visakhapatnam, India; 2 Tata Memorial Hospital, Mumbai, India; 3 ALL INDIA INSTITUTE OF MEDICAL SCIENCES, Bhubaneswar, India

DOI 10.1055/s-0042-1745317

Aims We share our experience on the efficacy and safety of Novel motorized spiral enteroscope (NMSE) in small bowel diseases

Methods In this multicentre retrospective study patients with suspected small bowel diseases undergoing NMSE were included between November 2019-November 2021. Patient demographic details, symptoms, radiologic findings were noted. After informed consent, NMSE was performed under general anaesthesia. Procedure details like procedure route, duration, findings, complications, depth of maximal insertion (DMI), therapeutic interventions, and histopathology findings were noted. Study was approved by institutional review board.

Results 44 patients (33M; mean age 42.98 ± 16.43 years) were included. The most common presenting complaints were pain abdomen (n = 27), gastrointestinal bleed (n = 12), and others (n = 20). Abdominal cross-sectional imaging showed ileal and jejunal wall thickening (n = 34), stricture (n = 10) & others (n = 3). NMSE was done via antegrade (n = 13), retrograde (n = 18), bidirectional (n = 13) routes. Others as detailed in Table 1. Panenteroscopy was achieved in six. On NMSE, ulcers/erosions were noted in 70.4 %; stricture in 47.7 %, mass/polyp in 13.64 % & normal in 11.36 %. Polypectomy, argon plasma coagulation and stricture dilatation were done in 1 patient each (Figure 1). The most common histopathological findings were chronic inflammation (n = 24); granulomas (n = 3); eosinophilic infiltration (n = 2) & malignancy (n = 4). Surgery was done in 4 patients while rest were managed medically with immunomodulators (n = 33) and antitubercular therapy (n = 4). Cricopharyngeal tears (n = 2); ileal tears (n = 1) and hypothermia (n = 1) were the complications.

NMSE findings/ procedures	n (%)
Ulcer and Erosions	31 (70.45%)
Stricture	21 (47.73%)
Normal	5 (11.36%)
Mass	4 (9.09%)
Telangiectasia	3 (6.82%)
Lymphangiectasia	3 (6.82%)
Worms	2 (4.55%)
Polyp	2 (4.55%)
Biopsy	35 (79.55%)
Polypectomy	1 (2.27%)
Argon plasma coagulation	1 (2.27%)
Stricture dilatation	1(2.27%)

► Fig. 1

► Table 1		
Route of procedure	Depth of Maximum Insertion (Mean + /-SD) (in cms)	Procedure Time (Mean + /-SD) (in mins)
In Total	190.83 ± 124.08	51.73 ± 31.15
Antegrade (distal to duodeno-jejunal flexure)	211.25 ± 109.59	46.12 ± 18.76
Retrograde (proximal to ileocecal valve)	119.8 ± 85.8	35.09 ± 13.24

Conclusions NMSE is a useful tool in the diagnosis and therapy of small bowel diseases. It is safe and effective in our cohort of Indian patients.

eP465 SAFETY AND EFFICACY OF DEVICE-ASSISTED ENTEROSCOPY (DOUBLE BALLOON) FOR EXTRACTION OF PLASTIC STENTS

Authors Barreto- Zuniga R.^{1,2}, Zamora-Nava L.E.², Sanchez-Chavez X.²

Institutes 1 National Institute of Medical Science and Nutrition "Salvador Zubiran" INCMNSZ, Endoscopy, Mexico City, Mexico; 2 National Institute and Medical Science and Nutrition "Salvador Zubiran" INCMNSZ, Endoscopy, Mexico City, Mexico

DOI 10.1055/s-0042-1745318

Aims Evaluate safety and efficacy of device-assisted enteroscopy (double balloon) for removal plastic stents retained in the small intestine.

Methods We included 7 cases with migrated plastic stents who required device-assisted enteroscopy (double balloon) attended at the gastrointestinal endoscopy service of the Salvador Zubirán National Institute of Medical Sciences and Nutrition in Mexico City, from August 2011 to December 2021

Results 5 women and 2 men were included. In 5 patients, device-assisted antegrade enteroscopy (double balloon) was performed and in 2 patients device-assisted retrograde enteroscopy (double balloon) was performed. Removal plastic stents was reported in 100 % (7/7) of patients. In 1 patient, sealed perforation was present. No complications inherent in the procedure were reported.

Conclusions The advent of device-assisted enteroscopy (double balloon) gives us a less invasive option for the extraction of foreign bodies in the small intestine, being safe in most cases

eP466 WHICH TYPE OF SMALL-BOWEL CAPSULE ENDOSCOPY IS BETTER? A SYSTEMATIC REVIEW AND META-ANALYSIS

Authors Blanco-Velasco G.¹, Solórzano-Pineda O.M.¹, García-Contreras L.F.¹, Martínez-Camacho C.¹, Murcio-Pérez E.¹, Hernández-Mondragón O.V.¹

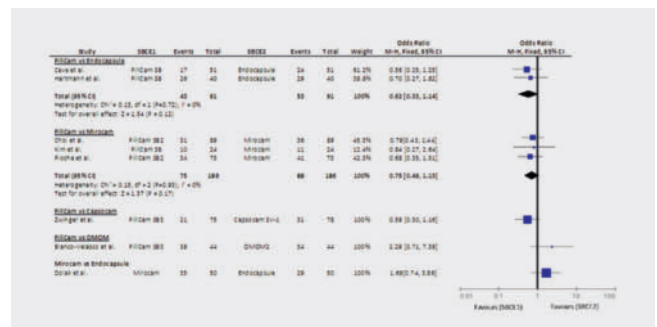
Institute 1 Hospital de Especialidades, Centro Médico Nacional Siglo XXI, Instituto Mexicano del Seguro Social, Endoscopy, Mexico City, Mexico

DOI 10.1055/s-0042-1745319

Aims Small-bowel capsule endoscopy (SBCE) is a safe and efficient method for the diagnosis of the pathologies of the small-bowel. Since the development of the SBCE in year 2000, different types of SBCE have been created. The aim of this study was to analyze which of the different types of SBCE has a better diagnostic yield.

Methods Extensive medical literature research, using the MESH terms and keywords, in search of studies that compared different types of SBCE. We analyzed the diagnostic yield of all the comparisons and when there were 2 or more studies that compared the same SBCEs, a meta-analysis was realized.

Results A total of 8 eligible studies were identified. The indications for the SBCE procedure were overt or/and occult gastrointestinal bleeding in all cases, and 2 studies also included diarrhea and abdominal pain. In 7 studies different types of SBCEs (Mirocam, Endocapsule, OMOM and Capsocam) were compared with PillCam (SB, SB2 and SB3). Three studies compared Mirocam vs Pillcam and two studies contrast Endocapsule vs Pillcam. One study compared SBCEs different to Pillcam (Mirocam vs Endocapsule). Seven studies did not find statistical differences between SBCEs, only one study had a statistical difference ($p = 0.02$) that favours Mirocam when it was compared to PillCam SB2. This difference was not replayed in the meta-analysis.



► Fig. 1

Conclusions SBCE is an efficient method for the study of the small bowel. Some medical literature compared different types of SBCEs, however, no statistically significant differences were identified in their diagnostic yield.

eP467 BOWEL PREPARATION FOR SMALL BOWEL CAPSULE ENDOSCOPY: EFFICACY OF STANDARD REGIMEN WITH LOW VOLUME (2L) PEG VERSUS VERY LOW VOLUME (1L) PEG AND ASCORBATE

Authors Cavallaro F.¹, Eidler P.², Tontini G.E.², Caccia R.³, Gentile C.³, Maregatti M.³, Nandi N.³, Piagnani A.³, Rimondi A.³, Scaramella L.¹, Vecchi M.², Elli L.¹

Institutes 1 Fondazione IRCCS Ca' Granda Ospedale Maggiore Policlinico, Gastroenterology and Endoscopy Unit, Milano, Italy; 2 Università degli Studi di Milano, Department of Pathophysiology and Organ Transplantation, Milano, Italy; 3 Università degli Studi di Milano, Post Graduate Specialization in Gastrointestinal Diseases, Milano, Italy

DOI 10.1055/s-0042-1745320

Aims ESGE guidelines recommend purgative bowel preparations with 2L of PEG for small bowel capsule endoscopy (SBCE). We have compared the efficacy of a standard formulation of 2L-PEG solution (SELG-ESSE) versus a very low volume solution (1L-PLENVU Macrogl 3350 + Sodium ascorbate + sodium sulfate + Ascorbic acid + Electrolytes) already adopted for large bowel preparation.

Methods We arranged a single-centre, retrospective, operator-blind, observational study. Between 10/2020 and 03/2021 all patients undergoing SBCE randomly received 2L-PEG or 1L-PLENVU before SBCE. SBCE visibility was defined adequate or non-adequate by employing a quantitative (0 – 3; ≥ 2 adequate) visibility scoring system for each SB tertile. We defined diagnostic yield as the rate of SBCE with at least one relevant endoscopic finding.

Results Seventy SBCE examinations were analyzed, 40 with 2L-PEG and 30 with 1L-PLENVU. No differences were found in age, gender, adverse event (none), intolerance to the purgative agent (none) and SBCEs indication. We found adequate SBCE visibility in 69/70 examinations (1/70 nonadequate with 2L-PEG). The SB mucosal visibility scored ≥ 2 in all the three SB tertiles in 72.5% (29/40) and in 76.7% (23/30) of SBCEs prepared with 2L-PEG and with 1L-PLENVU respectively ($p = 0.79$). A perfect SBCE visibility (score 9, score 3 in

all tertile) was found in 25 % (10/40) of patients receiving 2L-PEG and in 20 % (6/30) of patients receiving 1L-PLENVU ($p = 0.78$). The diagnostic yield was 62.5 % (25/40) in the 2L-PEG group and 63.3 % (19/30) in the 1L-PLENVU group ($p = 1$).

Conclusions Our exploratory study suggests that 1L-PLENVU can be as effective as 2L-PEG solution in SBCE preparation in a real-life setting.

eP468 EVALUATION OF LIVER FAT AND FIBROSIS WITH FIBROSCAN IN CELIAC PATIENTS

Authors Nuriyev K.¹, İstemihan Z.¹, Şenkal İ.V.¹, İmanov Z.¹, Çavuş B.¹, Çifçibaşı Örmeci A.¹, Akyüz F.¹, Demir K.¹, Beşşik F.¹, Kaymakoglu S.¹

Institute 1 İstanbul, Gastroenterohepatology, İstanbul, Turkey

DOI 10.1055/s-0042-1745321

Aims The aim of this study is to determine the fibrosis and adiposity scores with Fibroscan, a noninvasive method in celiac patients, and to determine the factors affecting them.

Methods Measurements were made with the Fibro Scan device (Echosens, France) using the M probe of 45 patients who were followed up in our outpatient clinic with the diagnosis of celiac disease (serology + histopathology) and had no known liver disease other than celiac disease. Controlled Attenuation Parameter (CAP score) values were measured in order to evaluate liver fibrosis measurements and hepatic steatosis.

Results 75.6 % (34) of the patients were female. The mean diagnosis of celiac disease was 97.87 ± 84.39 months. The mean age of the patients was 42 ± 12.13 years. The mean body mass index (BMI) was 23.88 ± 4.17 kg/m². The mean TG of the patients was 117.79 ± 69.64 mg/dl, AST mean 21.48 ± 10.27 U/L, ALT mean 22.35 ± 15.30 U/L, ALP mean 75.62 ± 24.55 U/L, GGT mean 14.53 ± 9.63 U/L. The mean HGB was 12.9 ± 1.5 g/dl. The patients' mean liver fibrosis score was 6.02 ± 10.62 kPa, and the mean CAP score was 224.96 ± 51.19 dB/m (min 140, max 360 dB/m). According to CAP values, 71 % of the patients were classified as Stage 0, 11 % as Stage 1, 3 % as Stage 2, and 15 % as Stage 3 fatty liver. There was no statistically significant difference according to gender in CAP value and fibroscan fibrosis scores. A positive correlation was found between CAP score and BMI, LDL, TG, and GGT ($p < 0.005$).

Conclusions According to the CAP score of celiac patients, one third of them had stage 1 and higher fatty liver. A statistically significant correlation was found between CAP score and GGT, TG, and LDL.

eP469 REDUCED COMPLETION RATES FOR INPATIENT VERSUS OUTPATIENT COLON & PAN-INTESTINAL VIDEO CAPSULE ENDOSCOPY; A NESTED CASE-CONTROL STUDY

Authors Deane C.^{1,2}, Walker C.^{1,2}, Ryan B.¹, O'Connor A.¹, O'Donnell S.¹, Breslin N.¹, McNamara D.^{1,2}

Institutes 1 Tallaght University Hospital, Dublin, Ireland; 2 Trinity Academic Gastroenterology Group, Dublin, Ireland

DOI 10.1055/s-0042-1745322

Aims Inpatient video capsule endoscopy (VCE) is a regular request to gastroenterology services. Limited data exists comparing the effect of admission status on the quality of VCE. This study aimed to compare the quality of inpatient versus outpatient CCE (colon capsule endoscopy) & PIC (pan-intestinal capsule) studies & factors affecting outcomes.

Methods We performed a retrospective nested case-control study. Patients were identified from a VCE database. Procedures were performed using PillCam Colon2 capsules using a standard bowel prep & booster regimen. For PICs the small bowel sleep mode was manually deselected. Patients had a transit assessment at 30 minutes & received a prokinetic if delayed. Basic demographics & key outcome measures were identified. Outcomes were compared between groups using a Chi² test. Relevant ORs & NNT were calculated as appropriate.

Results Overall, 35 inpatients (CCE (n = 6), PIC (n = 29)) & 70 controls were included. Gender profiles were similar, inpatient cases were older & more frequently had PCI procedures (83 %). Completion rates were significantly better in outpatients (61 %) (OR 3.0, NNH 3) versus inpatients (40 %).

Gender & age did not affect completion rates. Completion rates were similar for PCI (55 %) & CCE (64 %) procedures. Preparation quality was similar in inpatients & outpatients respectively.

The diagnostic yield for inpatient and outpatient VCE's were similar; 80 % & 74 %. More patients were referred for bleeding as an inpatient (80 %) versus outpatients (33 %) with a similar yield in inpatients (43 % (n = 12)) & outpatients (30 % (n = 7)).

Conclusions Inpatient VCE has a role particularly in the setting of acute bleeding however, practitioners should be aware of the increased risk of incomplete studies in inpatient capsules & mitigate against this where possible.

eP470 IS NOVEL POWER SPIRAL ENTEROSCOPY THE HOLY GRAIL IN SMALL BOWEL ENDOSCOPIC EXPLORATION?

Authors Donapati V.R.¹, Adi R.K.¹, Bagepally R.S.¹, Guduru R.S.R.¹, V.V.R.¹, Immaneni B.¹, Mannava A.K.¹

Institute 1 Yashoda Hospital, Department of Gastroenterology, Hyderabad, India

DOI 10.1055/s-0042-1745323

Aims The initial assessment of the novel motorised Power spiral Enteroscopy in it's potential to explore the entire small bowel in a shorter duration.

Methods We performed 45 novel Motorised Power Spiral Enteroscopy (NMPSE) procedures between December 2020 and November 2021. Three trained, experienced endoscopists performed them at Yashoda Hospital, tertiary care centre in Hyderabad, India. Retrospective analysis of technical success, diagnostic yield, complete Enteroscopy rate, procedure time, therapeutic success and adverse events were noted.

Results Forty patients underwent enteroscopy (NMPSE) with technical success of 88.88 %. Two failed intubation despite dilatation and in three pylorus was not negotiable. Antegrade approach used in 32 patients and retrograde in 8 patients. Four required combined approach. Twenty five had obscure GI Bleeding, 14 pain abdomen or imaging suggesting small bowel pathology. One had ileal polyp related intussusception which was managed by Polypectomy. Median duration was 50 min + / - 15 min. Eight cases had complete Enteroscopy including four with combined approach. Biopsies procured in 30 cases. APC of Telangiectasiae was done in 5 patients. Polypectomy in one, retrieval of Capsule Endoscope in one and dilatation of strictures in five patients.

Mild abdominal pain in 6 patients was managed with Paracetamol. One patient required surgery for Ileal perforation following dilatation of stricture.

► Table 1

Index	Numbers (Percentage)
Technical Success	40 (89 %)
Diagnostic Yield	40/40 (100 %)
Major Complication	1 (2.5 %)
Procedure Time	50 + / - 15 min.



► Fig. 1

Conclusions The Novel Motorised Power Spiral Enteroscopy has excellent potential in small bowel exploration with good technical and clinical success. Certain maneuvers help in enhancing the performance. Our journey to achieve holy grail in small bowel exploration is getting closer with advent of novel motorised power spiral Enteroscopy.

eP471 USE OF MAGNETICALLY CONTROLLED CAPSULE ENDOSCOPY BY REMOTE-CONTROL DURING PANDEMIC

Authors Finta A.¹, Helle K.², Szalai M.¹, Madacsy L.^{1,1}

Institutes 1 Endo-kapszula Ltd., Szekesfehervar, Hungary; 2 University of Szeged, Szeged, Hungary

DOI 10.1055/s-0042-1745324

Aims To assess the effect of the virus on the digestive system by examining the upper gastrointestinal tract of patients with gastrointestinal symptoms after COVID-19 infection.

Methods Magnetically controlled capsule endoscopic examinations were performed with the help of the remote-control unit of AnX Robotica Inc. while minimizing physician-patient contact time. The outcomes were evaluated using an artificial intelligence software.

Results A total of 15 examinations (M/F: 8/7, mean age: 47 years) were performed between August 1–October 31, 2021.

The mean physician-patient contact time in the same room was < 10 minutes; 35 minutes, in our non-remote-control research. The diagnostic yield was 27 %, which did not differ significantly from previous data.

Signs of small intestinal inflammation were found in 53 % of patients; small intestinal arteriovenous malformation, in 20 %. No major pathologies were detected. The mean time to locate and describe pathological findings (by artificial intelligence software) were 13 minutes.

Conclusions Remote-control minimizes physician-patient contact time and the risk of infection even further. This method may be performed as a non-invasive examination on COVID-19 patients, to map the effect of the virus on the digestive system.

eP472 ELIAKIM AND CECDALIC SCORES ARE USEFUL PAN-INTESTINAL TOOLS FOR CROHN'S DISEASE DIAGNOSIS AND ACTIVITY MONITORING

Authors Freitas M.^{1,2,3}, Capela T.^{1,2,3}, Macedo Silva V.^{1,2,3}, Arieira C.^{1,2,3}, Xavier S.^{1,2,3}, Cúrdia Gonçalves T.^{1,2,3}, Boal Carvalho P.^{1,2,3}, Dias de Castro F.^{1,2,3}, Rosa B.^{1,2,3}, João Moreira M.^{1,2,3}, Cotter J.^{1,2,3}

Institutes 1 Gastroenterology Department, Hospital da Senhora da Oliveira, Guimarães, Portugal; 2 Life and Health Sciences Research Institute (ICVS), School of Medicine, University of Minho, Braga, Portugal; 3 ICVS/3B's, PT Government Associate Laboratory, Braga/Guimarãesport, Portugal

DOI 10.1055/s-0042-1745325

Aims Capsule endoscopy is a valuable tool in the diagnosis and monitoring of Crohn's disease (CD). Recently, a new panenteric capsule (pan-CE), PillCam Crohn's (Medtronic, USA) was approved. A novel quantitative score of inflammation for PillCam Crohn's, the Eliakim score, has emerged. However, the optimal index for panenteric monitoring disease activity is far from being completely defined. We aimed to evaluate the correlation and accuracy between the pan-CE Eliakim and capsule endoscopy Crohn's disease activity index (CECDALic) scores and inflammatory parameters.

Methods Retrospective study, including a cohort of patients with suspected or established CD that underwent Pan-CE PillCam Crohn's over 4 years. The Eliakim and CECDALic scores were calculated.

Results Thirty-two patients were included, 59.4 % with suspected CD. The median Eliakim and CECDALic scores were 5.5 and 6.5, respectively. We found a very good correlation between Eliakim and CECDALic scores ($r_s = 0.87$; $p < 0.001$), and a moderate correlation between Eliakim and CECDALic scores with C-reactive protein ($r_s = 0.53$; $p = 0.003$), ($r_s = 0.44$; $p = 0.02$), and fecal calprotectin ($r_s = 0.46$; $p = 0.02$), ($r_s = 0.54$; $p = 0.01$), respectively. In patients with suspected CD, an Eliakim ≥ 3.5 and CECDALic score ≥ 5.5 had a sensitivity of 100 %, and specificity of 84.6 %, and 75.0 %, respectively, for the diagnosis of CD.

Conclusions The Eliakim and CECDALic scores have a strong correlation in assessing panenteric CD activity, and a moderate correlation with inflammatory biomarkers. The application of Eliakim ≥ 3.5 and CECDALic score ≥ 5.5 as the cutoff values for the presence of significant inflammatory activity in patients undergoing pan-CE for suspected CD may be useful to establish the diagnosis.

eP473V SPIRAL MOTORIZED ENTEROSCOPY: A NEW TOOL FOR FOREIGN BODY REMOVAL

Authors Muñoz Pérez R.¹, Compañy Catalá L.¹, Ruiz Gómez F.¹, Rodríguez Angulo A.¹, Guilabert Sanz L.¹, Álvarez Arroyo E.¹, Martínez Sempere J.¹, Medina Prado L.¹, Martínez Moreno B.¹, Mangas Sanjuán C.¹, Aparicio Tormo J.R.¹

Institute 1 Alicante General University Hospital, Gastroenterology Department, Alicante, Spain

DOI 10.1055/s-0042-1745326

A 16-year-old male presented after ingestion of twelve spherical magnets visualized in hypogastrium on X-ray, not found in colonoscopy with ileoscopy.

Retrograde motorized spiral enteroscopy (MSE) was performed, exploring 90cm of ileum without identifying the magnets. An X-ray confirmed their persistence. With an antegrade MSE we found in medial ileum a nine-magnet rosary and extracted it using a Roth net. We carried out another antegrade MSE and two more magnets were removed. The last magnet was not found.

MSE allows the extraction of foreign bodies in a less aggressive and safer way, avoiding surgery.

eP474V SMALL BOWEL POLYPOSIS. ROLE OF MOTORIZED SPIRAL ENTEROSCOPY

Authors Muñoz Pérez R.¹, Compañy Catalá L.¹, Ruiz Gómez F.¹, Roger Ibáñez M.², Rodríguez Angulo A.¹, Guilabert Sanz L.¹, Álvarez Arroyo E.¹,

Martínez Sempere J.¹, Medina Prado L.¹, Martínez Moreno B.¹, Mangas Sanjuán C.¹, Aparicio Tormo J.R.¹

Institutes 1 Alicante General University Hospital, Gastroenterology Department, Alicante, Spain; 2 Vinalopó Hospital, Gastroenterology Department, Elche, Spain

DOI 10.1055/s-0042-1745327

A 61-year-old female on anticoagulant treatment presented with anaemia and positive FOBT. No findings on gastroscopy and colonoscopy. Capsule endoscopy showed an angiodysplasia in jejunum and four polypoid lesions in ileum. With anterograde motorized spiral enteroscopy (MSE) we treated angiodysplasias with APC. In ileum we found >20 polyps of sizes 8-20mm, sessile and semipedunculated, and we performed polypectomy of two lesions for filiation. Proximal tattooing was carried out with a view to surgical treatment. As endoscopic resection was not feasible, ileocecal resection was performed. In the reported case, MSE was essential for the diagnosis and could lead to definitive treatment.

eP475 WHEN VILLOUS ATROPHY IS NOT JUST COELIAC – A CASE OF AUTOIMMUNE ENTEROPATHY

Authors Pelkonen O.¹, Norton B.¹, Mann S.¹

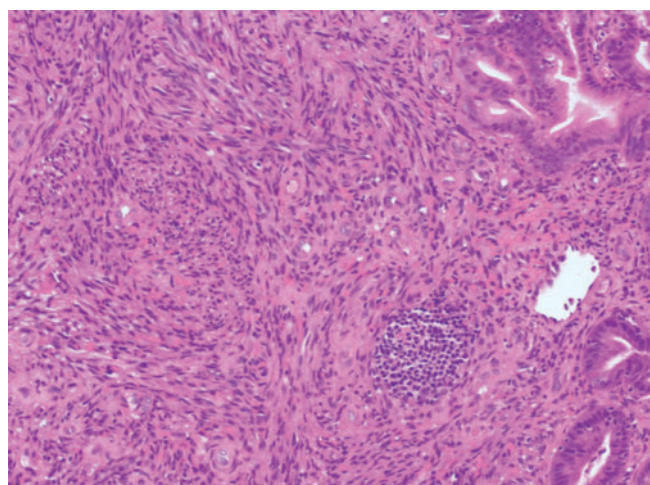
Institute 1 Royal Free London NHS Foundation Trust, London, United Kingdom

DOI 10.1055/s-0042-1745328

Aims Autoimmune enteropathy (AIE) is an extremely rare cause of seronegative villous atrophy that represents a diagnostic challenge for the general gastroenterologist. It can be a life-threatening condition characterised by intractable diarrhoea, severe malabsorption and requires systemic immunosuppression. We present the first reported case of AIE associated with intestinal Kaposi sarcoma (KS) and review the literature to provide recommendations for diagnosis and treatment.

Methods A case review of a patient who presented to the Royal Free Hospital NHS trust, London with review of the literature on AIE and KS.

Results A 31-year-old previously well HIV-negative male presented with a four month history of watery diarrhoea and 25kg weight loss. He was previously diagnosed with seronegative coeliac disease in Poland. After prolonged investigation, he was diagnosed with AIE despite negative anti-enterocyte antibodies (AEA). Clinical recovery was achieved with parenteral nutrition for type II intestinal failure and immunosuppression using high-dose corticosteroids. On subsequent endoscopy intestinal KS was identified prompting cessation of all immunosuppression and he remains in clinical remission.



► **Fig. 1** Intestinal Kaposi sarcoma, showing proliferation of spindle cells with poorly formed vascular spaces and red blood cells.

Conclusions AIE should be considered in patients with seronegative villous atrophy. It is a diagnosis of exclusion based on proposed criteria of chronic diarrhoea, malabsorption, and typical histology with/without AEA given poor sensitivity. First-line treatment is with open capsule budesonide with a response in 85%. There is sparse evidence for using biologics as second-line treatment but more targeted therapy may be appropriate given the now recognised risk of KS.

eP477V A RARE CASE OF BOWEL OBSTRUCTION

Authors Zamora Nava L.E.¹, Miranda-Zazueta G.¹

Institute 1 Instituto Nacional de Ciencias Médicas y Nutrición Salvador Zubirán, Endoscopy Department, Mexico City, Mexico

DOI 10.1055/s-0042-1745330

A 78 yo male present to the ER with abdominal pain and nausea, laboratories were unremarkable. CT scan evidenced a thickening of the proximal ileum. An anterograde enteroscopy was performed and a 2 cm ulcer was found in ileum. Pathology reported eosinophilic infiltrate (>50 eosinophiles per HPF). Parasites, bacteria, mycobacteria, and HIV were ruled out. Upper and lower endoscopy were performed. No eosinophiles were observed in samples of esophagus, stomach, and left colon. In the duodenum (54 Eo x HPF), right colon (31 Eo x HPF), and transversum (16 Eo x HPF) were observed. Diagnosis of eosinophilic enteritis was established.

eP478V SMALL BOWEL BLEEDING DUE TO SUBEPITHELIAL LESION. THINK BEYOND GIST

Authors Zamora-Nava L.E.¹, Bartnicki-Navarrete I.¹, Sanchez-Chavez X.¹, Valdovinos-Andraca F.¹, Barreto-Zuniga R.¹

Institute 1 Instituto Nacional de Ciencias Médicas y Nutrición Salvador Zubirán, Endoscopy Department, Mexico City, Mexico

DOI 10.1055/s-0042-1745331

38 yo male, with previous history of upper GI bleeding from duodenal ulcers, not associated to H. pylori. He presented to emergency department with a 5-day melena history. Upper endoscopy and colonoscopy were performed without any significant findings. A videocapsule was then performed and an active site of bleeding was found in terminal ileum. A retrograde double balloon enteroscopy was performed finding a 2 cm ulcerated subepithelial lesion, it was treated with cyanoacrylate and tattooed for subsequent surgery which was performed successfully. A CT scan showed a tumor in terminal ileum with cyanoacrylate. Final pathological report was of Neuroendocrine tumor.

eP479 INDICATIONS AND DIAGNOSTIC YIELD OF SMALL BOWEL ENDOSCOPY: ANALYSIS OF A LARGE, REAL-WORLD, DATABASE FROM A TERTIARY REFERRAL CENTER IN GREECE

Authors Viazis N.¹, Almpani F.¹, Mountaki A.¹, Koustenis K.¹, Veretanos C.¹, Tsatsa A.¹, Trikola A.¹, Beka E.¹, Arvanitis K.¹, Georgiadi T.¹, Karampekos G.¹, Vienna E.¹, Archavlis E.¹, Mela M.¹, Christidou A.¹, Chantzivangelinou C.¹, Katopodi K.¹, Papastergiou V.¹, Mantzaris G.¹

Institute 1 Evangelismos General Hospital, Athens, Greece

DOI 10.1055/s-0042-1745332

Aims Small bowel capsule endoscopy (SBCE) is a valuable diagnostic tool used for a variety of clinical indications. Using a large database, we aimed at evaluating indications and diagnostic yield of SBCE in a real-world setting.

Methods Retrospective analysis of prospectively collected data, including all patients who underwent SBCE over a 18-year period (3/2003-11/2021). Depending on the indication, patients were divided into 3 groups: group A = investigation of obscure gastrointestinal bleeding (overt or occult), group B = investigation of patients with diagnosed or probable Crohn's disease and group C = all other indications. Diagnostic yield was defined as tests with positive findings that could explain the patient's symptoms and the indication for SBCE referral.

Results Overall, 7501 patients were included (men/women: 3860/3641, mean age \pm SD: 52.6 \pm 27.3 years). The most common indication was obscure gastrointestinal bleeding (group A, n = 4012, 53.4%) followed by diagnosed or probable Crohn's disease (group B, n = 2557, 34.1%) and all other indications (group C, n = 932, 12.4%). The diagnostic yield of SBCE was 40.4% for group A, 63.4% for group B and 26.4% for group C. The most common finding in group A was angiodysplasia (n = 1253, 31.2%), in group B lesions compatible with Crohn's disease (n = 1392, 54.4%) and in group C ulcers from aspirin and NSAIDs (n = 91, 9.7%).

Conclusions Indications of SBCE in a real-world setting are largely consistent with current guidelines. The diagnostic yield of SBCE varies considerably depending on the indication, ranging from 26% to 63%.

eP480V AN UNEXPECTED DIAGNOSIS OF PRIMARY JEJUNAL GASTRINOMA

Authors [Cabbani T.¹](#), [Deiana S.¹](#), [Bonura G.F.¹](#), [Impellizzeri G.¹](#), [Ottaviani L.¹](#), [Curatolo A.¹](#), [Rainer J.¹](#), [Biancheri P.¹](#), [Soriani P.¹](#), [Manno M.¹](#)

Institute 1 AUSL Modena, Carpi Hospital, Surgical Department, Carpi, Italy
DOI 10.1055/s-0042-1745333

Gastrinoma is an infrequent neuroendocrine tumor (NET), is rarely located in an ectopic site and primary jejunal gastrinoma is anecdotal. Sometimes Zollinger-Ellison syndrome (ZES), multiple recurrent ulcers in the gastrointestinal tract due to hypergastrinemia, is associated.

Here we show the video case-report of a 72-year-old man with multiple duodenal and jejunal ulcers, caused by an ectopic gastrinoma, localized at the Treitz ligament level, adhering to the first jejunal loop.

Although ectopic site gastrinoma is usually in a difficult position to reach, we should consider endoscopic approach, prime to obtain an histologic diagnosis and to treat this condition.

eP481 THE TIMING OF POSTOPERATIVE ILEOCOLOSCOPY AND THE SEVERITY OF THE RUTGEERTS SCORE: WHAT IS THE LINK?

Authors [Hassine A.¹](#), [Hammami A.¹](#), [Dahmeni W.¹](#), [Ben Ameur W.¹](#), [Ben Slama A.¹](#), [Elleuch N.¹](#), [Braham A.¹](#), [Ksiao M.¹](#), [Jaziri H.¹](#), [Jmaa A.¹](#)

Institute 1 Sahloul University Hospital of Sousse, Gastro-Enterology Department, Sousse, Tunisia
DOI 10.1055/s-0042-1745334

Aims Currently, we recommend performing an ileocolonoscopy between 6 and 12 months to assess endoscopic recurrence in Crohn's disease (CD) patients after bowel resection using the Rutgeerts score (RS). The aim of our study was to determine the correlation between a first postoperative ileocolonoscopy performed after one year and the severity of the endoscopic recurrence.

Methods This is a retrospective study including all CD patients, over a period of 6 years (January 2011- January 2017), who have had an ileocecal or ileocolic resection. Endoscopic recurrence was assessed by ileocolonoscopy, using the RS.

Results We collected 92 patients, with a mean age of 34.72 \pm 12.9 years. CD was ileal (34.8%) or ileocolonic (56.5%). The CD behaviour was stricturing in 65.2%, fistulizing in 6.5% and mixed in 28.3% of cases. The main indications for surgery were ileal or ileocecal stenosis (78.3%), internal or external fistula (4.3%), intra-abdominal collection (17.4%). Postoperative colonoscopy was performed before one year in 54.3% of cases (n = 50) and beyond one year in 45.7% of cases (n = 42). Endoscopic recurrence (SR \geq i2) was observed in 56% of patients who had a colonoscopy before 1 year, and in 47.6% for the other group. Endoscopic recurrence was judged to be severe (SR \geq i3) in 36% of cases in the first group, and 28.6% in the second without any significant difference between the two groups (p = 0.59).

Conclusions According to our study, a first ileocolonoscopy performed after bowel resection surgery, beyond one year, was not significantly associated with more severe endoscopic recurrence.

eP482V IGG4 ASSOCIATED MULTIFOCAL ULCERATING STENOSING ENTERITIS

Authors [Zamora Nava L.E.¹](#), [Martinez-Garcia C.L.²](#), [Chable-Montero F.³](#)

Institutes 1 Instituto Nacional de Ciencias Médicas y Nutrición Salvador Zubirán, Endoscopy Department, Mexico City, Mexico; 2 Hospital San Angel Inn Universidad, Endoscopy Department, Mexico City, Mexico; 3 Hospital San Angel Inn Universidad, Pathology Department, Mexico City, Mexico
DOI 10.1055/s-0042-1745335

28 yo female with history of iron deficiency anemia with no gynecological causes and recurrent episodes of abdominal pain and bloating. Upper GI endoscopy and colonoscopy were performed without any significant findings. A video-capsule was performed showing congestive mucosa with ulcers, scares and zones of substenosis at terminal ileum. A retrograde double balloon enteroscopy was performed finding multiple areas of concentric irregular ulcers with secondary stenosis and scars were observed. Then a hydropneumatic dilation was performed without complications. The pathology report was consistent with IgG4 Associated Multifocal Ulcerating Stenosing Enteritis.

eP483 CONTRIBUTION OF GASTROSCOPY IN NON-VARICOSE UPPER GASTROINTESTINAL BLEEDING AND PREDICTIVE FACTORS FOR THE NEED FOR ENDOSCOPIC TREATMENT : A PROSPECTIVE STUDY

Authors [Addajou T.¹](#), [Rokhsi S.¹](#), [Mrabti S.¹](#), [Benhamdane A.¹](#), [Touibi A.¹](#), [Sair A.¹](#), [Berrida R.¹](#), [Elkoti I.¹](#), [Rouibaa F.¹](#), [Benkirane A.¹](#), [Seddik H.¹](#)

Institute 1 Military Hospital Mohammed V, Rabat, Morocco
DOI 10.1055/s-0042-1745336

Aims The aim of our study is to evaluate the contribution of gastroscopy in non-varicose HDH and to assess the factors that predict the need for endoscopic haemostasis.

Methods This prospective monocentric cross-sectional study of 261 patients, was conducted over a one year period from June 2020 to August 2021 in the department of endoscopic emergency of our Hospital.

Results The average age of our patients was 58 \pm 17 years, with a sex-ratio of 2.57. 91% of our patients received proton pump inhibitor (PPI) treatment with syringe pump before performing the endoscopy.

The main findings at endoscopy were peptic ulcer disease in 39% of cases, erosive gastritis or duodenitis in 30% of cases, and esophagitis in 15% of cases. Active bleeding during endoscopy was identified in 12% of cases, requiring endoscopic haemostasis in 6.5% of cases, however, surgery was necessary in 3 patients for bleeding not suitable for endoscopic haemostasis.

In a multivariate analysis following adjustment of confounding factors, only the presence of active bleeding and the use of PPI at syringe pump influenced the need for endoscopic haemostasis. In fact, the presence of active bleeding during endoscopy multiplies the risk of recourse to endoscopic haemostasis by 15, whereas the use of PPI with syringe pump seems to reduce this risk by 75%.

Conclusions NVUGIB remains dominated by ulcerative origin. According to our study PPI treatment initiated prior to endoscopy for upper gastrointestinal bleeding may reduce the proportion of patients with stigmata of recent haemorrhage and therefore reduces the need for haemostatic treatment.

eP484 EPIDEMIOLOGICAL CHARACTERISTICS AND PREDICTIVE FACTORS OF RECURRENCE AND MORTALITY OF UPPER GASTROINTESTINAL BLEEDING (UGB) UNRELATED TO PORTAL HYPERTENSION (PH)

Authors [Agoune F.Z.¹](#), [Layaida K.¹](#), [Zair Y.¹](#), [Boussafsaf M.A.¹](#), [Kaddache N.¹](#), [Belhocine K.¹](#), [Khouitar S.¹](#), [Berkane S.¹](#)

Institute 1 University of Algiers, Gastroenterology Department, Mustapha Pacha University Hospital Center, Algiers, Algeria
DOI 10.1055/s-0042-1745337

Aims UGB is one of the major emergencies in gastroenterology; its overall mortality remains high despite the major advances made in its therapeutic management. The main aim is to describe the epidemiological characteristics of UGB unrelated to PH and identify predictive factors for recurrence and mortality.

Methods Single-center prospective study including 86 patients who presented with UGB unrelated to PH between July 2018 and August 2019. Glasgow-Blatchford (GB) and Rockall scores were used for the assessment. A multivariate analysis by logistic regression is performed to identify the predictive factors of recurrence and mortality.

Results We studied 86 patients, with an average age of 64.86 years and a sex-ratio of 1.96; 68.6% had cardiac co-morbidities. A gastro-toxic drugs intake was reported in 58% of cases.

The main results are described in the table below :

► Table 1

		n (%)
Mode of revelation	Melena	31 (36%)
	Hematemesis	17 (19.8%)
	Melena with hematemesis	26 (30.2%)
	Rectal bleeding associated with hematemesis or melena	12 (14%)
Etiology	Ulcer	49 (57%)
	Esophagitis	10 (11.63%)
	Neoplasms	5 (5.81%)
	Mallory-Weiss syndrome	4 (4.65%)
	Angiodysplasias	3 (3.49%)
	Dieulafoy ulcers	3 (3.49%)
	Bulbar diverticulum	1 (1.16%)
	Normal endoscopy	11 (12.8%)
Endoscopic hemostatic treatment	Serum adrenaline injection	27 (31%)
	Clips	22 (25.6%)
	Electrocoagulation with argon plasma	13 (15%)
	Combination of these techniques	19 (22%)

23% of patients presented with shock on admission. The median GB score was 10.2 points.

Hemorrhagic recurrence was observed in 9% of cases with a GB score > 10. The median Rockall score before and after endoscopy was 3.6 and 5.18 points respectively. This score was significantly high after endoscopy in the recurrence group ($p = 0.034$).

Mortality rate was 9% ($n = 8$; 2 directly related to recurrence and 6 due to co-morbidities). Among tested variables; only neoplastic etiology appeared to be significantly associated with a high rate of recurrence ($p = 0.01$).

Conclusions In our study, ulcerative disease was the primary etiology of UGB in a predominantly male population. Recurrence rate (9%) and overall mortality (9%) were significantly related to the neoplastic etiology.

eP485 COMPARISON OF ENDOSCOPIC BAND LIGATION AND ARGON PLASMA COAGULATION FOR MANAGEMENT OF GASTRIC VASCULAR ECTASIAS IN PATIENTS OF CHRONIC LIVER DISEASE

Authors Salim A.¹, Akram M.¹, Ahmed T.¹, Farooq O.¹, Malik K.¹

Institute 1 Shaikh Zayed Postgraduate Medical Institute, Lahore, Gastroenterology and Hepatology, Lahore, Pakistan

DOI 10.1055/s-0042-1745338

Aims To compare the efficacy of endoscopic band ligation (EBL) and argon plasma coagulation (APC) for management of gastric vascular ectasias (GVE).

Hypothesis EBL is comparable to APC for management of patients with GVE.

Methods Study period was 6 months i.e. from 1st February 2021 to 1st August 2021; carried out in Department of Gastroenterology and Hepatology, Shaikh Zayed Hospital, Lahore, Pakistan.

Study design was Randomized controlled trial.

20 patients of chronic liver disease who had presented with upper gastrointestinal bleeding due to Gastric Vascular Ectasias were recruited and randomly divided into two groups of 10 patients each. Group A was managed with EBL and group B was managed with APC. After initial endoscopy and therapy (EBL or APC) these patients were followed up at 2 and 4 weeks.

Efficacy of therapy was assessed by using clinical, laboratory and endoscopic parameters

Results One patient from both groups was lost to follow up.

In group A (EBL) 3 out of 9 patients (33%) needed repeat therapy at 4 weeks and 6 out of 9 patients (66%) did not need repeat therapy during our study period.

In group B (APC) 5 out of 9 patients (56%) needed repeat therapy at 4 weeks. 4 out of 9 patients (44%) did not need repeat therapy during our study period. No significant procedure related side effects were encountered in either groups

Conclusions Endoscopic Band Ligation is comparable in efficacy to Argon Plasma Coagulation for management of Gastric Vascular ectasias, and has a similar side effect profile.

eP486 BLEEDING PEPTIC ULCER: FACTORS OF LONG-TERM RECURRENCE

Authors Amri F.¹, Belkhatay C.¹, Taamouch Z.¹, Elmqaddem O.¹, Rami S.¹, Oustani M.¹, Nassiri M.¹, Zazour A.¹, Kharrasse G.¹, Khannoussi W.¹, Ismaili Z.¹

Institute 1 CHU MOHAMMED VI, Gastroenterology, Oujda, Morocco

DOI 10.1055/s-0042-1745339

Aims The aim of our study is to identify the predictive factors associated with recurrent bleeding in peptic ulcers.

Methods A retrospective study including patients admitted to the emergency department with an upper GI bleeding, between January 2019 and October 2021, due to PUD.

Results PUD was diagnosed in 151 patients, 50.3% of patients admitted to the emergency department for an upper GI bleeding. Long-term recurrence was noted in 17 patients (11.2%). The mean age of the patients with recurrence was 55 years with a male predominance, sex ratio M/F: 4.6. 17.6% of the patients were taking anti-platelet agents, a history of ulcer was found in 23.5% of the cases, active smoking (35.3%) and NSAIDs (17.6%). 58.8% of the patients had been transfused in the previous bleeding episode. The ulcer was bulbar in 82.3% (35.2% on the posterior surface). The mean size of the ulcers was 14 mm. Forrest stages I and IIb were found in 41.1% of cases. Helicobacter Pylori was present in 58.8% of the cases which was not eradicated in 29.4% of patient (non-adhesion to treatment or therapeutic resistance) and non-adherence to PPI was observed in 23.5% of the cases.

Conclusions The prevention of recurrent bleeding in PUD should not stop only at the treatment of the acute phase, but also at the monitoring and control of certain predictive factors of recurrence. In our study, the recurrence was mainly in bulbar ulcers, the main parameters involved being: active smoking, taking NSAIDs or antiplatelet agents, non-eradication of HP and non-adherence to treatment.

eP487 DYSPHAGIA: CLINICAL MANIFESTATIONS AND ETIOLOGICAL PROFILE (ABOUT 290 CASES) MOROCCAN CENTER EXPERIENCE

Authors Aouroud H.¹, Aouroud M.¹, Ait Errami A.¹, Oubaha S.¹, Samlani Z.¹, Krati K.¹

Institute 1 UHC Mohammed VI, Hepatogastroenterology, Marrakesh, Morocco

DOI 10.1055/s-0042-1745340

Aims Dysphagia is a common health problem for consultation in gastroenterology. It is considered to be an alarm symptom requiring the use of endoscopy regardless of the clinical presentation.

The purpose of our study is to evaluate the clinical profile and various etiologies of dysphagia.

Methods This is a retrospective descriptive study where the cases of patients with a complaint of dysphagia were enrolled over the period between (2014-2021). Patients who had an oropharyngeal or neurological cause of dysphagia were excluded.

Results A total of 290 patients were included, with the male/female ratio being 2,02. The mean age of our patients is 37 years [16-76]. 38% were chronic tobacco users. Dysphagia was organic in 86%, to solids in 75% and mixed in 25%. The associated signs were: deterioration of general condition (18 cases), vomiting (65 cases), gastroesophageal reflux and epigastralgia (105 cases), regurgitation and odynophagia (33 cases), upper hemorrhage (62 cases), all of our patients underwent an upper digestive endoscopy. The common etiologies were benign stricture (34%) and carcinoma esophagus (20%). Other findings included achalasia (4.6%), esophageal candidiasis (21%), esophagitis (6.8%), Barrett's esophagus (4.5%), foreign body esophagus (1.7%), esophageal diverticulum (1%). In 10.9% of cases no etiology was detected. Treatment strategies depended of the etiology.

Conclusions Dysphagia has diverse etiology, and a majority can be diagnosed by endoscopy. Malignancy is an important cause of dysphagia. Upper digestive endoscopy must be performed in the event of any dysphagia for diagnostic and sometimes therapeutic purposes.

eP488 EXTREMELY WELL-DIFFERENTIATED ADENOCARCINOMA OF THE STOMACH: TWO CASES OF AN ITALIAN CENTER

Authors Belluardo N.^{1,2}, Milluzzo S.M.^{1,2}, Olivari N.¹, Savio A.¹, Spada C.^{1,2}

Institutes 1 Fondazione Poliambulanza Istituto Ospedaliero, Digestive Endoscopy Unit and Gastroenterology, Brescia, Italy; 2 Fondazione Policlinico Universitario A. Gemelli IRCCS -Università Cattolica del Sacro Cuore, Department of Gastroenterology, Rome, Italy

DOI 10.1055/s-0042-1745341

Aims Extremely Well-Differentiated Adenocarcinoma (EWDA) of the stomach is a rare type of gastric cancer (GC) which accounts 0.1%-0.6% of all GC. According to series published, mainly in Japan, it usually affects males ranging from 40 to 80 years old and it is located in the upper or middle third of the stomach. Since it mimics normal mucosa or intestinal metaplasia, surgical resection is often needed to establish the diagnosis.

Methods A retrospective study was performed evaluating all consecutive patients diagnosed with GC at our center from May 2009 to March 2019.

Results Out of 1000 GC, two cases (0.2%) of EWDA were identified. A 92 years old male underwent esophagogastroduodenoscopy (EGD) for weight loss. An ulcerated lesion of angulus and prepiloric region was discovered. Biopsies showed active gastritis with H. Pylori infection, mild atrophy and intestinal metaplasia. Follow-up EGDs showed persistency of the ulcer, with no malignancy at sampling, but with progressive narrowing of the lumen. Due to persisting vomiting despite endoscopic dilatation, sub-total gastrectomy was performed. Final diagnosis

showed EWDA of the stomach. Due to epigastric pain, a 68 years old female underwent EGD that showed an ulcer in the middle third of the stomach along the great curvature. Biopsies showed inflammation with intestinal metaplasia. At follow-up EGD, biopsies of the persistent ulcer showed GC. Total gastrectomy was performed and final diagnosis showed EWDA of the stomach.

Conclusions EWDA of the stomach is a rare disease of challenging diagnosis at endoscopic sampling. Surgical resection is needed for diagnosis.

eP489V A CASE OF CYSTIC PARADUODENAL PANCREATITIS WITH GASTRIC OUTLET OBSTRUCTION. TECHNICAL PITFALLS IN ENDOSCOPIC ULTRASOUND-GUIDED GASTROENTEROANASTOMOSIS.

Authors Binda C.¹, Marocchi G.^{1,2}, Coluccio C.¹, Sbrancia M.¹, Fabbri C.¹

Institutes 1 Morgagni-Pierantoni Hospital, Gastroenterology and Digestive Endoscopy Unit, Forlì, Italy; 2 University of Bologna, Department of Medical and Surgical Sciences – DIMEC, Bologna, Italy

DOI 10.1055/s-0042-1745342

Endoscopic ultrasound-guided gastroenteroanastomosis (EUS-GEA) in an 84 years-old man with cystic paraduodenal pancreatitis with gastric outlet obstruction. Jejunal loop filled with saline and methylene blue was punctured with an electrocautery enhanced lumen apposing metal stent (EC-LAMS). A guidewire was inserted through the EC-LAMS to maintain the access into the target loop. Manipulation of the guidewire lead to the displacement of the tip of the EC-LAMS outside the intestinal loop. Using the previous access, EC-LAMS was re-inserted and stent was deployed. Concluding, despite the good technical and clinical success, the use of guidewire in EUS-GEA must be carefully considered.

eP490 AIR FILLED GASTRIC ENDOSCOPIC BALLON FOR OBESITY; OUR RESULTS

Authors Bonfante F.P.¹, Zagni I.¹, Anni G.², Rossoni G.¹, Bellini F.²

Institutes 1 Hospital of Desenzano del Garda Brescia Italy- ASST Garda, Internal medicine, Desenzano Del Garda, Italy; 2 Hospital of Desenzano del Garda Brescia Italy- ASST Garda, Bariatric Surgery, Desenzano Del Garda, Italy

DOI 10.1055/s-0042-1745343

Aims To assess the efficiency for morbid obesity, with evaluation of weight loss, tolerance and side effects

Methods We performed a retrospective study in severe obesity patients with air filled gastric balloon (BAG- Heliosphere) in our Unit between 2018 and 2021; the device was inserted and removed without immediate complications.

Results 44 patients were included (31 women). The mean age was 44,2 years (range 21-59) and mean weight was 156.9 ± 30.4 kg (mean ± DS; range 93 and 223) and mean BMI 35 ± 7.2 (range 28-64). Some co-morbidity (diabetes mellitus, hypertension, hepatic steatosis) was found out with 18 patients with BMI < 30. The mean BAG gastric stay was six months (range 3.6 -8.1) and 2/3 of patients performed a following gastric bypass; final weight loss at balloon rimotion was 140.6 ± 27.5 Kg with a mean weight loss of 16.3 ± 12.3 kg and a E.W.L. of 18.8 ± 14.2%

Nausea, vomiting, and abdominal pain for only few days were the most common adverse effects; only 2 patients showed a bad tolerance of gastric balloon with anticipated rimotion; in three patients there was a spontaneous desufflation with balloon migration; in one patient the excretion of the balloon was natural, in one we conducted a laparoscopic exploration for ileal entrapment and in one patient the rimotion was performed with colonoscopy for rectal retention

Conclusions Air filled gastric balloon represents an successfully bridge between lifestyle modification and surgery; BAG balloon is an efficiency endoscopic method for weight loss with good tolerability; few but severe side effects may happen.

eP491 PROTEIN KINASE B AS A PREDICTOR OF METASTATIC GASTRIC ADENOCARCINOMA

Authors Dardor R.¹, Abd El Moniem S.², Shabana H.², Elbaiomy M.³, Megahed N.⁴

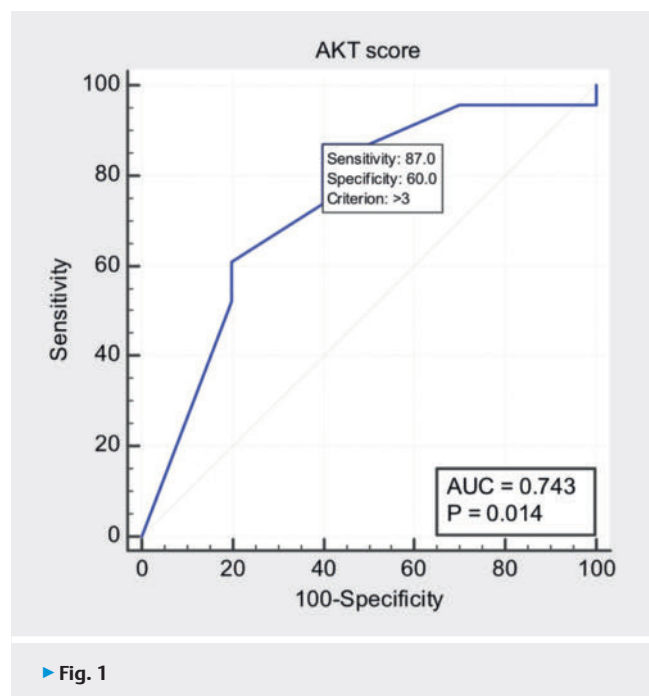
Institutes 1 Gharyan University, Internal Medicine Dep., Gharyan, Libya; 2 Mansoura University, Specilized Medical Hospital, Internal Medicine Dep. Hepatology & Gastroenterology Unit, Mansoura, Egypt; 3 Mansoura University – Faculty of Medicine, Internal Medicine Dep. Oncology Centre, Mansoura, Egypt; 4 Mansoura University – Faculty of Medicine, Pathology Dep., Mansoura, Egypt

DOI 10.1055/s-0042-1745344

Aims To study The expression of the PI3K/AKT/mTOR pathway in gastric adenocarcinoma.

Methods Enrolled Patients were divided into 2 groups, group (1) included 23 patients with metastatic gastric adenocarcinoma and group (2) included 10 patients with non metastatic disease. Liver and renal biochemical tests, CBC, H. pylori testing ,CEA , CA19-9 & metastatic radiological work up were done. Histopathologic examination and immunohistochemistry staining of samples from gastric adenocarcinoma obtained through upper GI endoscopy were done. Immunohistochemistry score for the expression of PI3K, AKT (protein kinase B) & mTOR (ranging from 0 to 12) was calculated as follows: grade of stain intensity × grade of coloration rate. A score ≥ 4 was considered positive.

Results The age ranged from 52.5 to 70 years, 66.7 % were males & 33.3 % were females. The antrum was the most commonly affected site (33 % of cases). TNM staging was as follows: T1N0M0 in 21.2 %, T1N1M0 in 39.4 %, T2N0M0 in 3 %, T3N0M0 in 6.1 %, T2N1M0 in 21.2 % & T1N3aM0 in 9.1 % of cases. The mTOR expression was positive in 54.5 % of cases, AKT expression was positive in 72.7 % & PI3K expression was positive in 36.4 % of cases with significantly higher expression of AKT in metastatic (87 %) than non metastatic disease (40 %), $P=0.010$. AKT (protein kinase B) score was significantly higher in metastatic than non metastatic disease, $P=0.028$. AKT score at cutoff value of more than 3 was a statistically significant discriminator between metastatic and non-metastatic disease, $AUC=0.743$, $P=.014$, sensitivity = 87 % & specificity = 60 % (curve).



► Fig. 1

Conclusions Protein kinase B (AKT) expression may discriminate between metastatic and non-metastatic gastric adenocarcinoma.

eP492 ENDOSCOPIC GASTROPLASTY IN ROUTINE CLINICAL PRACTICE: PROSPECTIVE REGISTRY TRIAL

Authors De Siena M.¹, Pontecorvi V.¹, Bove V.¹, Matteo M.V.¹, Carlino G.¹, Giannetti G.¹, Massari C.¹, Antonini N.¹, Boškoski I.¹, Costamagna G.¹

Institute 1 Fondazione Policlinico Universitario A. Gemelli, IRCCS, Digestive Endoscopy Unit, Rome, Italy

DOI 10.1055/s-0042-1745345

Aims The total number of bariatric endoscopic procedures is constantly increasing in routine clinical practice. Endoscopic gastroplasty (ESG) is safe and effective in patients with class I and II obesity associated with diet and lifestyle modifications. We present our results from a prospective clinical trial evaluating the role of the Endomina system (Endo Tools therapeutics, Belgium). The aim was to evaluate the mean total body weight loss (TBWL) and the mean excess weight loss (EWL) at 6 and 12 months.

Methods From July 2020 to May 2021 we enrolled in our Center 23 patients (19 female, 4 male) with class Body Mass Index 30-40 Kg/m². ESG was performed under general anesthesia using CO₂ insufflation. No procedure complications or device-related severe adverse events were observed and patients were discharged 24 hours following the procedure. All patients were followed for a total of 12 months after the ESG.

Results At 6 months mean %EWL was 62,56 and mean %TBWL was 16,89 with a higher mean quality of life (QoL) compared to that before the procedure. The 12 months follow-up after the endoscopic gastroplasty is still ongoing; from the 23 patients initially enrolled 12 completed the follow-up with good results. In fact at 12 months the mean EWL was 58,76 % and the mean TBWL was 16,25 %.

Conclusions In our clinical experience ESG in combination with diet and lifestyle modifications is a safe and effective option for patients with class I and II obesity. Further data on a larger sample of patients is needed.

eP493 ENDOSCOPIC SLEEVE GASTROPLASTY (ESG): SHORT-TERM EFFICACY AND SAFETY PROFILE IN A SINGLE CENTER SERIES

Authors del Pozo-García A.J.¹, Valdés-Lacasa T.¹, Fresneda Cuesta D.¹, Hidalgo Á.¹, Polanco R.¹, Nevado S.¹, Rafael de la Cruz D.¹, Sánchez Gómez F.¹

Institute 1 Clínicas Diego de León, Obesity Unit, Madrid, Spain

DOI 10.1055/s-0042-1745346

Aims ESG has positioned as one of the most promising incisionless techniques to induce gastric volume restriction leading to weight loss in patients with obesity, showing good results within a safe profile.

Methods Outcomes: To describe the efficacy and safety in a cohort of 50 patients elected to ESG in a single center after 6 months of multidisciplinary follow up.

Methods prospective collection of total body weight loss percentage (TBWL %) and BMI decrease along the first 6 months of follow-up after the ESG. All patients were performed by a single endoscopist (AJPG), signed the informed consent and were done under antibiotic prophylaxis, CO₂ insufflation and general anesthesia in an inpatient basis. After ruling out contraindications by upper endoscopy, we placed an esophageal overtube and used the Apollo overstretch system Gen-2 device (AOS) attached to a dual channel Olympus gastroscope. We used a Z-shape along the greater curvature to do full-thickness plications with a mean of 4.3 sutures.

Results Efficacy: 50 patients (46F) completed the 6-month schedule (11 nutritional counseling visits); aged 42.9 yo and pre-treatment BMI: 35.6 kg/m². 96 % were discharged in < 24 hours . TBWL % at 1, 3, 6 m = 9.2 %, 15.8 % and 19.3 %. Post-treatment BMI: 28.8 kg/m²; BMI decrease: 6.8 kg/m². Safety: 2 adverse events: 1 delayed haemorrhage, a week after the procedure, requiring blood transfusion and endoscopic management; and 1 esophageal hematoma, after overtube placement.

Conclusions ESG showed a remarkable short-term efficacy in our series and a good safety profile and applies as a good alternative for the treatment of obesity

eP494 THE ROLE OF ENDOSCOPIC SUBMUCOSAL DISSECTION IN THE MANAGEMENT OF GASTRIC INFLAMMATORY FIBROID POLYPS: A SINGLE-CENTER EXPERIENCE

Authors Dias E.¹, Marques M.¹, Santos-Antunes J.¹, Baldaque-Silva F.², Moutinho-Ribeiro P.¹, Macedo G.¹

Institutes 1 Centro Hospitalar de São João, Porto, Portugal; 2 Karolinska University Hospital and Karolinska Institute, Stockholm, Sweden

DOI 10.1055/s-0042-1745347

Aims To evaluate safety and effectiveness of endoscopic submucosal dissection in the management of gastric inflammatory fibroid polyps not amenable to resection with snare polypectomy.

Methods A retrospective observational study of all consecutive patients who undergone endoscopic submucosal dissection for gastric inflammatory fibroid polyps between January 2011 and December 2020 was performed.

Results There were 9 cases of gastric inflammatory fibroid polyps resected by endoscopic submucosal dissection. Most patients were female (7/9) with mean age of 62.2 years. Most patients (5/9) were symptomatic and reported dyspepsia (4/9) or vomiting (1/9). All gastric inflammatory fibroid polyps were described as solitary antral subepithelial lesions with mean diameter of 16.7 mm that, at endoscopic ultrasound, appeared well-circumscribed and homogeneous lesions located at *muscularis mucosa* and submucosa without deeper invasion. All lesions were successfully resected en-bloc and complete resection with free margins was obtained in 8/9 specimens. Adverse events were reported in 2/9 cases including one intra-procedural bleeding successfully controlled with hemostatic clips and one aspiration pneumonia that evolved favorably. Mean follow-up duration was 33.7 months (range 3-120) and no delayed complications or cases of recurrence were detected during this period.

Conclusions Endoscopic submucosal dissection appears safe and effective for resection of gastric inflammatory fibroid polyps that present as large subepithelial lesions, if performed by experienced endoscopists after adequate characterization by endoscopic ultrasound, with high rates of technical success and low recurrence rates.

eP495 CLINICAL AND ENDOSCOPIC FINDINGS IN GASTROINTESTINAL AMYLOIDOSIS: A RETROSPECTIVE SINGLE-CENTER STUDY

Authors Dias E.¹, Santos-Antunes J.¹, Marques M.¹, Vilas-Boas F.¹, Morais R.¹, Santos A.L.¹, Lopes J.¹, Carneiro F.¹, Macedo G.¹

Institute 1 Centro Hospitalar de São João, Porto, Portugal

DOI 10.1055/s-0042-1745348

Aims To describe the main clinical and endoscopic characteristics of gastrointestinal amyloidosis and evaluate its prognostic impact.

Methods A retrospective study including all patients with histological diagnosis of gastrointestinal amyloidosis between January 2010 and December 2019 was performed.

Results A total of 9 patients were identified, with mean age of 57.1 years and female predominance (6/9). The most common type was AA amyloidosis (5/9), followed by AL amyloidosis (3/9). Globally, the most commonly affected gastrointestinal segment was the stomach (6/9), followed by duodenum (4/9) and colon (3/9). There was involvement of more than one gastrointestinal segment in 3 patients. The most common clinical symptoms were diarrhea (4/9), weight loss (3/9), nausea and vomiting (2/9) and rectal bleeding (2/9). One patient was asymptomatic. Abnormal endoscopic findings related to amyloid infiltration were found in 7 patients, including areas of erythema (4/7), duodenal lymphangiectasia (2/7), polypoid lesions (2/7) or nodular mucosal surface (1/7). In the remaining 2 patients, no endoscopic abnormalities were found. Amyloi-

dosis was restricted to gastrointestinal tract in 3/9 patients, whereas in the remaining (6/9), other organ systems were involved, most commonly kidney (5/9), heart (3/9) and peripheral nervous system (2/9). During follow-up, three patients died, which translates into an overall mortality rate of 33 %. Median survival was 30 months (17.99-42.00, CI 95 %).

Conclusions Gastrointestinal involvement by systemic amyloidosis is a rare disease that often presents with nonspecific clinical manifestations and variable endoscopic findings. It is associated with high mortality and a high index of suspicion is essential to obtain an early diagnosis.

eP496 A VERY RARE CAUSE OF DIGESTIVE HEMORRHAGE

Authors Domingues Â.¹, Araújo R.¹, Pires F.¹, Carvalho A.C.¹, Ventura S.¹, Rodrigues C.¹, Pinho J.¹, Martins D.¹, Sousa P.¹, Cardoso R.¹, Cancela E.¹, Castanheira A.¹, Ministro P.¹, Silva A.¹

Institute 1 Centro Hospitalar Tondela-Viseu, Gastroenterology, Viseu, Portugal

DOI 10.1055/s-0042-1745349

Aims Case report

Methods -

Results This is a case study of an 82-year-old woman with a history of hypo-coagulated atrial fibrillation, microcytic anemia and excised left genital malignant lentigo in 2018. She was admitted to the emergency department due to asthenia and decreased strength of the inferior limbs with two days of evolution. No visible blood loss was evident. She presented a history of darkened feces although she was under oral iron therapy. In the objective examination she had pale mucous membranes and a systolic murmur. Abdominal and neurological examination were normal. Blood analysis: hemoglobin 6.5g/dL, INR 13.08 and urea 132mg/dL. She underwent erythrocyte concentrate transfusion and reverted the iatrogenic hypocoagulation. Abdominal ultrasound revealed thickening of the gastric antrum and multiple adenopathies nearby the head of the pancreas. Upper digestive endoscopy revealed several circular and friable, black papular lesions in the body and fundus gastric and duodenal bulb, with depressed center and with stigmas of recent hemorrhage.

Biopsies of the lesions were performed, whose histology revealed malignant melanoma metastases. From the complementary study, CT-TAP showed multiple pulmonary, mediastinal and peritoneal nodular formations, suggestive of secondary lesions. After a multidisciplinary assessment, it was decided the admission to the Palliative Care Unit.

Conclusions Malignant melanoma has a predisposition to metastasise to the GI tract. This case illustrates an unusual form of manifestation of this neoplasm which was identified in the sequence of iatrogenic coagulation alteration. The case highlights the rarity of the collected iconography.

eP497 A DEEP-LEARNING BASED SYSTEM FOR DIAGNOSING GASTRIC NEOPLASMS UNDER WEAK MAGNIFICATION

Authors Du H.¹, Dong Z.¹, Wu L.¹, Zhang C.¹, Luo C.¹, Yu H.¹

Institute 1 Renmin Hospital of Wuhan University, Wuhan, China

DOI 10.1055/s-0042-1745350

Aims To train and evaluate a deep-learning based system aimed at diagnosis gastric neoplastic lesions under weak magnification mode of upper gastrointestinal endoscopy, and explore its diagnostic performance.

Methods To develop the algorithm for diagnosing neoplasms under weak magnification (CNN1), a total of 3533 images (including 1464 neoplastic lesions and 2069 non-neoplastic lesions) from the Digestive Endoscopy Center of Renmin Hospital of Wuhan University from December 2017 to January 2021 were selected. 3014 were used for training and validation, 519 were used for internal test. 74 videos were selected randomly by computer-generated numbers, including 17 neoplastic lesions and 57 non-neoplastic lesions, and the video clips

of white light and weak magnifying examination of lesions were extracted and edited to form a video test set. The algorithm for diagnosing gastric neoplasms under white light (CNN2) have been developed in our previous work. In the video test, lesions will be firstly determined by CNN2 and then sent to CNN1 for further diagnosis. If CNN2 determined a lesion as non-neoplastic, the process will be ended and the diagnosis will be output immediately.

Results The sensitivity and specificity of CNN1 in the image test set were 86.13 % and 73.68 %, respectively. In the video test, the sensitivity and specificity of CNN2 were 100 % and 70.18 %, respectively. The specificity was increased to 82.46 % when CNN1 and CNN2 combined.

Conclusions The deep-learning based system can accurately identify gastric neoplastic lesions. When combined with the white-light based algorithm, the specificity was improved significantly. The system has a potential role for clinical application.

eP498 BAND LIGATION VS HOT SNARE POLYPECTOMY FOR GASTRIC POLYPS IN CIRRHOTIC PATIENTS, AN EARLY RESULTS FROM CLINICAL TRIAL

Authors Elbahr O.¹, Edrees A.¹, Kamal A.¹, Aglan R.¹, Afify S.¹

Institute 1 National Liver Institute, Hepatology and Gastroenterology, Shebin Alkawm, Egypt

DOI 10.1055/s-0042-1745351

Aims Hot snare polypectomy (HSP) is considered to be the standard technique for none invasive gastric polyps. But, safety in cirrhotic patients is questionable. Trial of band ligation of the polyps was introduced in comparison to HSP.

Methods A randomised single-blinded clinical trial was done at the National Liver Institute, Egypt after patients consent to participate. 100 cirrhotic patients, with at least 1 polyp in the stomach, were recruited for the study, 50 in each group (group 1 band ligation and group 2 HSP).

Results Demographic data and general patients' characteristics are similar between the groups. Age Mean \pm SD (57.5 \pm 6.26) and (59.6 \pm 5.83) for groups 1 and 2 respectively. Child class was (B 17 and 14) (C 33 and 36) patients for groups 1 and 2 respectively. General polyps' characteristics are present in Table 1.

There is a significant difference in procedure time with mean \pm SD (15.1 \pm 3.80 vs 36.6 \pm 6.72, $p=0.001$) favouring the band ligation. The number of patients that needed control of intraprocedural bleeding was zero in group 1 and 10 patients (8 have Argon plasma coagulation and 2 Injection of diluted adrenaline) in group 2.

► Table 1

	Band ligation polypectomy	Hot snare polypectomy
No of polyps range	1-4	1-4
Size of polyps	1.46 \pm 0.42	1.52 \pm 0.45
Type of polyps. Sessile	22	27
Pedunculated	28	23
Location of polyps. Antrum	30	26
Body	13	17
Antrum & body	2	0
Fundus	5	7

Conclusions Gastric polyps Band ligation is considered a safer and handy procedure in patients with liver cirrhosis.

eP499 WERNICKE ENCEPHALOPATHY AFTER INTRA-GASTRIC BALLOON PLACEMENT

Authors Espinel J.¹, Pinedo E.²

Institutes 1 Hospital Universitario de León, Endoscopy Unit, León, Spain;

2 Hospital Universitario de León, Radiology Department, León, Spain

DOI 10.1055/s-0042-1745352

Aims Intra gastric balloon (IGB) therapy is a minimally invasive, temporary method of inducing weight loss. During the first week, most patients will develop nausea and vomiting. Wernicke encephalopathy (WE) is an acute syndrome characterized by the classic triad of ataxia, eye movement disorders, and mental status change. It occurs in the setting of poor nutrition, recurrent emesis, and other conditions related to Thiamine deficiency (vitamin B1). WE requires emergent treatment to prevent neurologic morbidity and death. The aim of this case report is to draw attention to the possible onset of Wernicke's syndrome during IGB therapy.

Methods We present a case of a 65-year-old woman who underwent IGB therapy. Her body mass index (BMI) was 37 Kg/m². Since the placement of the balloon, the patient had had frequent vomiting that she considered normal and did not inform her endoscopist doctor. 3.5 months later she arrived at the hospital and was admitted for bradypsychia, memory deficit, disorientation in time, ocular abnormality (nystagmus), and ataxia. An immediate clinical diagnosis of WE was made and the balloon was withdrawn. Subsequent laboratory studies confirmed thiamine deficiency. A brain-MRI showed no abnormalities.

Results Prompt parenteral administration of thiamine was made. After the completion of parenteral treatment, she was discharged with an improvement of the symptoms.

Conclusions There have been few reported cases of WE related to IGB placement. We must alert physicians to this infrequent but serious adverse event. Patients should be informed that correct monitoring and follow-up are essential to prevent serious complications.

eP500 ENDOSCOPIC SURVEILLANCE IN AUTO-IMMUNE GASTRITIS: 3-YEAR FOLLOW-UP SEEMS APPROPRIATE

Authors Dilaghi E.¹, Lahner E.¹, Annibale B.¹, Esposito G.¹

Institute 1 Sapienza University of Rome, Department of Medical-Surgical Sciences and Translational Medicine, Sant'Andrea Hospital, Rome, Italy

DOI 10.1055/s-0042-1745353

Aims Autoimmune atrophic gastritis (AAG) is an atrophic gastritis restricted to the corpus and it represents a risk factor for the development of gastric cancer. European guidelines suggest a follow-up between 3 and 5 years for patients harbouring this condition. We aimed to investigate the occurrence of gastric neoplastic lesions in AIG patients at a 3-year follow-up.

Methods A longitudinal cohort study of 122 AAG patients was performed. Endoscopic surveillance was performed 3 years after diagnosis with the use of electronic chromoendoscopy and target biopsies were performed when intestinal metaplasia was recognized, otherwise, biopsies were performed according to the updated Sydney system.

Results Females were 74.6 % and the median age was 65(35-87) years. At follow-up 11 lesions were found: 6(4.9 %) type-1 neuroendocrine neoplasms, 5(4.1 %) epithelial lesions of those 2(1.6 %) were low-grade dysplastic lesions and 3(2.5 %) were intestinal-type gastric cancer. Two(18.2 %) patients were OLGA I and 9(81.8 %) were OLGA II. Only one(9.1 %) patient with type-I neuroendocrine neoplasm had first-degree familiarity for gastric cancer, whilst none of the patients with gastric cancer or epithelial dysplastic lesions. All the lesions were endoscopically treated by endoscopic mucosal resection or endoscopic submucosal dissection, except two gastric cancers that required surgery. All the patients are alive and the treatment was curative.

Conclusions AAG is a high-risk condition for the development of gastric lesions as 11 lesions were found at 3-year-follow-up suggesting this time interval seems

appropriate and safe. The appropriateness and safety of a longer time interval for endoscopic surveillance in patients with AAG need clarification.

EP501 MOLECULAR ASPECT OF THE RESISTANCE OF HELICOBACTER PYLORI TO METRONIDAZOLE AND CLARITHROMYCIN AND ITS ASSOCIATION WITH THE VIRULENCE FACTOR CAG A IN A MOROCCAN POPULATION

Authors Essaidi I.¹, Elyounsi I.², Boudier G.³, Jouimyi M.R.³, Boura H.³, Benomar H.⁴, Zerouali K.⁵, Maachi F.³

Institutes 1 Faculty of Medicine and Pharmacy, University Hassan II, Casablanca, Morocco, Laboratory of Helicobacter pylori and Gastric Pathologies, Institut Pasteur du Maroc, Casablanca, Morocco, Casablanca, Morocco; 2 university and faculty of medicine Tours France, Tours, France; 3 Laboratory of Helicobacter pylori and Gastric Pathologies, Institut Pasteur du Maroc, Casablanca, Morocco; 4 Laboratory of Histo-Cytopathology, Institut Pasteur du Maroc, Casablanca, Morocco; 5 Faculty of Medicine and Pharmacy, University Hassan II, Casablanca, Morocco, Microbiology Department, Faculty of Medicine and Pharmacy, University Hassan II, Casablanca, Morocco, Casablanca, Morocco

DOI 10.1055/s-0042-1745354

Aims The aim of our study is to determine the prevalence of resistance of H. pylori to metronidazole and to clarithromycin in a Moroccan population infected with H. pylori and to study the impact of its virulence factor cagA on its resistance to antibiotics.

Methods A prospective study including 195 consulting patients in the gastroenterology department. Consent patients underwent esogastroduodenal fibroscopy. Detection of H. pylori, resistance to clarithromycin, metronidazole and determination of the cagA gene were performed by PCR from gastric biopsies.

Results Our population consists of 89 (48.64%) men and 106 (54.35%) women. The average age of our population is 50 ± 16 years. The prevalence of H. pylori infection is 94.9% (185/195). The rates of resistance of H. Pylori to Metronidazole and to Clarithromycin were 62.7% and 14.6% respectively. The rate of resistance to metronidazole was similar in cagA positive strains and in cagA-negative strains [63% (n = 44/70) vs 63% (n = 72/115)]. While the rate of resistance to clarithromycin was slightly elevated in patients infected with strains of H. pylori cagA negative compared to cagA positive strains [18.6% vs 11.6%] (P-value = 0.49).

Conclusions Our study revealed a very high prevalence of resistance to metronidazole unlike clarithromycin. Also, Cag A status is not significantly associated with antibiotic resistance in our work. Knowing the rate of antibiotic resistance is crucial in choosing an appropriate and effective first-line empirical treatment for eradication of H. pylori infection.

EP502 GENETIC STUDY OF THE VIRULENCE FACTORS CAG A AND VACA OF HELICOBACTER PYLORI AND THEIR IMPLICATION IN GASTRIC CARCINOGENESIS

Authors Essaidi I.¹, Elyounsi I.², Jouimyi M.R.³, Boudier G.³, Boura H.³, Benomar H.⁴, Zerouali K.⁵, Maachi F.³

Institutes 1 Faculty of Medicine and Pharmacy, University Hassan II, Casablanca, Morocco, Laboratory of Helicobacter pylori and Gastric Pathologies, Institut Pasteur du Maroc, Casablanca, Morocco, Casablanca, Morocco; 2 university and faculty of medicine Tours France, Tours, France; 3 Laboratory of Helicobacter pylori and Gastric Pathologies, Institut Pasteur du Maroc, Casablanca, Morocco; 4 Laboratory of Histo-Cytopathology, Institut Pasteur du Maroc, Casablanca, Morocco; 5 Faculty of Medicine and Pharmacy, University Hassan II, Casablanca, Morocco, Microbiology Department, Faculty of Medicine and Pharmacy, University Hassan II, Casablanca, Morocco, Casablanca, Morocco

DOI 10.1055/s-0042-1745355

Aims The aim of our work is to study the association of genetic polymorphisms in the cagA and vacA genes with the risk of developing gastric lesions.

Methods The present study was carried out on 200 patients infected with H. pylori and divided into 121 cases of chronic gastritis, 51 cases of atrophic gastritis and 28 cases of intestinal metaplasia. Genotypic characterization consisted of determination of vacA subtypes and cagA status by PCR from gastric biopsies.

Results Two hundred patients with H. pylori infection were included in the study, 100 (50%) men and 100 (50%) women. The average age of our population is 50 ± 16 years. It is noted that the frequency of the cagA-vacA combination (non-virulent strain) (s2 / m2 / i2 / d2-cagA-negative) decreases with the progression of gastric carcinogenesis: 52% in chronic gastritis, 41.1% in atrophic gastritis, and 21.4% in intestinal metaplasia. Conversely, the frequency of the cagA-vacA combination, the most virulent strain (s1 / m1 / i1 / d1-cagA-positive) increases with the progression of gastric carcinogenesis: 11.5% in chronic gastritis, 15, 6% in atrophic gastritis, and 42.8% in intestinal metaplasia.

Conclusions We conclude that the virulence of cagA-vacA combinations correlates with the progression of gastric carcinogenesis and the detection of genetic polymorphisms of the cagA and vacA genes could be used for the specific characterization of virulent strains of H. pylori responsible for the development of severe gastric lesions. These data may help improve patient management for early detection of patients with high risk of gastric cancer.

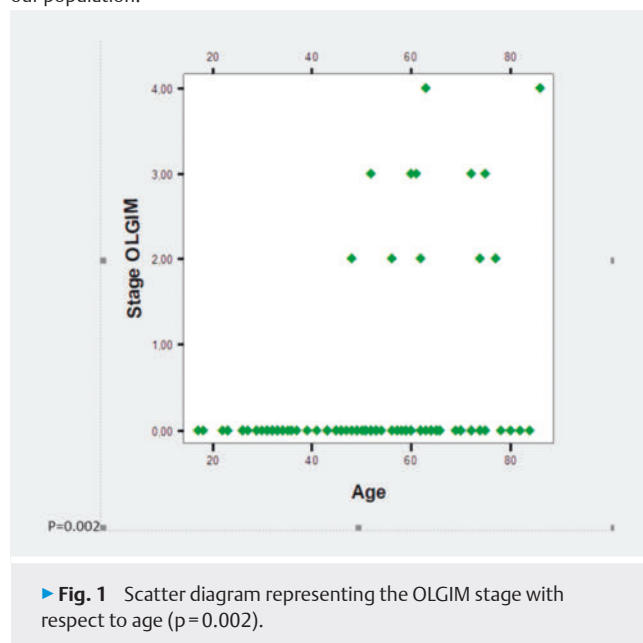
EP503 PREVALENCE OF GASTRIC PRECURSOR LESIONS IN THE POPULATION WITHOUT PREVIOUS ENDOSCOPIC STUDY. PRELIMINARY ANALYSIS

Authors Fuentes-Valenzuela E.¹, Sánchez-Delgado L.², Maroto-Martín C.², Fernandez-Prada S.², Juan-Casamayor L.², Tejedor-Tejada J.², De Benito Sanz M.², Burgueño-Gomez B.², Díez Redondo P.², Nuñez Rodríguez H.²

Institutes 1 Hospital Universitario Río Hortega, Gastroenterology Department, Valladolid, Spain; 2 Hospital Universitario Río Hortega, Gastroenterology Department, Valladolid, Spain

DOI 10.1055/s-0042-1745356

Aims Gastric cancer (GC) is the fifth most common cancer worldwide. The purpose of this study is to analyse the incidence of preneoplastic lesions (PN) in our population.



► Fig. 1 Scatter diagram representing the OLGIM stage with respect to age (p = 0.002).

Methods This is a cross-sectional study, we have included patients referred to the endoscopy unit for gastroscopy. Exclusion criteria were: treatment with

proton pump inhibitors (PPIs) or antibiotics, surveillance of PN and prior investigation and/or treatment of *H. Pylori* (HP). Biopsies were taken according to Sydney protocol. In each biopsy the presence of *H. pylori*, non-atrophic gastritis, atrophic gastritis, intestinal metaplasia, dysplasia or gastric cancer was determined. To evaluate the histological inflammation we used the Operative-Link on Gastritis-Assessment (OLGA) and the Operative-Link on Gastric-Intestinal Metaplasia (OLGIM).

Results We included 100 patients. 61 % were women, aged between 17 and 86 years (mean 52 ± 17 SD). The indication of gastroscopy was: dyspepsia (64 %), vitamin B12 deficiency (19 %), iron deficiency anemia (13 %), ulcerous disease (4 %). Smoking habit: no smokers (67 %); smokers (19 %) and former smokers: 14 %. HP is present in the antral gastric mucosa in 31 % of patients. We don't find relationship between OLGIM or OLGA stage and gender, smoking habit and HP.

► **Table 1** The OLGA and OLGIM stages incidence in our population.

	OLGA	OLGIM
Stage 0	69 %	88 %
Stage 1	20 %	0
Stage 2	10 %	5 %
Stage 3	1 %	5 %
Stage 4	0	2 %

Conclusions -The incidence of gastric precursor lesions is low in our population.

-The severity according to the OLGIM classification increases significantly with age. According to these results gastroscopy in the young population could be avoidable, at least in dyspepsia.

eP504 CLINICAL BEHAVIOR AND LONG-TERM OUTCOMES OF FUNDIC GLAND POLYPS

Authors Garrido I.¹, Marques M.¹, Macedo G.¹

Institute 1 Centro Hospitalar Universitário de São João, Gastroenterology, Porto, Portugal

DOI 10.1055/s-0042-1745357

Aims Fundic gland polyps (FGPs) are the most common gastric polyps and have been regarded as benign lesions with little malignant potential. However, progression data from large series are lacking. The aim of this study was to evaluate the clinical behavior and long-term outcomes of FGPs.

Methods Data from all patients histologically diagnosed with FGPs from January 2015 to November 2021 in a single tertiary center were retrospectively analyzed

Results A total of 233 patients were included, the majority female (61.4 %), with a median age of 61 years old (IQR 48-70). Most of the individuals (55.8 %) were on a proton pump inhibitor. Endoscopy showed a single polyp in 80 (34.3 %) cases. The polyps ranged from 1 to 30mm, with a median size of 5mm (IQR 4-8). In nine (3.9 %) patients, the FGPs were located in the antrum. Most cases (94.1 %) were negative for *Helicobacter pylori*. The prevalence of dysplasia in our study population was 4.3 %. These patients most often had familial adenomatous polyposis syndrome (60 % vs. 4.5 %, $p < 0.001$) and larger polyps (10mm vs. 5mm, $p = 0.001$). Follow-up endoscopies were available in 68 (29.2 %) individuals, after a median period of 24 months. Fifty-one (75 %) patients still had polyps, of which 3 with low-grade dysplasia. No cases of FGPs with high-grade dysplasia or malignancy were diagnosed during the follow-up.

Conclusions In our cohort, FGPs with dysplasia were seen primarily in patients with familial adenomatous polyposis, so the genetic study should be considered. Follow-up data support the indolent nature of these polyps.

eP505 HEMOSTATIC POWDER SPRAY – A GOOD OPTION TO PREVENT BLEEDING AFTER ENDOSCOPIC SUBMUCOSA DISSECTION?

Authors Garrido I.¹, Morais R.¹, Marques M.¹, Macedo G.¹

Institute 1 Centro Hospitalar Universitário de São João, Gastroenterology, Porto, Portugal

DOI 10.1055/s-0042-1745358

Aims Endoscopic submucosal dissection (ESD) has been recommended as a standard treatment for gastrointestinal neoplasms and can provide excellent long-term survival. However, post-ESD bleeding is a severe adverse event. The aim of this study was to investigate whether hemostatic powder spray (hemostay) can prevent post-ESD bleeding.

Methods We collected retrospective data from all patients who underwent ESD in a single tertiary center between September 2019 and November 2021.

Results A total of 201 patients were included, the majority male (55.2 %), with a median age of 69 years old (IQR 61-76). Thirty-five (17.4 %) individuals were taking antithrombotic drugs and 16 (8.0 %) were under anticoagulants. 127 (63.2 %) patients underwent ESD for esophagogastrroduodenal lesions and 74 (36.8 %) for colorectal tumors. At the end of the procedure, 8 (4.0 %) patients had prophylactically applied hemostay on the post-ESD ulcer. The tumor size was 37.5mm in the hemostay group and 25.0mm in the control group ($p = 0.013$). In the hemostay group, the median resection time was 150 min and in the control group it was 60 min ($p = 0.002$). The total post-ESD bleeding rate was 5.0 %, on average 2 days after the procedure. Although there was no case of bleeding in the hemostay group, the post-ESD bleeding rate was not significantly different compared to the control group ($p = 0.509$). Anticoagulant use was an independent risk factor for post-ESD bleeding ($p < 0.001$).

Conclusions In our cohort, hemostay did not demonstrate a significant effect on the prevention of post-ESD bleeding. Nevertheless, it should be considered in larger tumors, longer procedures and hypocoagulated patients.

eP506 CONTRIBUTION OF ROUTINE DUODENAL BIOPSIES IN THE DIAGNOSIS OF CELIAC DISEASE IN PATIENTS WITH IRON DEFICIENCY ANEMIA

Authors Hassine A.¹, Mrabet S.¹, Tabbabi R.¹, Harbi R.¹, Akkari I.¹, Hassine A.¹, Ben Jazia E.¹

Institute 1 Hopital Farhat Hached, Sousse, Tunisia

DOI 10.1055/s-0042-1745359

Aims Celiac disease (CD) is a well-known cause of iron deficiency anemia (IDA). Histological examination is a corner-stone in reaching the diagnosis. The aim of our study is to assess the role of duodenal-biopsies in patients presenting with IDA and to examine the prevalence of CD in these patients.

Methods We reviewed a retrospectively-collected-data on all patients who underwent gastroscopy for the investigation of IDA in our endoscopy-unit between January 2018 and August 2021. Anemia was defined as hemoglobin < 135 g/L in males and < 120 g/L in females. All our patients had a ferritin < 15 µg/L. Results of histological examination were stratified according to the Modified-Marsh-Oberhuber-classification.

Results A total of 97 patients had an upper-gastro-intestinal (GI) endoscopy for the investigation of unexplained-IDA. There were 33 men and 64 women. The mean age was 47.18 ± 17 years. Of the 97 upper-GI endoscopy, 79 (81.4 %) were macroscopically normal. A mucosal abnormality was established in 18 patients including reduction or scalloping of Kerckring folds ($n = 7$; 7.2 %), nodular mucosa with mosaic patterns ($n = 5$; 5.1 %), mucosal ulceration ($n = 4$; 4.1 %), sessile polyp ($n = 1$; 1.1 %), congestive duodenal mucosa ($n = 1$; 1.1 %). Histological abnormalities were noted in 15.5 % ($n = 15$) of cases of which 11 patients (11.3 %) displayed histological features of CD consistent with Modified-Marsh-Oberhuber-classification type MARSH II ($n = 1$; 1 %), type MARSH III ($n = 7$; 7.2 %) and type MARSH VI ($n = 3$; 3.1 %). Approximately, a quarter of newly diagnosed cases of

CD have an endoscopic appearance that is entirely normal. Only one patient over 50 years old was diagnosed with CD. Abnormal biopsies consistent with CD had a higher prevalence in females (8.2 % vs 3 % in males)

Conclusions Duodenal biopsies obtained during IDA-evaluation gives a 11.3 % diagnostic benefit in CD. Therefore, this practice should be systematically included in the diagnostic work-up of patients with IDA even if the endoscopic appearance of the mucosa is normal. However, our study shows low rates of CD in patients over 50 years.

eP507 CORRELATION BETWEEN PORTAL HYPERTENSIVE GASTROPATHY AND SEVERITY OF CIRRHOSIS

Authors Hassine A.¹, Mrabet S.¹, Tababi R.¹, Harbi R.¹, Akkari I.¹, Hassine A.¹, Ben Jazia E.¹

Institute 1 Hopital Farhat Hached, Sousse, Tunisia

DOI 10.1055/s-0042-1745360

Aims Portal hypertensive gastropathy (PHG) is a common endoscopic finding in cirrhotic patients. Its relation with the severity of liver disease is controversial. The aim of this study was to determine the association of PHG with cirrhosis severity.

Methods We retrospectively collected data of all consecutive patients with cirrhosis of various aetiologies in our department. All patients underwent esophagogastroduodenoscopy (EGD). Findings related to PHG were noted. PHG severity was assessed and graded according to the NIEC classification. Liver disease severity was assessed by Child-Pugh and MELD scores.

Results A total of 200 patients were included in this study. There were 88 male (44 %) and 122 female (56 %). The mean age was 57 ± 15 years old. The mean Child-Pugh and MELD scores were 8 and 15 respectively. Patients' Child-Pugh classes were distributed as follows: Child-A (22 %), Child-B (55 %) and Child-C (23 %). PHG was observed in 142 (71 %) patients, of which 28.8 % ($n = 41$) had mild PHG, 50 % ($n = 71$) had moderate PHG while 21.2 % ($n = 30$) had severe gastropathy. PHG was neither correlated to MELD-score ($p = 0.3$) nor Child-Pugh score ($p = 0.2$) nor Child-Pugh class (A: $p = 0.8$; B: $p = 0.2$; C: $p = 0.2$). Regarding gastropathy severity, severe form was just as well found to be not associated with the previous parameters: MELD-score ($p = 0.5$), Child-Pugh-score ($p = 0.8$) and Child-Pugh class (A: $p = 0.2$; B: $p = 0.2$; C: $p = 0.8$).

Conclusions In our study, neither the presence of PHG nor its severity were correlated to the severity of cirrhosis.

EP508 PLACE OF A SYSTEMATIC UPPER GASTROINTESTINAL ENDOSCOPY IN CROHN'S DISEASE

Authors Hassine A.¹, Akkari I.¹, Mrabet S.¹, Ben Jazia E.¹

Institute 1 Farhat Hached University Hospital, Gastro-Enterology Department, Sousse, Tunisia

DOI 10.1055/s-0042-1745361

Aims Esophagogastroduodenoscopy (EGD) with the realization of biopsies, in Crohn's disease (CD), researches upper locations of the disease. Our study aimed to study the interest of systematic EGD with anatomopathological study in the detection of upper CD locations.

Methods A retrospective study was conducted involving all patients with CD followed in our center over a period of 4 years (January 2016- January 2020).

Results 56 patients with CD were included in this study, of which 53.6 % were female. The mean age was 33.29 years. In our series, Only 19.23 % ($n = 5$) of the EGDs were normal. The most frequent endoscopic abnormalities found were: fundic gastropathy that was congestive in 26.92 % of cases ($n = 7$) and nodular in 7.69 % ($n = 2$); congestive antropany in 46.15 % ($n = 12$) and nodular in 15.38 % ($n = 4$); ulcerated or congestive bulbitis in 7.69 % ($n = 2$) and 19.23 % ($n = 5$), respectively. Duodenitis was observed in 11.53 % of patients ($n = 3$). Anatomopathological examination, noted chronic active gastritis in 66.7 % of patients who have had systematic EGD, vs 92.9 % in symptomatic patients, without statistically significant difference ($p = 0.11$), the same for presence of

granuloma (16.7 % in the 1st group vs 14.3 % in the 2nd group, $p = 0.64$), and the presence of a duodenal lymphocytic infiltrate (8.3 % vs 0 %, $p = 0.46$).

Conclusions According to our study, a systematic EGD, in CD, has an important contribution in the detection of the upper localizations which constitute a severity factor of the disease.

eP509 UPPER ENDOSCOPY FINDINGS IN PATIENTS WITH FAMILIAL ADENOMATOUS POLYPOSIS

Authors Jankovic K.¹, Jovanovic I.²

Institutes 1 Clinic for Gastroenterohepatology, University Clinical Centre of Serbia, Belgrade, Serbia; 2 Euromedik Hospital, Belgrade, Serbia

DOI 10.1055/s-0042-1745362

Aims It is known that patients with familial adenomatous polyposis (FAP) are at risk for other cancer mainly arising from other parts of the gastrointestinal (GI) tract. Therefore, this study was aimed to assess the upper endoscopy findings observed in our cohort.

Methods Twenty patients diagnosed with FAP who underwent forward- and side-view upper endoscopy were included. Demographic information, lesion's morphology and histopathology were assessed. If intervention was performed, the rate of immediate and delayed complications were analyzed.

Results The mean age of the cohort was 35.1 ± 9.96 , 75 % were male. Gastric polyps were observed in 60 % of patients (12/20) with fundic gland polyps (FGP) to be the most common type. Duodenal adenomas were found in 85 % of patients (17/20). While most of the patients had tubular adenoma with low grade dysplasia (LGD), 11 % showed high grade dysplasia (HGD) and ampullar adenocarcinoma was observed in one patient (5 %). Average duodenal adenoma size was 12 mm (± 9.23). Lesions >10 mm in size, found in 9 patients, were resected by means of endoscopic mucosal resection (EMR). Massive post-EMR GI bleeding was observed in two patients requiring emergency endoscopy with uneventful outcomes. Two patients were referred for elective surgery due to large (30 mm) postbulbar adenoma which appeared difficult for EMR (Spigelman stage IV).

Conclusions The most common findings were duodenal adenomas following FGP. We found that the prevalence of gastroduodenal lesions in our cohort is high therefore this study reaffirms the need for detailed and routine evaluation of upper GI lesions in patients with FAP.

eP510 UNDERWATER ENDOSCOPIC MUCOSAL RESECTION (EMR) FOR TREATING GASTRIC NEOPLASMS

Authors Kawakami Y.¹, Yamamoto S.², Takeuchi Y.¹, Hayata N.², Uedo N.¹

Institutes 1 Osaka International Cancer Institute, Gastrointestinal Oncology, Osaka, Japan; 2 National Hospital Organization Osaka National Hospital, Gastroenterology and Hepatology, Osaka, Japan

DOI 10.1055/s-0042-1745363

Aims Underwater endoscopic mucosal resection (UEMR) has been developed and widely used in the colon. Its application in the stomach has been reported few. This study aimed to evaluate the efficacy and the safety of UEMR in the stomach (G-UEMR).

Methods From January 2014 to June 2021, 32 consecutive patients who had or had been suspected gastric neoplasms were enrolled in this retrospective uncontrolled study. They were resected using G-UEMR. Short term outcomes were assessed using a database from the medical records.

Results Among 32 lesions, 22 were neoplastic lesions including adenoma and adenocarcinoma, 5 were hyperplastic polyps, 2 were submucosal lesions. 3 were without tumor though the neoplasm was suspected in prior endoscopy. Mean size was 12.7 mm, mean procedure time was 5.5 min. R0 resections were obtained in all included early gastric cancer ($n = 15$). There were no immediate complications but an aspiration pneumonia occurred in one patient.

Conclusions G-UEMR appears to be a safe, easy, and effective for treating small gastric lesions including neoplasms.

eP511 LONG TERM OUTCOME OF GASTROINTESTINAL ENDOSCOPIC RESECTION IN PATIENTS WITH LIVER CIRRHOSIS

Authors Kim S.H.¹, Kim D.H.¹, Park S.-Y.¹, You H.S.¹, Cho S.Y.¹, Yoon J.H.¹, Park C.H.¹, Kim H.S.¹, Choi S.K.¹

Institute 1 Chonnam National University Hospital, Internal Medicine, Gwangju, Korea, Republic of

DOI 10.1055/s-0042-1745364

Aims Endoscopic resection has developed over the years. The main complications are perforation and bleeding. This study aimed to evaluate safety and effectiveness of digestive endoscopic resection in patients with cirrhosis

Methods This retrospective, open-label, single-center study included all consecutive patients with cirrhosis who were admitted for endoscopic resection between 2004 and 2020. Safety, efficacy, and risk factors for delayed bleeding were analyzed.

Results A total of 8970 patients underwent endoscopic resection for gastrointestinal neoplasia, and 228 had cirrhosis. Although the risk of post procedure bleeding is high in Child B patients (Child A – 3/231, 1.29%, Child B 4/41, 9.75%), the procedure can be performed relatively safely. After the procedure, there was one case of death due to bleeding, and the other cases were due to cirrhosis or liver cancer.

Conclusions Endoscopic resection was safe and effective in patients with mild (Child – Pugh class A/B) cirrhosis, and should be proposed as a first option for treatment of superficial neoplasia. Additional data in patients with severe cirrhosis are needed to confirm the safety in this population.

eP512V COMBINED ENDOSCOPIC-FLUOROSCOPIC ASSESSMENT OF A SUPRADIAPHRAGMATIC CAVITY (MIS)DIAGNOSED AS COVID-19-RELATED LUNG ABSCESS

Authors Koffas A.¹, Chougias D.¹, Papaefthymiou A.¹, Dimeas I.², Tourlakopoulos K.², Karakasis E.², Moisidou R.³, Argyriou K.¹, Kapsoritakis A.⁴, Potamianos S.⁴, Manolakis A.⁴

Institutes 1 University Hospital of Larissa, Department of Gastroenterology, Larissa, Greece; 2 Faculty of Medicine, University of Thessaly, Department of Respiratory Medicine, Larissa, Greece; 3 University Hospital of Larissa, Department of Radiology, Larissa, Greece; 4 University of Thessaly School of Medicine, Larissa, Greece

DOI 10.1055/s-0042-1745365

An inpatient treated for COVID-19 was referred for esophagogastroduodenoscopy, after cross-sectional imaging demonstrated a 'left-lower-lobe lung abscess', spontaneously draining into the stomach. Gastroscopy revealed a paradoxical torsion of the proximal stomach and engulfment of converging proximal gastric folds through a diaphragmatic defect. Contrast was infused into the 'presumed abscess cavity' via a through-the-scope catheter. Upon fluoroscopy, no contrast leak was documented. The presence of a well-demarcated cavity became evident. The endoscope was advanced into the cavity revealing ulcerated gastric mucosa. The findings were compatible with the occurrence of a 'paraesophageal' hiatal hernia, following traumatic diaphragmatic laceration during a car accident 14 months ago. The patient was referred for surgical management.

eP513 GASTROCOLONIC FISTULAE : A RARE COMPLICATION OF FREQUENT DISEASES

Authors Koulali H.¹, Zazour A.¹, Kharrasse G.¹, Ismaili Z.¹, Khannoussi W.¹

Institute 1 Mohammed the First University, Digestive Disease Research Laboratory, The department of Hepato-gastroenterology, Mohammed VI University Hospital, Oujda, Morocco

DOI 10.1055/s-0042-1745366

Aims Gastrocolic fistula is a rare entity accruing mainly in the setting of malignancy, we present two cases of gastrocolic fistulas encountered while realizing gastroscopies for upper gastro-intestinal bleeding

Methods we reported two cases of gastrocolic fistulas

Results The first patient, a 43 years old male undergoing chemotherapy for a gastric large B cell lymphoma diagnosed two months ago, presented to the emergency room with melena, a gastroscopy was realized revealing thickened folds and exophytic mucosal lesions related to his lymphoma and in the antrum a large orifice leading to a triangular shaped lumen with no villi corresponding to the transverse colon, these findings were confirmed by an abdominal CT-scan with oral contrast revealing the gastrocolic fistulae with a premature opacification of the colon contrasting with a late opacification of the small bowel.

In the second case, a 53 years old male with a history of surgery for a pyloric stenosis 21 years ago, presented to the emergency room with hematemesis, the patient also reported a liquid diarrhea and unintentional weight loss, gastroscopy revealed a large Forrest III ulcer occupying the gastrointestinal anastomosis and showing 3 orifices, two of them led to jejunal segments, while the third orifice led to a colonic mucosa with haustrations clearly observed. A CT-scan with oral contrast was indicated but refused by the patient.

Conclusions Gastrocolic fistulae is a rare complication of malignant and benign pathologies, gastroscopy is key to diagnosis and cross sectional imaging provides complementary informations.

eP514 THE USE OF GASTRODUODENAL FULL THICKNESS RESECTION DEVICE (FTRD) FOR THE TREATMENT OF UPPER GASTROINTESTINAL LESIONS. A CASE SERIES FROM A GREEK TERTIARY HOSPITAL

Authors Kranidiotis G.¹, Tsoukalas N.¹, Trikola A.¹, Ellina M.¹, Rodias M.¹, Karakoidas C.¹, Vasileiadis K.¹, Sgouros S.¹, Stefanidis G.¹

Institute 1 Naval Hospital of Athens, Gastroenterology Unit, Athens, Greece
DOI 10.1055/s-0042-1745367

Aims Endoscopic full-thickness resection (EFTR) of upper gastrointestinal tract lesions using the gastroduodenal FTRD is an innovative treatment for gastric wall tumors. We aimed to present our experience assessing the efficacy and safety of FTRD.

Methods 5 patients (4 male, mean age 60 ± 5 years) with submucosal lesions, mean size 13 (10-16) mm, in the antrum and corpus of the stomach were included. The process begins by marking the lesion and FTRD is mounted onto a gastroscop with a 3,7mm working channel. The insertion of the device in the esophageal lumen is facilitated by dilation with a 20x60mm balloon catheter, which is successfully removed. The grasper enables the complete insertion of the lesion into the FTRD cap and the clip is released. After successful clip deployment, resection is performed with the incorporated snare.

Results Technical success and R0 resection were achieved in all patients (100%) with a mean procedural time of 23 min. Bleeding was occurred in one patient that was successfully treated with APC (Argon Plasma Coagulation) application. No major adverse events noted. Patients did not require hospitalization or further intervention. Histopathological analysis confirmed R0 resection in all patients and established a definite diagnosis of a gastrointestinal stromal tumor in 3 patients, a neuroendocrine tumor and ectopic pancreas in two other patients.

Conclusions Gastroduodenal EFTR may serve as a minimally invasive, safe, effective endoscopic method for the treatment of small subepithelial tumors. Further studies are needed in order to evaluate the clinical benefit and long-term outcome of EFTR in selected patients.

eP515V THE USE OF GASTRODUODENAL FULL-THICKNESS RESECTION DEVICE (FTRD) FOR THE TREATMENT OF UPPER GASTROINTESTINAL LESION

Authors [Kranidiotis G.¹](#), [Tsoukalas N.¹](#), [Trikola A.¹](#), [Sgouros S.¹](#), [Vasileiadis K.¹](#), [Stefanidis G.¹](#)

Institute 1 Naval Hospital of Athens, Gastroenterology Unit, Athens, Greece

DOI 10.1055/s-0042-1745368

We performed endoscopic full-thickness resection using the gastroduodenal FTRD in order to resect a submucosal lesion of 14mm in the antrum of stomach of a 58 years old male patient. Technical success and R0 resection was achieved with a procedural time of 26 min. Histopathological analysis confirmed R0 resection and demonstrated a definite diagnosis of a gastrointestinal stromal tumor (GIST). No adverse events noted and the patient did not require hospitalization or further intervention.

eP517V POSSIBLY THE OLDEST KNOWN PATIENT TO HAVE EUS-GUIDED GASTROJEJUNOSTOMY TO ALLEVIATE DUODENAL OBSTRUCTION

Author [Lajin M.¹](#)

Institute 1 SHARP Health Care, San Diego, United States

DOI 10.1055/s-0042-1745370

A 98-year-old female presented with vomiting, and weight loss. CT showed duodenal obstruction, duodenal diverticula, a ureteral mass, and bilateral hydronephrosis.

Push enteroscopy showed no intraluminal mass and multiple duodenal diverticula associated with narrowing/twisting.

A catheter was left in the jejunum to distend the target loop and EUS-guided gastrojejunostomy was performed using a 2 cm LAMS.

CT confirmed gastric decompression. She tolerated a soft diet.

She declined any workup or intervention for the hydronephrosis, and eventually, died from renal failure under hospice care.

After an extensive search, we think she might be the oldest patient known to have EUS-guided gastrojejunostomy.

eP518V EUS-GUIDED TREATMENT OF GI BLEEDING SECONDARY TO GASTRIC VARICES USING COILS AND 2-OCTYL CYANOACRYLATE INJECTION

Author [Lajin M.¹](#)

Institute 1 SHARP Health Care, Gastroenterology, San Diego, United States

DOI 10.1055/s-0042-1745371

An 82-year-old female with liver cirrhosis secondary to NASH presented with upper GI bleeding and was found to have gastric varices IGV 1 with a fibrin clot. No esophageal varices or a feeding vessel were identified.

Using a 19 g needle the varices were treated using a total of 3 coils (14 mm x 14 cm) and a total of 1 ml of 2-octyl cyanoacrylate. Complete ablation was confirmed on EUS-doppler.

No signs of bleeding on 3 and 6 months follow-up.

eP519V CURATIVE ENDOSCOPIC FULL-THICKNESS RESECTION OF A 17-MM GASTRIC CARCINOID INVADING THE SUBMUCOSA USING THE GFTR DEVICE

Author [Lajin M.¹](#)

Institute 1 SHARP Health Care, Gastroenterology, San Diego, United States

DOI 10.1055/s-0042-1745372

A 41-year-old male was referred for a gastric sub-epithelial lesion. EGD/EUS showed a sub-epithelial lesion in the gastric body extending to the submucosa measuring 17 mm. He opted for Endoscopic full-thickness resection.

After marking the borders, the passage of the device was facilitated by a jaw thrust.

The lesion was pulled inside the cap using an anchor. Following that, the lesion was resected and retrieved. There was minor bleeding treated with thermal coagulation.

The pathology was well-differentiated carcinoid invading to the submucosa, the margins were free.

Follow up 4 months later showed a scar with no residual tumor.

eP520V EUS-GUIDED GASTRO-BULBOSTOMY (EUS-GBS) WITH LUMEN-APPPOSING METAL STENT (LAMS) AS A ROUTE FOR ERCP IN UPSIDE-DOWN STOMACH (UDS)

Authors [Maroto-Martin C.¹](#), [Sanchez-Delgado L.¹](#), [Sanchez-Ocana R.¹](#),

[Estradas-Trujillo J.A.¹](#), [Sciarretta M.¹](#), [de la Serna C.¹](#), [Perez-Miranda M.¹](#)

Institute 1 Hospital Universitario Rio Hortega, Gastroenterology and Hepatology, Valladolid, Spain

DOI 10.1055/s-0042-1745373

Background Gastric herniation into the posterior mediastinum precludes ERCP in UDS.

Case A duodenoscope loops into an UDS preventing pyloric passage. A dilated CBD is imaged with a linear echoendoscope. EUS-guided transgastric cholangiography confirms choledocholithiasis. An 8.5F nasobiliary tube is placed through the pylorus into the duodenum. Contrast, saline and methylene-blue injection through the tube outline and distend the bulb next to the stomach. A 20x10mm cautery-enabled LAMS is placed for gastro-bulbostomy and balloon-dilated. A duodenoscope is passed through the LAMS for sphincterotomy and stone removal.

Comments EUS-GBS allowed single-session ERCP in UDS, overcoming an uncommon reason for ERCP failure.

eP521V “MUSHROOM-LIKE” GASTRITIS. AN UNUSUAL CASE OF LIFE-THREATENING UPPER GASTROINTESTINAL BLEEDING!

Authors [Martins Pinto da Costa A.¹](#), [Abad Izquierdo E.¹](#), [Relea Pérez L.¹](#),

[Calvo Moya M.¹](#), [Santos Pérez E.¹](#), [Dotor de Lama A.²](#), [Vera Mendoza M.¹](#)

Institutes 1 Hospital Universitario Puerta de Hierro, Majadahonda, Aparato Digestivo, Madrid, Spain; 2 Hospital Universitario Puerta de Hierro, Majadahonda, Anatomía Patológica, Madrid, Spain

DOI 10.1055/s-0042-1745374

Eosinophilic gastritis is an infrequent inflammatory disorder characterized by eosinophilic infiltration of the stomach.

A 26-year-old woman with lactose intolerance came to the emergency room due to melena. Gastroscopy was performed spotting a Forrest IIB ulcer (clips and sclerosis). Additionally, the body and fundus mucosa had multiple pseudopolypoid formations resembling a *mushroom field*. Histology showed inflammatory gastritis with abundant eosinophils. Patient received treatment with omeprazole with favourable evolution.

Eosinophilic gastritis usual clinical presentation includes abdominal pain and distention, vomiting and diarrhea. Debuting in the form of life-threatening upper gastrointestinal bleeding is extremely rare and requires a high degree of suspicion.

eP522 INCIDENCE, RISK AND MANAGEMENT OF PYLORIC STENOSIS AFTER GASTRIC ENDOSCOPIC SUBMUCOSAL DISSECTION: EXPERIENCE OF A WESTERN CENTER

Authors [Mascarenhas A.¹](#), [Barreiro P.^{1,2}](#), [Félix C.¹](#), [Chagas C.¹](#)

Institutes 1 Centro Hospitalar Lisboa Ocidental, Hospital de Egas Moniz, Gastroenterology, Lisbon, Portugal; 2 Hospital Lusíadas Lisboa, Gastroenterology, Lisbon, Portugal

DOI 10.1055/s-0042-1745375

Aims We aimed to evaluate incidence, risk and management of pyloric stenosis (PS) after gastric endoscopic submucosal dissection (ESD).

Methods We reviewed 262 superficial gastric neoplasms who underwent ESD at a Portuguese center between January 2012–October 2021. Pyloric involvement was considered if the neoplasm or the scar affected the pylorus. PS was diagnosed if a standard endoscope could not pass the pylorus. Oral corticosteroids were prophylactically administered if pyloric involvement with a mucosal defect of >75 % of the circumference. Surveillance endoscopy was performed 3–6 months after discharge, earlier if symptoms developed.

Results Among the 262 gastric ESD, 43.5 % (n = 114) neoplasms were in the antrum and the pylorus was involved in 27.2 % (n = 31) (direct involvement: n = 16; scar only: n = 15). Regarding the mucosal defect, 5.3 % of scars occupied >75 % of the circumference. The incidence of PS was 9.7 % (n = 3) if the pylorus was involved (P < 0.01). All cases of PS had direct involvement of the pylorus and a mucosal defect >75 %. Lesion size was significantly associated with PS (P < 0.001) but morphology and fibrosis did not correlate. Endoscopic balloon dilation was used in 2 cases, together with topical corticosteroids, while the remaining case received surgery due to non-curative resection.

► Table 1

Risk factors for pyloric stenosis after ESD of superficial gastric neoplasms in the antrum (n = 114)		Pyloric stenosis (n = 3)	No pyloric stenosis (n = 111)	p-value
Lesion size	≥ 30 mm	100 %	7.21 %	<0.001
Extent of mucosal defect	> 75 %	100 %	2.7 %	<0.001
Involvement of pylorus	Direct	100 %	11.71 %	<0.01
	Scar only	0 %	13.51 %	

Conclusions The incidence of PS after gastric ESD was low (1.2 %) in a Western center but it was 9.7 % if pyloric involvement. Endoscopic balloon dilation and corticosteroids were effective for management. PS only occurred in large superficial gastric neoplasms directly involving the pylorus leaving a mucosal defect >75 %. Prophylactic manners, like oral corticosteroids, may be justifiable in these cases.

eP523 ENDOSCOPIC SLEEVE GASTROPLASTY IN OBESE PATIENTS NOT ELEGIBLE FOR ORGAN TRANSPLANTATION

Authors Matteo M.V.^{1,2}, Bove V.^{1,2}, Pontecorvi V.^{1,2}, De Siena M.^{1,2}, Carlino G.^{1,2}, Antonini N.^{1,2}, Massari C.^{1,2}, Giannetti G.^{1,2}, Costamagna G.^{1,2}, Boskoski I.^{1,2}

Institutes 1 Università Cattolica del Sacro Cuore, Center for Endoscopic Research Therapeutics and Training (CERTT), Rome, Italy; 2 Policlinico A. Gemelli IRCCS, Rome, Italy

DOI 10.1055/s-0042-1745376

Aims Class II or class III obesity (BMI ≥ 35 kg/m²) is a contraindication to liver and kidney transplant because of the negative impact on transplant outcomes. Endoscopic sleeve gastropasty (ESG) is a transoral bariatric procedure that may represent a minimally invasive therapeutic chance for obese organ candidates who have an excessive risk for bariatric surgery (BS). In this case series, we evaluate the role ESG in improving transplant candidacy in two candidates for liver and kidney transplant with obesity.

Methods After a multidisciplinary evaluation, two obese candidates for liver and kidney transplant, excluded from the transplant waiting list due to a BMI ≥ 35 kg/m², were scheduled for ESG. They were excluded from BS because of comorbidities and high risk of complication. Patients were provided with a multidisciplinary follow-up at 1 month and then every 3 months, including medical, nutritional and psychological visits.

Results Patients' characteristics and weight loss outcomes are reported in Table 1. No serious adverse events occurred. Both patients achieved a BMI lower than 35 kg/m² within 6 months after ESG and had a significant improvement in comorbidities allowing them to withdraw specific therapy. Both patients were inserted in transplant waiting list at 7 months after the procedure and received organ transplant within 12 months after ESG.

► Table 1 Patients' characteristics.

	Comorbidities	BMI at baseline	Scheduled for	ESG Outcomes
Patient 1 Male, 42 years	Membranous glomerulonephritis, chronic renal insufficiency, arterial hypertension, hypercholesterolaemia.	36.1 Kg/m ²	Kidney transplant	At 6 months: TBWL 17.5 % BMI 29.7 Kg/m ²
Patient 2 Male, 59 years	NASH with liver cirrhosis and HCC, arterial hypertension, type II diabetes, Obstructive sleep apnea in therapy with CPAP.	38.1 Kg/m ²	Liver transplant	At 6 months: TBWL 19.9 % BMI 30.5 Kg/m ²

BMI: body mass index; CPAP: continuous positive airway pressure; HCC: hepatocellular carcinoma; KTx: kidney transplant; LTx: liver transplant; NASH: non-alcoholic fatty liver disease; TBWL: total body weight loss.

Conclusions Based on our initial experience, ESG combined with a multidisciplinary and personalized lifestyle modification program is an attractive and low risk strategy to achieve insertion of organ transplant candidates in transplant lists.

eP524 FOOD RESIDUE LIMITING VIEWS AT GASTROSCOPY: A REVIEW OF PATIENT CHARACTERISTICS AND MANAGEMENT STRATEGIES

Authors McNally M.¹, Malik K.¹, Shah M.¹, Thoufeeq M.¹

Institute 1 Sheffield Teaching Hospitals, Gastroenterology, Sheffield, United Kingdom

DOI 10.1055/s-0042-1745377

Aims The aim of this study was to review the frequency of food residue limiting views at gastroscopy, assess associated patient characteristics, and identify management strategies to reduce food stasis in high-risk patients.

Methods This was a retrospective observational study using data collected through the electronic reporting system at a large tertiary centre. All gastroscopies performed over 1 year were reviewed. Gastroscopies limited by food stasis were identified, and patient characteristics including age, co-morbidities, prokinetic use, opioid use, and post-surgical status were reviewed. Rates of repeat gastroscopies and strategies adopted for repeat procedures were reviewed.

Results 8756 gastroscopies were recorded. Food stasis limiting views was documented in 118 procedures. The mean age of patients was 59 years (range 16-79), 53% were male, 47% of patients (n = 56) were scoped on a morning list, while the remainder were spread across the afternoon, evening, and emergency lists. 25% of these patients (n = 30) were diabetic, 3 of whom had type 1 diabetes, and 14% (n = 16) had a diagnosis of chronic liver disease. 37% (n = 44) were taking opioid medication and 13% (n = 15) were prescribed tricyclic antidepressants. Prolonged fasting advice was given to patients who required a repeat procedure (n = 54). Food residue was reported in only 4% of repeat gastroscopies.

Conclusions This study demonstrates that diabetics, co-morbid patients, and patients on opioids and tricyclic anti-depressants are potentially high-risk for food residue at gastroscopy and consideration should be given to prolonged fasting in selected patients. Further studies are required to assess the role of prokinetics in these patients.

eP525 GASTROENTEROANASTOMOSIS UNDER ENDOSCOPIC ULTRASOUND GUIDANCE USING METAL LUMEN APPOSING STENT (HOT-AXIOS): SINGLE-CENTER EXPERIENCE

Authors Montero Moretón Á.M.¹, Santos Santamarta F.¹, González de Castro E.¹, Aguilar Argeñal L.F.¹, Robles de la Osa D.¹, Moreira da Silva B.A.¹, Cimavilla Román M.¹, Curieses Luengo M.¹, Maestro Antolín S.¹, Rancel Medina F.¹, Santos Fernández J.¹, Pérez Citores L.¹, Barcenilla Laguna J.¹, Pérez Millán A.G.¹

Institute 1 Complejo Asistencial Universitario de Palencia, Gastroenterology, Palencia, Spain

DOI 10.1055/s-0042-1745378

Aims Gastrointestinal tract obstruction has classically only been able to be solved by surgical techniques. Recent advances in endoscopic ultrasound and the appearance of metallic luminal apposition stents (LAS) have demonstrate an alternative for the treatment of obstructions at the level of the antrum and duodenum being their indication mainly palliative. The present study tries to be one more confirmation of the safety and effectiveness of the technique.

Methods Retrospective, descriptive, observational study of patients who underwent gastroenteroanastomosis through placement of LAS (Hot-AXIOS) by endoscopic ultrasound in a second-level hospital. Sedation with propofol is controlled by endoscopist and the technique consist on introducing a guide through the stenosis with a 20mm Cook Fogarty balloon that allows slow proximal injection of indigo carmine solution to favor its localization. Using this technique, a dilation of the target loop is generated between stenosis and Fogarty-balloon without needing a double balloon. Subsequently a LAS is placed according to the usual technique.

Results Endoscopic ultrasound-guided gastroenteroanastomosis with LAS was performed to 5 patients, being 80% men with mean age of 72.2 ± 14.97 years. Indication was stenosis secondary to pancreatic cancer in 60% of the cases, 20% to gastric neoplasia and ampuloma, respectively. In 100% of the cases, placement was performed from the gastric body with a 15x10mm Hot-Axios LAS. The technical success was 100%.

Conclusions Endoscopic gastroenteroanastomosis is a novel technique that represents a breakthrough of great clinical interest in patients with gastrointestinal obstruction, having created easy-to-apply devices and proving to be a safe and effective technique.

eP526 ENDOSCOPY VERSUS SURGERY IN THE TREATMENT OF EARLY GASTRIC CANCER: A SYSTEMATIC REVIEW AND META-ANALYSIS

Authors Moraes Bestetti A.¹, Silvino do Monte Junior E.², Mendonça Proença I.², Ribeiro Jordão Sasso J.G.², So Taa Kum A.², Turiani Hourneaux de Moura D.², Marques Bernardo V.², Guimarães Hourneaux de Moura E.²

Institutes 1 Hospital das Clínicas da Faculdade de Medicina da Universidade de São Paulo – HC/FMUSP, Gastrointestinal Endoscopy Unit, Sao Paulo, Brazil; 2 Hospital das Clínicas da Faculdade de Medicina da Universidade de São Paulo – HC/FMUSP, Gastrointestinal Endoscopy Unit, São Paulo, Brazil
DOI 10.1055/s-0042-1745379

Aims Endoscopic resection (ER) is the preferred approach to treat early gastric cancer (EGC) in patients that meet the resection criteria. Surgery is a more aggressive treatment, but it may be associated with less recurrence and need for reintervention.

Methods We searched PubMed and EMBASE through September 2021 to identify studies evaluating ER vs surgery for EGC. ROBINS-I was used to assess the quality of enrolled studies. The outcomes were extracted and pooled for analyses by REVMAN 5.4. GRADE was used to assess the quality of evidence.

Results Totally 29 studies involving 20559 patients were included. The ER was associated with lower incidence of adverse events (RD = -0.07, 95%CI = -0.1, -0.04, P < 0.0001) and shorter length of hospital stay (95% CI -5.89, -5.32; P < 0.00001). However, ER was associated with higher recurrence of gastric cancer (RD = 0.07, 95%CI = 0.06; P < 0.00001) and lower complete resection rates (RD = -0.1, 95%CI = -0.15, -0.06; P < 0.00001). There were no significant differences between surgery and ER in 5-year overall survival (OS) (RD = -0.01, 95%CI = -0.04, 0.02; P = 0.38), 5-year cancer specific survival (CSS) (RD = 0.01, 95%CI = 0.00, 0.02; P < 0.17), and incidence of serious adverse events (RD = -0.03, 95%CI = -0.08, 0.01; P = 0.13).

Conclusions ER can be considered safe and effective, providing few complications and faster recovery. However, ER is associated with higher risk of recurrence and lower complete resection rates, without compromising OS and CSS.

eP527V INTRAGASTRIC BAND MIGRATION: AN UNCOMMON COMPLICATION

Authors Muñoz González R.¹, Ezquerro Durán A.¹, Resina Sierra E.¹, Gómez Labrador C.¹, Prieto Aparicio J.F.¹, Fernández Velado E.¹, Mendoza Jiménez-Ridruero J.¹, Casanova González M.J.¹, Santander C.¹, Rojo Aldama E.¹

Institute 1 Hospital Universitario La Princesa, Gastroenterology Department, Madrid, Spain

DOI 10.1055/s-0042-1745380

Laparoscopic adjustable gastric banding (LAGB) is a method of bariatric surgery with potential severe complications. A 41-year-old woman who underwent LAGB in 2009 presented with oral intolerance. An esophagogastroduodenoscopy showed a fibrotic stricture in the upper gastric body that was only overcome with a pediatric scope and the gastric band free in the antrum. In order to remove it, a partially covered metal stent was placed to dilate the stricture and two weeks later, an attempt was made to cut the band with SB knife, endoscopic scissors and polypectomy loop, without success. Finally, the patient required surgery for band removal.

eP528 INTRAGASTRIC BOTULINUM TOXIN-RELATED LARGE GASTRIC PHYTOBEZOAR REMOVED ENDOSCOPICALLY

Authors Khan M.U.¹, Mushtaq K.¹, Al-Ejji K.¹, Yakoob R.¹

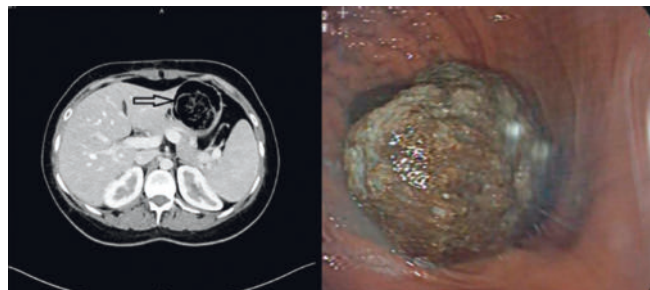
Institute 1 Hamad Medical Corporation, Gastroenterology, Doha, Qatar
DOI 10.1055/s-0042-1745381

Aims Endoscopic intra-Gastric botulinum toxin is one of the weight loss procedures with variable results. It may result in transient gastroparesis. Gastroparesis is a risk factor for bezoar formation. We present one of the first cases of gastric phytobezoar formation likely due to intragastric botulinum toxin injection-related transient gastroparesis.

Methods A 34-year-old female with a history of endoscopic intragastric botulinum injection done abroad for weight loss presented 4 months after the procedure with early satiety and epigastric pain and nausea for 4 weeks and had no psychiatric illness. Gastroscopy showed food material and the procedure

was aborted and re-scheduled with prolonged fasting. Next gastroscopy showed well-organized food material occupying most of the gastric body consistent with gastric phytobezoar. No obstruction or gastric erosion was seen. CT abdomen was performed which showed mottled globular structure in stomach 4 x 6 x 8 cm in dimensions (arrow in the Figure 1) consistent with gastric phytobezoar without any complications and no other phytobezoar in GI tract was seen.

Results Oral Coca-Cola was used for a few days to attempt dissolution however later endoscopy did not show any significant effect on the size of the phytobezoar. The cold snare was used to cut the bezoar into pieces and was retrieved. Endoscopic removal was performed while the patient was intubated and with an over-tube to prevent aspiration. After two sessions a few days apart, the subsequent endoscopy showed the complete passage of the gastric bezoar.



► Fig. 1

Conclusions Intra-gastric Botulinum toxin is associated with phytobezoar formation which can be managed endoscopically.

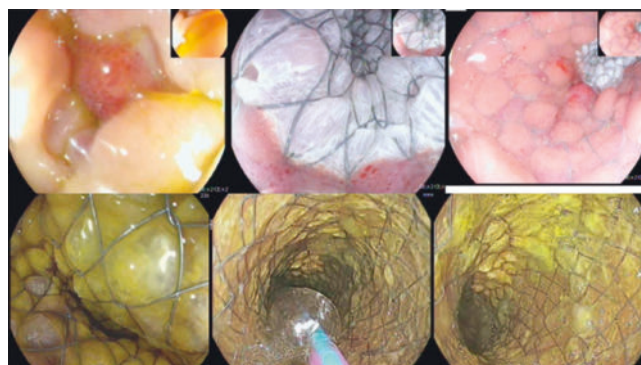
eP529 RECURRENT METASTATIC UROTHELIAL CANCER PRESENTING WITH DUODENAL OBSTRUCTION MANAGED SUCCESSFULLY WITH ENDOSCOPIC STENTING AND STENT DILATATION

Authors Mushtaq K.¹, Khan M.U.¹, Hassan M.A.¹, Abdelmola A.¹, Yakoob R.¹
Institute 1 Hamad Medical Corporation, Gastroenterology, Doha, Qatar
 DOI 10.1055/s-0042-1745382

Aims Urothelial cancers can rarely metastasize to the duodenum and can present with duodenal obstruction as the main presentation. Duodenal obstruction due to urothelial cancer can be managed either by surgery or luminal stenting. We present a case where the duodenal obstruction was managed successfully by endoscopic luminal stenting.

Methods 60 year patient with a history of urothelial cancer in remission. Patient has received the BCG vaccine as part of therapy and was recently diagnosed to have BCG vaccine-related genitourinary tuberculosis. He presented with persistent vomiting for more than 2 weeks. After initial workup didn't reveal obviously caused gastroscopy was performed which showed features of gastric outlet obstruction with duodenal stenosis at third part. Biopsies proved recurrence of urothelial cancer with metastasis to the duodenum.

Results The patient underwent luminal stenting under fluoroscopic guidance with a partially covered stent 12 cm by 20 mm in length and diameter respectively. No immediate complications were noted, however, the patient did not have significant symptomatic improvement. Repeat gastroscopy showed narrowing across the stent due to compression of the tumor. Balloon CRE dilatation was done 6, 7, and up to 8mm. The patient had subsequent significant symptomatic improvement, follow-up gastroscopy showed patent stent, and no further dilatation was required. The patient started palliative systemic chemotherapy. At four months follow up he was having a well-functioning stent.



► Fig. 1

Conclusions Duodenal obstruction from extraintestinal tumors such as urothelial cancer can be managed successfully by endoscopic stenting. The stent may require balloon dilatation if not fully expanded due to tumor compression.

eP530 ENDOSCOPIC SLEEVE GASTROPLASTY VERSUS INTRAGASTRIC BALLOON INSERTION AS A BRIDGE-TO SURGERY PROCEDURE FOR (SUPER)OBESE AND HIGH-RISK PATIENTS – A CASE MIXED STUDY

Authors Gröhl K.¹, Prinz F.¹, Ebigo A.¹, Schnoy E.¹, Messmann H.¹, Goelder S.K.², Nagl S.¹

Institutes 1 University Hospital Augsburg, Gastroenterology, Augsburg, Germany; 2 Ostalb Klinikum, Aalen, Germany
 DOI 10.1055/s-0042-1745383

Aims Bariatric surgery is the most successful treatment for obesity. In some cases bariatric surgery cannot be performed as a single-step approach due to high operative risk factors such as high BMI or severe comorbidities. Endoscopic sleeve gastropasty (ESG) and intragastric balloon (IGB) placement have been shown to be safe and effective minimally invasive endoscopic procedures to induce weight loss. We performed a case mixed study to compare the efficacy, durability, and safety of ESG versus IGB as a bridge to surgery (BTS) procedure for superobese patients.

Methods We retrospectively reviewed patients with high BMI [50-80 kg/m²] or severe comorbidities undergoing ESG or IGB as a BTS procedure between 2017 and 2021. ESG was performed using Endomina. Fluid-filled IGBs implanted for a 6-months duration were used. Outcomes included technical success, procedure time and adverse events. Absolute weight loss (Δ Weight, kg), change in body mass index (Δ BMI, kg/m²), total body weight loss (TBWL, %) and excess weight loss (EWL, %) were calculated at 6 months.

Results A total of 8 patients underwent ESG and 15 underwent IGB insertion. The IGB cohort showed a significantly lower baseline BMI than the ESG cohort (57.2 (\pm 7.8) kg/m² vs. 67.0 (\pm 9.0) kg/m²; P = 0.034). IGB insertion was performed significantly faster (28.5 (\pm 9.0) min vs. 128.3 (\pm 22.0) min; P < 0.01). Adverse events did not differ. At 6 months mean Δ BMI and %TBWL were significantly higher for the ESG group (10.9 (\pm 1.8) kg/m² vs. 5.6 (\pm 4.4) kg/m²; P = 0.027 and 17.6 (\pm 3.9) % vs. 9.2 (\pm 7.3) %; P = 0.02, respectively).

Conclusions ESG and IGB are both safe and effective BTS procedures for superobese and high-risk patients. ESG results in more significant weight loss and requires only one intervention.

eP532 GASTRIC NEUROENDOCRINE TUMORS AND BIERMER'S ANEMIA: WHAT MANAGEMENT?

Authors Nkurunziza L.¹, El Bacha H.¹, Bouibaouen B.¹, Gharbi T.¹, Benzoubeir N.¹, Errabih I.¹

Institute 1 Mohammed V University/Ibn Sina University Hospital Centre, Department of Hepato-Gastro-Enterology and Proctology "Médecine B", Rabat, Morocco

DOI 10.1055/s-0042-1745385

Aims Gastric neuroendocrine tumors (GNT) are largely dominated by tumors derived from histamine-secreting enterochromaffin-like (ECL) cells located in the fundic mucosa. The majority of ECL cell tumours occur in the context of Biermer's disease.

The aim of our work is to evaluate the clinical, endoscopic, histological and therapeutic management features.

Methods A descriptive monocentric retrospective study performed from January 2015 to January 2021 including all patients with GNT associated with Biermer's anemia. All patients underwent gastroscopy, biological tests and CT-scan for other localization.

Results 5 patients were included, the average age was 45 [36-63]. The sex ratio M/F was 1.5. Gastroscopy was indicated for anemic syndrome (4patients), melena (2patients), and epigastralgia (1patient). Upper echo-endoscopy was performed in 4 patients and showed heterogeneous polypoid lesions in the mucosa and/or submucosa with respect to the gastric muscularis. Anatomical pathological examination concluded to a GNT grade 1 with micronodular hyperplasia of the ECL in a context of autoimmune gastritis of Biermer type in all patients. The biological tests showed a collapsed vitamin B12 with positive anti-parietal and antiintrinsic factor antibodies. Thoraco-abdominal-pelvic CT-scan did not reveal any secondary location. The therapeutic management consisted of vitamin B12 substitution in all patients associated with mucosectomy (1patient), simple surveillance (2patients) and surgical resection (2patients).

Conclusions GNT are often associated with atrophic fundal gastritis and Biermer's disease. Gastroscopy coupled with pathological examination are the key diagnostic tests. Surgical indications are very rare. Endoscopic treatment of type 1 tumours larger than 1 cm is necessary and usually sufficient.

eP533 UPPER GASTROINTESTINAL BLEEDING: A PROSPECTIVE EPIDEMIOLOGICAL STUDY OF 72 CASES

Authors Nkurunziza L.¹, El Bacha H.¹, Mechhor S.¹, Gharbi T.¹, Benzoubeir N.¹, Errabih I.¹

Institute 1 Mohammed V University/Ibn Sina University Hospital Centre, Department of Hepato-Gastro-Enterology and Proctology "Médecine B", Rabat, Morocco

DOI 10.1055/s-0042-1745386

Aims Upper gastrointestinal bleeding (UGIB) is a common medical condition that results in substantial morbidity and mortality.

The objective of this work is to study the epidemiological profile of UGIB in our department.

Methods A prospective descriptive study including patients admitted for UGIB from January to December 2020. All patients underwent upper endoscopy. We collected epidemiological, etiologies and endoscopic data.

Results The study included 72 patients with UGIB, 31 males (43.1%) and 41 females (56.9%), sex ratio (F/M) = 1.2. The age distribution and patient's medical history were:

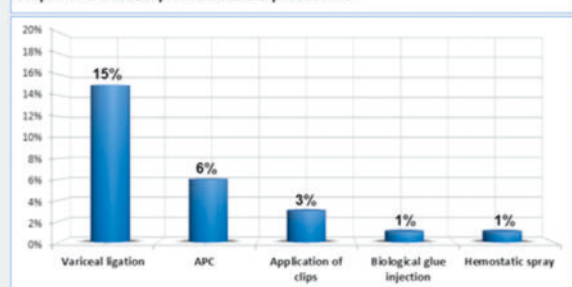
► Table 1

Age distribution	The mean age was 56.5 ± 6.8	<40 years: 19.4 %	40-60 years: 23.6 %	>60 years : 56.9 %
Patient's medical history	Portal hypertension : 13.7 %	Antiplatelet therapy : 13.7 %	Anticoagulants therapy : 11 %	Known gastrointestinal ulcer: 4 %

17 patients (23.28%) presented with hematemesis, 25 patients (34.24%) presented hematemesis and melena, 29 patients (39.72%) presented melena and 8 patients (10.95%) presented rectal bleeding.

The average time to perform gastroscopy was 36.97 h ± 8.9. The main diagnoses were bleeding on esophageal varices in 13 patients (17%), gastrointestinal ulcer in 23 patients (31.5%), gastric tumor process in 4 patients (5%), gastric angiodysplasias and peptic esophagitis in 5 patients each (6.8%) and normal gastroscopy in 12 patients (16%). Endoscopic hemostasis was performed by variceal ligation in 11 patients (15%), APC (6%), application of clips (3%), biological glue injection and hemostatic spray (1%).

Graph: The endoscopic hemostasis procedures



► Fig. 1

Conclusions The majority of UGIB occurred in patients over 60 years of age in our series. Upper endoscopy is the key examination and is the main step for diagnostic and therapeutic purposes. The most common etiologies are ulcer disease and portal hypertension-related bleeding. Specific management varies according to the causative lesion and prognosis has been improved by rapid and effective management.

eP534 NIVOLUMAB-INDUCED ACUTE NEUTROPHILIC GASTRITIS: CASE REPORT IN A TERTIARY HOSPITAL

Authors Ojeda Gómez A.¹, Jiménez García N.¹, Iñigo Chaves A.M.¹, Brotons Brotons A.¹, Pamies Ramon M.I.², Rodríguez Paya P.², Barragán Martínez J.¹, García Soria A.¹, Saez Fuster J.¹, García Sepulcre M.F.¹, Sola-Vera Sánchez J.¹

Institutes 1 Hospital General universitario de Elche, Digestive Care, Elche, Spain; 2 Hospital General universitario de Elche, Oncology, Elche, Spain

DOI 10.1055/s-0042-1745387

Aims Immune-check-point blockade agents are extendedly used in the oncology field. Lower tract gastrointestinal toxicity is more frequent for anti-CTLA-4 than for anti-PD-L1, the target of Nivolumab. The immune-mediated gastritis or the esophagitis remain sporadic adverse events. However, two cases of acute pangastritis have been reported in six months in our center.

Methods We carried out a retrospective and descriptive study. We reviewed the clinical history of patients who received Nivolumab for any indication from January 2017 to December 2021.

Results 2 of the 100 patients treated with Nivolumab started with intense epigastric pain after its 9th dose. Their characteristics are summarized in Table 1. Preferential ODG were performed, showing an intense inflammation with extensive ulceration throughout the stomach. Pathological analysis revealed epithelial neutrophilic infiltration, cellular apoptosis and crypt microabscesses, all related to Nivolumab drug-induced pangastritis. No form of *Helicobacter Pylori* was identified. Double-dose of proton-pump inhibitor and cessation of immunotherapy was established, becoming the first patient rapidly asymptomatic. The second patient remained hospitalized with IV corticosteroids, achieving her complete recovery.

► Table 1

	Patient 1	Patient 2
Age	47	64
Sex	Male	Female
Tumor and stage	Stage III skin melanoma surgically removed	Stage IV choroidal melanoma stage IV surgically removed
Previous immune-related adverse events or history of autoimmune disease	No	No

Conclusions Nivolumab is used in metastatic, locally advanced or recurrent malignant diseases. It leads to the activation of the cytotoxic immune response against tumour cells. Immune-mediated gastritis can appear several months after its beginning but also after its discontinuation. The differential diagnosis must exclude infectious gastritis, vasculitis, Crohn's disease or Behçet syndrome. *H. Pylori* infection can worsen its course. Medical approach is based on the immunotherapy cessation, gastric acid suppression and corticosteroids in severe cases. Infliximab has been successfully used in refractory patients.

eP535 EVALUATION OF PREMALIGNANT GASTRIC CONDITIONS IN *HELICOBACTER PYLORI* RELATED CHRONIC GASTRITIS: DEFINITION OF TIMING

Author Panarese A.^{1,2}

Institutes 1 Central Hospital, Taranto, Italy; 2 Taranto University, Taranto, Italy

DOI 10.1055/s-0042-1745388

Aims *Helicobacter pylori* (HP) infection is commonly responsible for premalignant gastric conditions (PGC) -atrophic gastritis, intestinal metaplasia and dysplasia – and malignant gastric lesions (MGL). High-Resolution White Light Endoscopy (HR-WLE) in combination with Blue Laser Imaging (BLI) – Linked color imaging (LCI) is effective in detecting PGC.

Methods Thirty-three consecutive cases of HP related chronic gastritis were retrospectively examined for PGC and MGL by HR-WLE and BLI-LCI before eradication therapy (n = 33) and two months (n = 28) and six months (n = 23) after eradication therapy. The Endoscopic Grading of Gastric Intestinal Metaplasia (EGGIM) classification, on the endoscopic side, and the Operative-Link on Gastritis-Assessment (OLGA) and the Operative-Link on Gastric-Intestinal Metaplasia (OLGIM) classifications, on the histological side, were taken into account. Gastroscopy was performed by endoscopists not particularly experienced in virtual chromoendoscopy.

Results After HP eradication, the assessed endoscopic and/or histological stage changed in 81 % of the cases at two months and in 91 % at six months. MALT hyperplasia improved in 90 % at six months. Confounding elements (red-

ness, erosion and surface variations) were significantly reduced at two months ($p < 0.001$) and gastric lesions were distinctly visible at six months ($p = 0.05$).

Conclusions HP eradication is important for the correct endoscopic (EGGIM stage) and histological (OLGA/OLGIM stage) evaluation of HP-related chronic gastritis when gastroscopy with HR – WLE and BLI-LCI is performed by endoscopists not particularly experienced in virtual chromoendoscopy.

eP536V MULTIMODAL APPROACH IN ONE SESSION FOR MULTIPLE GASTRIC NEOPLASTIC LESIONS

Authors Pecere S.¹, Barbaro F.¹, Papparella L.G.², Ciuffini C.¹, Petruzzello L.¹, Costamagna G.¹

Institutes 1 Digestive Endoscopy Unit, Fondazione Policlinico Universitario A. Gemelli IRCCS, Rome, Italy; 2 Digestive Endoscopy Unit, Fondazione Policlinico Universitario A. Gemelli IRCCS, Roma, Italy

DOI 10.1055/s-0042-1745389

We present a multimodal approach in one session for multiple gastric lesions in a 76-year-old patient. He underwent a gastroscopy with diagnosis of four gastric lesions: one at gastric angulus (IIa-IIc) of 30 mm, one in the antrum involving the pyloric canal (0-IIa) of 25 mm and two sessile lesions (0-Is according to Paris) of 12 mm at posterior wall and great curvature. It was scheduled double ESD for larger lesions and double cap-EMR for minor lesions. Patient was discharged after 48 hours without complications. Histology was respectively: well differentiated EGC, TV adenoma with HGD and two TV adenoma with LGD.

eP537 VANEK'S TUMOR AS A RARE CAUSE OF DYSPEPTIC SYMPTOMS IN A WOMAN WITH PRIMARY BILIARY CHOLANGITIS: A CASE REPORT

Authors Pellegrino R.¹, Panarese I.², De Gennaro N.¹, Ciamarra P.¹, Priadko K.¹, Granata L.¹, Palladino G.¹, Scidà G.¹, Facchiano A.¹, Franco R.², Romano M.¹, Gravina A.G.¹

Institutes 1 University of Campania "Luigi Vanvitelli", Precision Medicine, Naples, Italy; 2 University of Campania "Luigi Vanvitelli", Mental and Physical Health and Preventive Medicine, Naples, Italy

DOI 10.1055/s-0042-1745390

Aims Vanek's Tumor is a rare mesenchymal gastrointestinal tumor. Different locations have been described and it is generally considered a benign lesion and characterized as a solitary/submucosal polypoid/nodular lesion. It's characterized by a hypocellular population, generally consisting of spindle-like cells, with soft ovoid nuclei, with little eosinophilic cytoplasm. We present a case of Vanek's Tumor.

Methods We presented a case of a 67-year-old patient with unclear dyspeptic syndrome and a history of primitive biliary cholangitis, non-bloody uterine fibroids as well as arthrosis of the right knee, and undergoing esophagogastroduodenoscopy because of dyspepsia unresponsive to symptomatic therapy. Family history was silent for gastrointestinal pathologies. A mild epigastric pain was the only clinical evidence.

Results Esophagogastroduodenoscopy showed a sessile mucosal formation at gastric angulus (diameter 10 millimeters). Random biopsies were taken from antrum, angulus and gastric body and targeted biopsies on the polypoid lesion were also taken because at Narrow Band Imaging examination it had no peculiar characteristics. On histology, we found gastric body-fundus type mucosa with moderate and quiescent chronic inflammation. One of the gastric body fragments showed elongated and branched foveola with focal cystic glandular dilatation (gastric hyperplastic polyp). Then polypectomy was performed which allowed to observe low cell density submucosa proliferation, consisting of spindle cells, with bland nuclei, irregularly arranged and immersed in an edematous-lax stroma, with numerous inflammatory elements including several eosinophils. An abundant vascular network was associated. CD34 +, S100-, CD117-, ALK (d5f3 clone)- was found at immunohistochemistry.

Conclusions We were able to reach diagnosis of Vanek's tumor of the stomach.

eP538V HYBRID SUBMUCOSAL ENDOSCOPIC EXCAVATION FOR A GASTRIC GIST IN A PATIENT WITH A VOLUMINOUS ABDOMINAL WALL HERNIA – KILLING TWO FLIES WITH ONE BLOW

Authors [Pereira Correia F.¹](#), [Pinto B.¹](#), [Cardoso M.¹](#), [Branco J.C.¹](#), [Carvalho Lourenço L.¹](#), [Martins A.¹](#)

Institute 1 Hospital Prof. Dr. Fernando Fonseca, Amadora, Portugal

DOI 10.1055/s-0042-1745391

A 60-years-old male followed by General Surgery for irreducible voluminous incisional hernia. He had a history of gastric polypoid lesion not fully characterized, so an upper GI endoscopy were requested prior to hernia surgical repair. Upper GI endoscopy and endoscopic ultrasound led to diagnostic GIST. The endoscopic resection (Endoscopic Submucosal Excavation) was performed in the same surgical procedure for abdominal hernia repair. The surgery team contributed to strengthening the closure of the post-resection defect, although there was no free perforation. Endoscopic submucosal excavation (ESE) has been shown to be a safe and effective option in the endoscopic resection of GISTs.

eP539 ENDOSCOPIC SUBMUCOSAL DISSECTION IN A WESTERN NON-ACADEMIC CENTRE – INITIAL EXPERIENCE

Authors [Pereira Correia F.¹](#), [Bordalo Ferreira F.¹](#), [Cardoso M.¹](#), [Carvalho Lourenço L.¹](#), [Martins A.¹](#)

Institute 1 Hospital Prof. Dr. Fernando Fonseca, Amadora, Portugal

DOI 10.1055/s-0042-1745392

Aims Endoscopic submucosal dissection (ESD) is a technique developed in East Asia that allows the resection of histologically advanced epithelial lesions. In the last years, in the Western World, experience in this procedure has been increasing, with several published studies showing good results. Our aim is to show the results of ESD carried out in a non-academic centre in a western country.

Methods Single-centre retrospective study of patients undergoing endoscopic submucosal dissection of stomach and rectum lesions. Between March 2019 and October 2021, 33 ESD were performed. We present data regarding the location, histology of the removed lesion, histological complete resection rate (R0) and rate of complications.

Results Of the 33 removed lesions, 23 were gastric lesions and 10 rectal lesions. 3 (13 %) of the gastric lesions were early gastric cancer, while 4 (40 %) of rectal lesions were early cancers. The complete histological resection rate (R0) was 87 % in gastric lesions and 90 % in rectal lesions. All lesions with adenocarcinoma histology were R0 resections. Regarding immediate or late complications, there were 4 complications (two bleedings, one perforation and one coagulation syndrome), all of them treated endoscopically or conservatively, without the need for surgical interventions or without mortality associated.

Conclusions Our results are in agreement with several recently published studies and show a great potential and promising future of ESD in the treatment of histologically advanced epithelial lesions of the stomach and rectum.

eP540 ENDOSCOPIC RESECTION OF GASTRODUODENAL SUBEPITHELIAL TUMORS: INITIAL EXPERIENCE

Authors [Puig González M.¹](#), [Colan-Hernandez J.¹](#), [Marín I.¹](#), [Caballero N.¹](#), [Iborra I.¹](#), [Calm A.¹](#), [Fortuny M.¹](#), [Garso E.¹](#), [Clavell A.¹](#), [Viciano M.¹](#), [Domenech E.¹](#), [Moreno V.¹](#), [Uchima H.¹](#)

Institute 1 Hospital Germans Trias i Pujol, Badalona, Spain

DOI 10.1055/s-0042-1745393

Aims Describe the initial experience of our center in endoscopic resection of gastric and duodenum subepithelial lesions

Methods Descriptive retrospective study.

We included all resections of gastroduodenal subepithelial tumors performed in our center from October 2020 to May 2021. Demographic, clinical, endoscopic and anatomopathological data were collected.

Results In total, 6 endoscopic resections were performed.

The average age was 70 years, 50 % of them were men. 33.3 % had anti-aggregation medication, 0 % with anticoagulation. 16,7 % have a gastric surgery (billroth I).

The subepithelial lesions characteristics and the type of resection are summarized in Table 1.

About the resections: 83,3 % were bloc resection and 100 % with complete macroscopic resection (100 % technical success).

The final histology was GIST (4), ectopic pancreas (1), and tissue without alterations (1).

There were no complications, no hemorrhage neither perforation.

► **Table 1**

Subepithelial lesions characteristics	
Localization:	
– Gastric body	2
– Antrum	3
– Duodenum	2
Size mm (media)	16mm
Extraluminal growth	1 (16,6 %)
Dependent layer by echoendoscopy or CT:	
– Muscular propia	5
– Submucosa	1
Type of resection	
– Banding	2
– Submucosa dissection	2
– STER	1
– EFTR-NOTES	1

Conclusions Endoscopic resection appears to be an effective and safe procedure for the management of subepithelial tumors < 3 cm.

eP541 BALLOON DILATOR MANAGEMENT OF BURIED BUMPER SYNDROME

Authors [Ramis Estelrich M.D.¹](#), [Fernández García J.¹](#), [Bartrolí Alabau B.²](#), [Khorrami Minaei S.¹](#), [García Amengual I.M.¹](#), [Garrido Duran C.¹](#)

Institutes 1 Hospital Universitari Son Espases, Endoscopy Unit, Palma,

Spain; 2 Hospital Universitari Girona Doctor Josep Trueta, Endoscopy Unit.

Gastroenterology Department, Girona, Spain

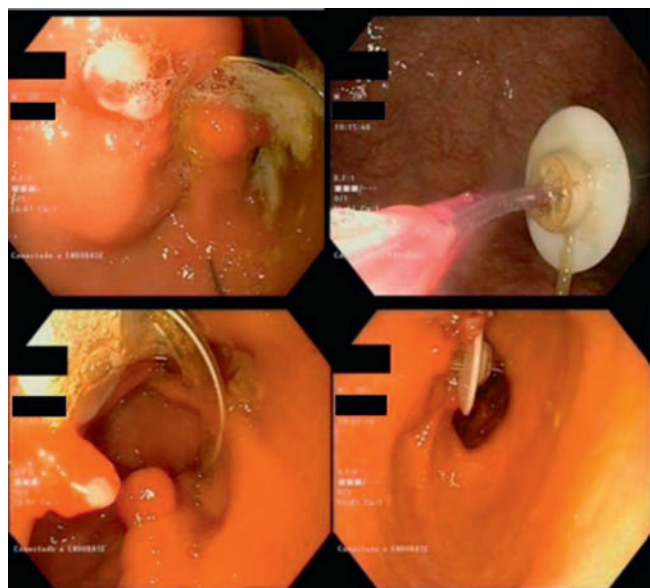
DOI 10.1055/s-0042-1745394

Aims Buried bumper syndrome is a rare complication of percutaneous endoscopic gastrostomy (PEG). The internal bumper migrates through the stomach wall, which hampers the tube function and blocks its removal.

A great number of endoscopic techniques and devices have been described for its management. The most commonly used is the “Push-pull T” technique which aims to dislodge the internal bumper by the use of a Savary dilator.

We present the case of a 70-year-old man with advanced Parkinson's disease, undergoing treatment with levodopa-carbidopa administered through a gastrojejunostomy device endoscopically set. The patient attended the programmed replacement of the PEG tube 6 months later. Esophagogastroduodenoscopy showed mucosal overgrowth surrounding the internal bumper, embedding it into the gastric wall.

Methods Through the feeding port of the PEG tube an ERCP guidewire is introduced into the gastric lumen. Using a polypectomy snare, the guidewire is trapped and then pulled out through the channel of the scope. An 8 mm TTS balloon dilator is inserted through the guidewire into the internal bumper. Right after, the balloon is inflated, dilating the tract of the gastrostomy above the buried bumper and fixing the PEG tube over the inflated balloon. Finally, the internal bumper is cautiously pushed back into the gastric lumen and removed using a polypectomy snare.



► Fig. 1

Conclusions We propose the use of a balloon dilator as an alternative method in selected cases for the treatment of buried bumper syndrome.

eP542V ENDOSCOPIC SUBMUCOSAL DISSECTION OF A SOLITARY GASTRIC PLASMOCYTOMA: 'THIRD SPACE ODDITY'

Authors [Rasschaert G.](#)¹, [Gkolfakis P.](#)^{1,2}, [Eisendrath P.](#)^{3,2}, [Verset L.](#)⁴, [Devèire J.](#)², [Lemmers A.](#)²

Institutes 1 CUB Institut Jules Bordet, Université Libre de Bruxelles, Gastroenterology and Digestive Oncology department, Brussels, Belgium; 2 CUB Hôpital Erasme, Université Libre de Bruxelles, Gastroenterology, Hepatopancreatology and Digestive Oncology Department, Brussels, Belgium; 3 CHU Saint-Pierre, Université Libre de Bruxelles, Gastroenterology and Hepatology department, Brussels, Belgium; 4 CUB Institut Jules Bordet, Université Libre de Bruxelles, Pathology department, Brussels, Belgium
DOI 10.1055/s-0042-1745395

A 35-year-old woman underwent esophagogastroduodenoscopy for progressive epigastralgia. A 10mm subepithelial antral lesion contained plasmocytoma tissue. Diagnostic work up was negative apart from a gastric focus on PET. Endoscopic evaluation after radiotherapy, suggested a non-responding lesion. Endosonography observed a homogenous, hypoechoic, submucosal mass. Conventional ESD was performed, taking 1cm lateral margins, dissecting alongside the muscular layer. En bloc resection (60x40mm) was obtained. Pathology confirmed a submucosal plasmocytoma. Margins were free. Evaluation at six months showed ESD scarring in an asymptomatic patient, follow up was proposed. ESD can serve as treatment for digestive plasmocytoma, beyond the scope of its established indications.

eP543V CURATIVE ESD OF A LARGE GASTRIC MALT-LYMPHOMA

Authors [Rivero-Sánchez L.](#)^{1,2}, [Van Den Neste E.](#)³, [Dano H.](#)⁴, [Deprez P.H.](#)¹

Institutes 1 Cliniques universitaires Saint-Luc, Université catholique de Louvain, Hepato-gastroenterology Department, Brussels, Belgium; 2 Hospital Clínic de Barcelona, Universitat de Barcelona, Gastroenterology Department, Barcelona, Spain; 3 Cliniques universitaires Saint-Luc, Université catholique de Louvain, Hematology Department, Brussels, Belgium; 4 Cliniques universitaires Saint-Luc, Université catholique de Louvain, Pathology Department, Brussels, Belgium
DOI 10.1055/s-0042-1745396

A 65-year-old male was diagnosed with *Helicobacter pylori*-negative gastric mucosal-associated lymphoid tissue (MALT)-lymphoma, measuring 46mm with a protruding shape and subepithelial appearance in the corpus-fundus junction. EUS showed mucosal involvement without parietal extension. After treatment with antibiotics and Rituximab, no endoscopic/histological response was observed at 12-month follow-up. After treatment option discussions in a multi-disciplinary meeting, an en-bloc endoscopic submucosal dissection (ESD) was performed without complications. Histopathology revealed free deep and lateral margins. Follow-up at 6 and 12 months showed no endoscopic/histological recurrence. This report provides further support of ESD as a minimally invasive second-line treatment of MALT-lymphoma in selected patients.

eP544 CHARACTERISTICS AND FEATURES OF UPPER GASTRO INTESTINAL BLEEDING IN PATIENTS ON ANTITHROMBOTIC DRUGS: A PROSPECTIVE STUDY

Authors [Rokhsi S.](#)¹, [Addajou T.](#)¹, [Mrabti S.](#)¹, [Sair A.](#)¹, [Touibi A.](#)¹, [Benhamdane A.](#)¹, [Berrida R.](#)¹, [El koti I.](#)¹, [Rouibaa F.](#)¹, [Benkirane A.](#)¹, [Seddik H.](#)¹

Institute 1 Mohammed V Military Hospital, Rabat, Morocco
DOI 10.1055/s-0042-1745397

Aims The aim of our study is to evaluate the effect of AT use on endoscopic outcomes in patients admitted for UGIB.

Methods This is a prospective monocentric cross-sectional study of 332 patients conducted between June 2020 and August 2021.

We considered as users of AT drugs all patients on antiplatelet agents (low-dose aspirin, thienopyrimidines) and/or anticoagulants (vitamin K antagonists, direct-acting anticoagulants, heparin).

Demographic, clinical, endoscopic and therapeutic data was collected, and analysed in a database on the SPSS version 22.0 program.

Results The average age was 59 +/- 16.7 years. Our series was characterised by a clear male predominance of 77.1 %.

63 patients (19%) were taking AT drugs (41 antiplatelet, 39 anticoagulant). The two groups differed in age (68 vs 57; p<0.001), comorbidities (75.8 % vs 16.7 %; p<0.001), however there was no statistically significant difference in active bleeding at endoscopy (12.7 % vs 16.8 %; p=0.425), and the need for endoscopic haemostasis (7.9 % vs 16 %; p=0.1).

In multivariate analysis and adjusting for age, sex, comorbidities, presence of active bleeding and use of antithrombotics, only the presence of active bleeding could predict the need for endoscopic haemostasis. Indeed, the presence of active bleeding at the time of endoscopy multiplies by 26 the risk of recourse to endoscopic haemostasis (OR: 26, CI: 12.9-62.15, p<0.001), whereas the use of AT drugs does not influence the need for endoscopic haemostasis (OR: 0.386, CI: 0.105- 1.42, p=0.154).

Conclusions Older patients using AT admitted for UGIB do not appear to have an increased risk of active bleeding at endoscopy or needing endoscopic haemostasis.

eP545 TWO-STAGED APPROACH FOR MANAGEMENT OF A COMPLEX INTRA-THORACIC ESOPHAGO-GASTRIC ANASTOMOTIC DEHISCENCE

Authors Serrazina J.¹, Damião F.¹, Noronha Ferreira C.¹, Moura M.¹, Matos H.², Braga T.², Freire J.P.², Carrilho-Ribeiro L.^{1,3}, Tato Marinho R.^{1,3}

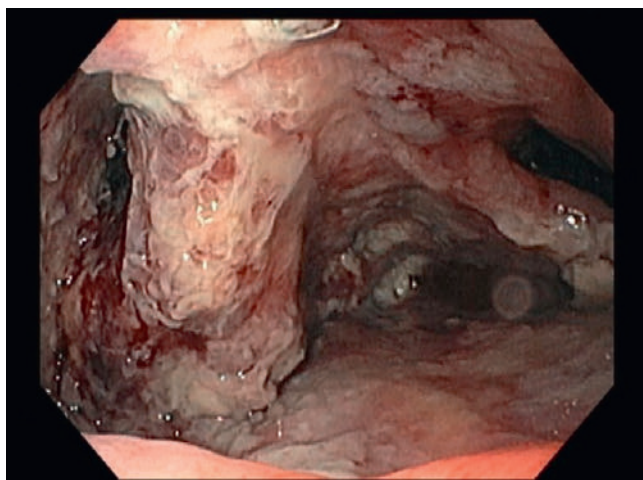
Institutes 1 Hospital Santa Maria, Centro Hospitalar Lisboa Norte, Gastroenterology and Hepatology, Lisbon, Portugal; 2 Hospital Santa Maria, Centro Hospitalar Lisboa Norte, General Surgery, Lisbon, Portugal; 3 Faculdade de Medicina da Universidade de Lisboa, Clínica Universitária de Gastroenterologia, Lisbon, Portugal

DOI 10.1055/s-0042-1745398

Aims Intra-thoracic anastomotic dehiscence after esophagectomy is a life-threatening complication. Interventional endoscopy plays a key role in managing such adverse events with lower morbidity.

Methods

Case report A 73-year-old female underwent Ivor Lewis esophagectomy for an adenocarcinoma of esophagogastric junction (yPT1aN0). Ten days later, she developed sepsis. Thoracic CT-scan revealed a posterior dehiscence of the intra-thoracic esophagogastric anastomosis and right hydropneumothorax. Broad spectrum antibiotics were initiated. Emergent esophagogastroscope revealed a 20mm dehiscence of the gastroesophageal anastomosis involving 50% of the circumference with a local abscess adjacent to it. Internal drainage with three 10Fr 5cm plastic double-pigtail stents was performed followed by right thoracic drainage. The patient improved and twelve days later, endoscopy was repeated. The plastic stents were removed, and endoscopy confirmed the extensive dehiscence of the esophagogastric anastomosis communicating with two cavities measuring 6x3cm and 4x2cm in the mediastinum, filled with necrotic tissue. After endoscopic debridement and lavage of the cavities with saline solution, a partially covered metallic stent (Hanarostent[®] 20/26 x 100mm) was placed along with a naso-enteric feeding tube. The patient improved and antibiotics were stopped 2 weeks later. The stent was removed 2 months later. The dehiscence had completely closed due to healing by second-intention. She remains well after 9 months of follow-up.



► Fig. 1

Conclusions This case highlights the usefulness of a two-staged sequential approach in the management of upper digestive anastomotic dehiscence.

eP546 NON-INVASIVE MARKERS PREDICTIVE OF PORTAL HYPERTENSIVE GASTROPATHY IN CIRRHOTIC PATIENTS

Authors Tababi R.¹, Mrabet S.¹, Hassine A.¹, Harbi R.¹, Akkari I.¹, Hassine A.¹, Ben Jazia E.¹

Institute 1 Farhat Hached University Hospital, Gastroenterology, Sousse, Tunisia

DOI 10.1055/s-0042-1745399

Aims Portal hypertensive gastropathy (PHG) is a portal hypertension manifestation which diagnosis relies on upper gastrointestinal endoscopy (UGE). In this study we aimed to evaluate the effectiveness of non-invasive indicators in predicting PHG.

Methods In this single-centre retrospective study, we included all admitted cirrhotic patients between 2008 and 2021. We collected biological and imaging parameters. PHG severity was assessed according to the grading of New Italian Endoscopic Club (NIEC). We also calculated the following scores: FIB-4, APRI, King-score, Lok-score, Liaoning-score, Fibrosis-index, AST/ALT ratio and Platelet/Spleen diameter.

Results We included 200 patients of mean age 56.9 years ± 15 years and 56% female. PHG was found in 71% of cases. Mild gastropathy was observed in 41, moderate in 71 and severe in 31 patients. Laboratory and sonographic findings were not correlated to PHG, notably platelet count ($p=0.56$), leukocyte count ($p=0.50$), haemoglobin ($p=0.95$), serum-sodium ($p=0.95$), serum-albumin ($p=0.69$), serum-creatinine ($p=0.40$), transaminases ($p=0.55, 0.36$), total-bilirubin ($p=0.72$), INR ($p=0.85$), spleen diameter ($p=0.57$) and portal vein diameter ($p=0.10$). Similarly, we found no association between non-invasive scores and PHG when comparing the gastropathy-group to baseline: FIB-4 (7.9-6.8, $p=0.21$), APRI (2.3-1.8, $p=0.12$), King-score (85.4-67.4, $p=0.08$), Lok-score (0.92-0.90, $p=0.45$), Liaoning-score (0.9 - (-0.2), $p=0.08$), fibrosis-index (4.4-4.3, $p=0.74$), AST/ALT (1.8-2.1, $p=0.44$), Platelet/Spleen diameter (793.3-783.1, $p=0.92$). However, in subgroup analysis, unlike the other scores, Liaoning-score was checked as significantly associated with severe PHG (severe PHG: 0.36 vs non-severe PHG: (-0.62), $p=0.04$).

Conclusions In our study, the performance of non-invasive markers was mediocre in predicting PHG presence. Liaoning-score nevertheless was associated with gastropathy severity.

eP547 PHLEGMONOUS GASTRITIS: CASE REPORT AND LITERATURE REVIEW

Authors Tarasenko L.¹, Polishchuk S.¹, Dombrovsky Y.¹

Institute 1 Olymed, Kyiv, Ukraine

DOI 10.1055/s-0042-1745400

Aims We present a case of phlegmonous gastritis (PG).

Methods Female, 50 y.o. admitted on the 12th day from symptoms onset with suspected gastric cancer. Upon presentation she had no complaints but a history of abdominal pain, nausea, diarrhea, subfebrile temperature for 3 days which subsided with ceftriaxone prescribed for suspected gastroenteritis. Medical history is significant for arthrosis and COVID-19. She is taking aspirin and NSAIDs. Physical examination revealed mild epigastric tenderness without guarding, Bp – 150/90 mm Hg, heart rate – 78 bpm, body temperature – 37,2°C, CRP – 47,9 mg/l, Leu – 18,5 g/L, ESR – 37 mm/h. Test for syphilis was negative. She was treated with levofloxacin and metronidazole, discharged on day 15.

Results In 2013 a review of 45 PG cases was published. We performed a PubMed search from 2013 through 09.2021 and found 45 case reports of phlegmonous gastritis, published in English (ours included).

Among 45 patients 27 (60%) were treated conservatively, 18 (40%) – operatively. The most common preexisting condition for PG was diabetes – 10(22%) and neoplasia – 10(22%), no risk factors were found in 8(18%) cases. Succumbed to the disease 6 patients resulting in mortality rate of 13,3%. PG is

usually caused by a bacterial infection, the most common pathogen found in gastric content was *Streptococcus* – in 18 (40%), in particular *Streptococcus pyogenes* – 11 (24%), in 9 (20%) more than one infectious agent was discovered.

Conclusions Exact pathogen was not identified, but clinical course, endoscopic and morphological findings are consistent with phlegmonous gastritis.

eP548V HYPERNEFROMA GASTRIC METASTASIS: RESECTION BY “LOOP-AND-LET-GO” TECHNIQUE

Authors Vazquez Gomez D.¹, Torres Vicente G.¹, Zaragoza Velasco N.¹, Puñal Vidal L.², Pijoan Comas E.², Miguel Salas M.I.¹, Torres Monclús M.N.¹, Bayas Pástor D.C.¹, Reñé Espinet J.M.¹, Gonzalez-Huix Lladó F.²

Institutes 1 Arnau de Vilanova University Hospital, Lleida, Spain;

2 CLINICA GIRONA, Girona, Spain

DOI 10.1055/s-0042-1745401

A 63-year-old man with previous left partial nephrectomy due to hypernephroma in 2017. A CT scan in 2021 shows a polyp on gastric body. Gastroscopy revealed a 4 cm polypoid mass, friable, with a wide and short pedicle, on greater curvature.

We decided to place an endoloop in order to leaving it abandoned causing strangulation of the tissue (“Loop-and-let-go”), biopsies were taken confirming hypernephroma metastasis. Four days after we check the lesion had detached, were taken new biopsies: now negative for malignant cells. An echoendoscopy was also performed without observing parietal thickening, lymphadenopathy nor lesions in neighboring organs.

eP549 EFFICACY OF A NOVEL PEPTIDE HAEMOSTATIC GEL IN PREVENTION OF BLEEDING POST ENDOSCOPIC RESECTION OF LARGE DUODENAL ADENOMAS

Authors Woolley M.¹, Subhaharan D.¹, Bassan M.², Hwang J.³, Huang J.³, John S.¹

Institutes 1 Gold Coast University Hospital, Gold Coast, Australia;

2 Liverpool Hospital, Sydney, Australia; 3 Royal Brisbane and Women's Hospital, Brisbane, Australia

DOI 10.1055/s-0042-1745402

Aims Post procedural bleeding (PPB) after endoscopic mucosal resection (EMR) of duodenal lesions is significant and can occur in 5-25 % of patients. Several factors affect this including lesion location, type of resection, lesion size and comorbidities. Endoscopic removal of ampullary lesions or large lesions (> 10 mm) have high risk of delayed bleeding. We aimed to assess the efficacy of a novel self-assembling peptide matrix gel in preventing PPB after resection of large duodenal adenomas.

Methods We analysed the data of a retrospective cohort of patients who underwent endoscopic resections of duodenal adenomas > 10mm from three tertiary Australian hospitals between September 2019 and November 2021. Use of the peptide matrix gel was identified along with lesion size, histology, location and mode of resection. PPB, within 30 days post resection, was identified through electronic records.

Results 17 patients were identified; 12 underwent duodenal EMR and 5 papillectomies. 6 lesions were > 20mm. One patient had PPB requiring further management (5.8%). None of the patients who underwent ampullary resections had post procedural bleeding.

Conclusions The novel peptide matrix gel is technically easy to use and has been reported to be highly effective in the stomach and colon. Data is limited on its use in the duodenum where the risk of PPB is high. Our experience in a small cohort suggests it has significant benefit in duodenal endoscopic resections including the ampulla. Further prospective studies are required to fully establish its role and benefit in the duodenum.

eP550 APPLICATION OF MACHINE LEARNING ALGORITHM BASED ON MULTI-FEATURE FITTING IN THE DIAGNOSIS OF WHITISH NEOPLASTIC GASTRIC LESIONS UNDER WHITE LIGHT GASTROSCOPY

Authors Zeng X.¹, Dong Z.¹, Gong D.¹, Jin P.², Yang L.², Yu H.¹

Institutes 1 Renmin Hospital of Wuhan University, Department of Gastroenterology, Wuhan, China; 2 PLA Army General Hospital, Department of Gastroenterology, Beijing, China

DOI 10.1055/s-0042-1745403

Aims To develop machine-learning based multi-feature fitting algorithm to diagnose whitish neoplastic gastric lesions under white light endoscopy and enhance interpretability. Compare the diagnostic performance of the algorithms with the sole deep learning algorithm.

Methods Retrospectively collected 210 non-neoplastic images from Renmin Hospital of Wuhan University, the Seventh Medical Center of PLA General Hospital, and Nanjing Drum Tower Hospital from November 2012 to December 2020, of which 170 were used as training set, the remaining 40 images were used as test set; 207 neoplastic images were collected, of which 165 pictures are used as training set, and the remaining 42 images are used as test set. The general shape of the lesion, whether the boundary is clear or not, whether the surface shape is regular, the background mucosa, and the location of the lesion are selected as key features. The key features of each image was labeled by expert endoscopists. Multiple machine learning models were applied for training and testing. Use deep learning framework to train binary classification model to distinguish whether the lesion was neoplastic or not.

Results In the test set, the accuracy, sensitivity and specificity of the sole deep learning algorithm were 81.96 %, 71.43 % and 92.5 %, respectively. The accuracy, sensitivity, and specificity of KNN(K-Nearest Neighbor) algorithm were 86.9 %, 90.7 % and 82.93 %, respectively; the accuracy, sensitivity and specificity of SVM(support vector machine) algorithm were 84.52-85.71 %, 88.37-90.70 % and 78.05-82.93 % respectively.

Conclusions Multi-feature fitting machine learning performed better than the sole deep learning algorithm for diagnosing whitish neoplastic gastric lesions under white light endoscopy.

eP551V ACUTE IATROGENIC GASTRIC PERFORATION DURING EUS FOR DISTAL MALIGNANT BILIARY OBSTRUCTION: SAME-SESSION INTRA-OPERATIVE OVER-THE-SCOPE-CLIP CLOSURE, DUODENAL STENTING AND EUS-GUIDED DRAINAGE WITH LUMEN APPOSING METAL STENT

Authors Di Mitri R.¹, Amata M.¹, Mocciano F.¹, Conte E.¹, Bonaccorso A.¹, Scrivo B.¹, Calì A.¹, Scimeca D.¹

Institute 1 ARNAS Civico – Di Cristina – Benfratelli Hospital, Gastroenterology and Digestive Endoscopy, Palermo, Italy

DOI 10.1055/s-0042-1745404

A 72-year-old woman with pancreatic head's mass and dilated bile ducts was scheduled for tissue acquisition and biliary drainage. EUS was performed with linear echoendoscope (GF-UCT140; Olympus) with CO₂ insufflation. During the advancing maneuvers of the echoendoscope to reach the duodenum, we detected a full-thickness 14-mm defect of gastric angulus with direct access into the peritoneum. An over-the-scope clip (OTSC 14/6t, Ovesco-Germany) was immediately deployed closing the iatrogenic perforation and allowing to complete the procedure with EUS-FNB of the lesion, duodenal uncovered self-expandable metal stent placement for neoplastic infiltration of duodenal bulb and EUS-guided choledoco-duodenostomy with 10 × 20-mm Hot-Spaxus (Taewoong).

eP552 RISK FACTORS FOR NON-CURATIVE ENDOSCOPIC RESECTION OF EARLY GASTRIC CANCER

Authors Uchima H.^{1,2}, Libânio D.³, Ortigão R.³, Carrasco M.³, Afonso L.P.³, Pimentel-Nunes P.³, Dinis-Ribeiro M.³

Institutes 1 Hospital Universitario Germans Trias i Pujol, Gastroenterology, Badalona, Spain; 2 Teknon Medical Center, Gastrointestinal Endoscopy, Barcelona, Spain; 3 Instituto Português de Oncologia do Porto, Porto, Portugal, Gastroenterology Department, Porto, Portugal

DOI 10.1055/s-0042-1745405

Aims Early gastric cancer (EGC) is defined as adenocarcinoma that invades no more deeply than the submucosa irrespective of lymph node metastasis (LNM). In selected cases of EGC with very low risk of LNM endoscopic submucosal dissection (ESD) can be curative. However, in 20 % of cases there are pathological features other than the standard and expanded criteria that may lead to non-curative resection (NCR).

Aims To identify the pre-treatment risk factors for NCR curability that may improve selecting cases for ESD.

Methods Single center retrospective cohort of consecutive patients with EGC that underwent ESD (2005 – 2020). Collected data was compared between 2 groups: curative vs NCR with risk of LNM. Univariate and multivariate analysis was performed.

Results 668 lesions underwent ESD for EGC, of which 82 (12 %) presented NCR with risk of LNM and 586 lesions were assigned to the Curative group.

Mean age, %male sex, %en bloc ESD and mean size were 66.9, 57.3 %, 97.1 % and 18.95mm in the Curative Group and 68.5, 72 %, 93.9 %, 27.29mm in the NCR Group. The identified risk factors were related to location, size, presence of ulceration, histology on previous endoscopic biopsies and morphology of the lesion (Table, multivariate).

Male sex was associated with NCR on univariate but not on multivariate analysis.

► Table 1

	Non-curative	Curative	P value	Adjusted OR (95 % CI)
Location	13(13.5 %)	83(86.5 %)	0.189	1.74(0.76-3.40)
Upper third	42(18.1 %)	190(81.9 %)	0.007	2.33(1.26-4.31)
Middle	27(7.9 %)	313(92.1 %)		1
Lower				
Size				
0-20mm	29(6.3 %)	429(93.7 %)		1
21-30mm	36(24.3 %)	112(75.7 %)	0.001	2.69(1.48-4.89)
> = 31mm	17(27.4 %)	45(72.6 %)	<0.001	4.60(2.14-9.85)
Ulceration				
Present	14(37.8 %)	23(62.2 %)	0.018	2.80(1.19-6.55)
Absent	67(11.9 %)	494(88.1 %)		1
Previous Histology				
LGD	5(2.0 %)	251(98.0 %)		1
HGD	29(12.1 %)	210(87.9 %)	<0.001	6.12(2.24-16.70)
Carcinoma	47(32.4 %)	98(67.6 %)	<0.001	14.99(5.50-40.84)
Morphology				
Depressed	53(17.0 %)	258(83.0 %)	0.049	1.99(1.00-3.95)
Protruded	13(18.1 %)	59(81.9 %)	0.042	2.53(1.03-6.19)
Flat	16(5.7 %)	267(94.3 %)		1

Conclusions Middle gastric location, size > 20mm, presence of ulceration, HGD or Carcinoma in endoscopic biopsies on previous biopsies and protruded or depressed morphology are risk factors for NCR.

eP553 THREE-DIMENSIONAL (3D) ENDOSCOPIC SLEEVE GASTROPLASTY: SINGLE CENTER CASE SERIES

Authors Afonso M.¹, Soares R.², Ramos R.¹, Balkestahl J.¹, Andrade E.¹, Machado L.¹

Institutes 1 Gastroclinic, Bariatric Unit, Lisbon, Portugal; 2 Gastroclinic, Nutrition Unit, Lisbon, Portugal

DOI 10.1055/s-0042-1745406

Aims To evaluate the use 3D endoscopic visualization system to perform endoscopic sleeve gastropasty

Methods Patients consecutively operated from September to November 2021 with a 3D-HD endoscopic visualization system (MDTK MonoStereo; Taiwan) were prospectively collected. Patients' demographic data, preoperative anthropometrics data; operative time, number of sutures made, intraoperative and postoperative complications, and follow-up data were prospectively recorded and retrospectively reviewed. Additionally, a questionnaire was completed by the endoscopist evaluating the subjective impression of visualization and handling

Results Seven patients (age 27 to 52 years old, 3 male) underwent endoscopic sleeve gastropasty using 3D-HD endoscopic visualization system. Mean preoperative body mass index was 33kg/m², mean operative time was 52 minutes with a mean of 5 sutures (4-7) used. No 30-day complications were reported and patients lost 8 % total body weight loss after 1 month. The endoscopist reported better visualization, better depth perception and no nausea with the 3D visualization system.

Conclusions 3D-HD endoscopic visualization system seems to provide potential advantages in endoscopic sleeve gastropasty. This initial experience is promising but must be confirmed by larger series.

eP554 FEASIBILITY OF IMPLEMENTING THE USE OF REGULAR ARRANGEMENT OF COLLECTING VENULES IN DAILY ENDOSCOPY PRACTICE WITHOUT PRIOR TRAINING: RESULTS FROM A PROSPECTIVE OBSERVATIONAL STUDY

Authors Rasschaert G.¹, Vandermeulen L.¹, Schils M.¹

Institute 1 Universitair Ziekenhuis Brussel, Gastroenterology and Hepatology department, Brussels, Belgium

DOI 10.1055/s-0042-1745407

Aims Identification of regular arrangement of collecting venules (RAC) has been proposed an accurate tool for detection of Helicobacter pylori (Hp) negative patients. Its use is not implemented widespread in daily endoscopy practice. Although suggested easy to apply, a potential barrier is the supposed necessity of training for this type of optical diagnosis. Can the concept of RAC be implemented in daily practice without prior training?

Methods Presence of star-like venules in the lesser gastric curvature is considered RAC+. Absence or irregularity is determined RAC-. Data from all esophagogastroduodenoscopies with biopsies for Hp screening was collected prospectively for six months. High-definition endoscopes without magnification were used. Three operators with different level of endoscopy experience (two, three and ten years) participated. Hp status was confirmed by gastric biopsy. Pathologists were blinded to RAC status.

Results From May through October 2021 we included 132 patients. Prevalence of Hp infection was 37.1 %. RAC- was associated with Hp infection in 64.8 % (46/71) of cases. In contrast, 58 out of 61 RAC+ patients were Hp negative. With NPV of 95.1 % for the exclusion of Hp infection. Of all 49 Hp positive patients, 46 displayed a negative RAC pattern, correlating with a high sensitivity (93.9 %). There was variation between operators, without outliers.

Conclusions RAC+ can accurately identify patients without Hp infection. Our data suggests training in RAC might be redundant. Implementation by untrained operators seems feasible as the global performance in our study matched data from previous literature. Our findings need to be confirmed in a larger group of operators.

eP555 THE ROLE OF THE ENDOSCOPIC DOPPLER PROBE IN NON VARICEAL UPPER GASTROINTESTINAL BLEEDING: A SYSTEMATIC REVIEW AND META-ANALYSIS

Authors Chapelle N.¹, Martel M.², Bardou M.³, Almadi M.⁴, Barkun A.⁵

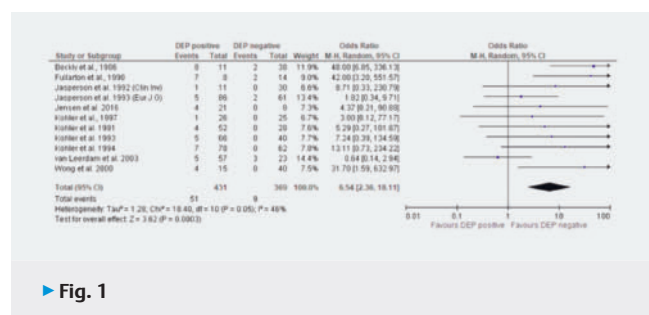
Institutes 1 University Hospital of Nantes, Department of Gastroenterology, Nantes, France; 2 McGill University Health Center, Research Institute, Montreal, Canada; 3 University Hospital, Dijon, Dijon, France; 4 King Saud University, Riyadh, Saudi Arabia; 5 McGill University Health Center, Department of Gastroenterology, Montreal, Canada

DOI 10.1055/s-0042-1745408

Aims The effectiveness of the Doppler Endoscopic Probe (DEP) inserted through the operating channel in non-variceal upper gastrointestinal bleeding (NVUGIB). We aimed to perform a systematic review characterizing the effectiveness of DEP in patients with NVUGIB.

Methods A literature search until July 2021 using OVID MEDLINE, EMBASE, and ISI Web of Knowledge identified studies addressing DEP in NVUGIB. A series of meta-analyses were performed assessing outcomes amongst observational and intervention studies for DEP signal positive and negative lesions as well as DEP-assisted versus standard endoscopies. The primary outcome was “overall rebleeding”; secondary outcomes included all-cause mortality, bleeding-related mortality, need for surgery, length of stay, ICU stay and angiography.

Results Fourteen studies were included from 1911 citations identified. Observational studies compared bleeding lesions with DEP positive versus DEP negative signals 11 studies, n = 800 pre-hemostasis that includes 5 studies, n = 148 with post-hemostasis data. Three interventional studies (n = 308) compared DEP-assisted to standard endoscopy management. DEP signal positive versus negative lesions both prior to or following any possible hemostasis were at greater risk of overall rebleeding (OR = 6.54; 95%CI 2.36; 18.11, I² = 46% and OR = 25.96; 95%CI 6.74; 100.0, I² = 0% respectively). The use of DEP during endoscopy significantly reduced overall rebleeding rates (OR = 0.27; 95%CI 0.14; 0.54). When removing outcomes analysis for which only one study was available, all evaluable outcomes were improved with DEP characterization of management guidance except for all-cause mortality.



► Fig. 1

Conclusions DEP-related information improves on sole visual determination of the rebleeding risk of a NVUGIB lesion with DEP-guided management resulting in decreased overall rebleeding, bleeding-related mortality and need for surgery.

eP556 SHORT- AND LONG-TERM OUTCOMES OF ENDOSCOPIC SUBMUCOSAL DISSECTION FOR UNDIFFERENTIATED EARLY GASTRIC CANCER: A MULTI-CENTER RETROSPECTIVE COHORT

Authors Papaefthymiou A.¹, Kahaleh M.², Yamamoto K.³, Sferrazza S.⁴, Deprez P.H.⁵, Quang H.⁶, Kiosow O.⁷, Tribonias G.⁸, Patil G.K.⁹, Coumaros D.¹⁰, Mavrogenis G.¹¹

Institutes 1 University Hospital of Larissa, Gastroenterology, Larissa, Greece; 2 Robert Wood Johnson Medical Center, New Brunswick, Department of Gastroenterology, New Jersey, United States; 3 Japan Community Healthcare Organization Osaka Hospital, Osaka-shi, Department of Gastroenterology, Osaka, Japan; 4 Santa Chiara Hospital, Gastroenterology and Endoscopy Unit, Trento, Italy; 5 Université Catholique de Louvain, Cliniques Universitaires St-Luc, Brussels, Belgium; 6 Hangzhou Medical College, Hangzhou, Department of Endoscopy, Zhejiang, China; 7 University Clinic of Zaporizhzhie State Medical University, Department Multifunctional Surgery, Zaporizhzhie, Ukraine; 8 General Hospital of Nikaia – Piraeus “Agios Panteleimon”, Gastroenterology Department, Athens, Greece; 9 Global Hospitals, Baldota Institute of Digestive Sciences, Mumbai, India; 10 Clinique Sainte Barbe, Department of Gastroenterology, Strasbourg, France; 11 Mediterraneo Hospital, Division of Hybrid Interventional Endoscopy, Department of Gastroenterology, Athens, Greece

DOI 10.1055/s-0042-1745409

Aims Undifferentiated early gastric cancer (UD-EGC) represents an extended indication for endoscopic submucosal dissection (ESD). This study evaluated the prevalence of UD-EGC recurrence after ESD, and potentially implicated risk factors.

Methods Data from 9 centers were collected retrospectively including demographics, endoscopic and pathological findings during follow-up, in UD-EGC cases treated by ESD. Patients with incomplete resection or advanced disease were excluded. Descriptive statistics quantified variables and calculated the incidence of recurrence. Chi-square test was applied to assess any link between independent variables and relapse; significantly associated variables were inserted to a multivariable regression model.

Results 51 patients were eligible, with 1.5:1 female to male ratio and age of 64 (± 10) years. Mean lesion size was 38.9 (± 18.8)mm and the most frequent histological subtype was signet-cells UGC (64.7%). In 71.9% of cases, there were histology indicative of UD-EGC and negative imaging for advanced disease before ESD. Patients were followed-up every 3-6 months with a mean surveillance period of about 26 months. Three patients (9.4%) developed local recurrence 9 (± 7.9) months after dissection, without distal metastases. Recurrence was associated with history of H.pylori infection, and poorly differentiated adenocarcinoma, submucosal, perineural and (lympho-)vascular invasion (p < 0.05 per variable) but not with lesion size or other endoscopic findings. In regression analysis, perineural invasion preserved a significant association with relapses (p = 0.006).

Conclusions ESD could be considered as the initial step to manage UD-EGC, providing an “entire-lesion” biopsy. Moreover, when histology confirms absence of deep, vascular and perineural invasion, this modality could be therapeutic, providing low recurrence rates.

eP557 STEPPING IT UP: PHYSICAL INACTIVITY IS ASSOCIATED WITH CAPSULE ENDOSCOPY PROLONGED GASTRIC TRANSIT TIME

Authors Macedo Silva V.^{1, 2, 3}, Lima Capela T.^{1, 2, 3}, Freitas M.^{1, 2, 3}, Arieira C.^{1, 2, 3}, Xavier S.^{1, 2, 3}, Boal Carvalho P.^{1, 2, 3}, Rosa B.^{1, 2, 3}, Moreira M.J.^{1, 2, 3}, Cotter J.^{1, 2, 3}

Institutes 1 Hospital Senhora da Oliveira, Gastroenterology Department, Guimarães, Portugal; 2 School of Medicine, University of Minho, Life and

Health Sciences Research Institute (ICVS), Braga, Portugal; 3 ICVS/3B's, PT Government Associate Laboratory, Braga / Guimarães, Portugal
DOI 10.1055/s-0042-1745410

Aims Physical activity (PA) has been proposed as a potential influence of capsule endoscopy (CE) passage from the stomach to the duodenum. Nonetheless, no studies have confirmed this association. We aimed to prospectively assess the effect of PA in the first hour of CE in the occurrence of prolonged gastric transit time (PGTT).

Methods Prospective study including consecutive patients undergoing CE. For each patient, a step-counter was attached to the CE register. The number of steps during the first hour of CE was registered. The collected outcomes were PGTT (CE in stomach > 1h) and rate of complete procedures. Possible confounders (age, gender, smoking habits, IBD, thyroid disease, diabetes mellitus, prokinetics/antidepressants usage) were assessed.

Results We included 101 patients, 72 (71.3 %) females, with a mean age of 52.8 ± 19.2 years. The mean number of steps in the first hour was significantly lower in patients with PGTT (2009 ± 1578 vs 3551 ± 1915 steps; $p < 0.001$), and also in patients in whom CE was incomplete (1571 ± 802 vs 3374 ± 2025 steps; $p = 0.033$). In a multivariate analysis including significant confounders, the number of steps were still an independent predictor of PGTT ($p = 0.005$), but not of complete examinations ($p = 0.389$). Single-handedly, the number of steps taken in the first hour had a good acuity upon predicting PGTT (AUC = 0.74; $p < 0.001$), with an optimal cut-off of 2000 (sensitivity 81.3 %; specificity 70 %).

Conclusions PA throughout the first hour of CE significantly increased PGTT. Therefore, patients should be instructed to walk as much as possible during CE (ideally > 2000 steps), in order to accelerate the passage to the duodenum.

eP558 EUS-GUIDED GASTROENTEROSTOMY TECHNIQUES FOR PALLIATION OF MALIGNANT GASTRIC OUTLET OBSTRUCTION: A SYSTEMATIC REVIEW AND META-ANALYSIS

Authors Boraschi Vieira Ribas P.H.¹, Mendonça Proença I.¹, Silvino Do Monte Junior E.¹, Lira De Oliveira V.¹, Candido Hemerly M.¹, Yvamoto E.Y.¹, SÁNCHEZ-LUNA S.A.², Marques Bernardo W.¹, Turiani Hourneaux de Moura D.¹, Guimaraes Hourneaux De Moura E.¹

Institutes 1 Hospital das Clínicas, University of São Paulo School of Medicine, Gastroenterology, São Paulo, Brazil; 2 The University of Alabama at Birmingham School of Medicine, Birmingham, United States
DOI 10.1055/s-0042-1745411

Aims Malignant gastric outlet obstruction (GOO) is usually associated with poor prognosis and an important decrease in the quality of life. Ultrasound-guided endoscopic gastroenterostomy (EUS-GE) has emerged as a safe and effective palliation procedure for GOO. We aimed to compare the currently available techniques in this systematic review with meta-analysis.

Methods A comprehensive search of multiple electronic databases was performed to identify all the studies in which EUS-GE was performed in a form of palliation for GOO with emphasis on the used techniques. The outcomes analyzed were: technical and clinical success, total and severe adverse events (AE), procedure duration, and length of hospital stay (LOHS).

Results Fifteen studies (690 patients) were included in the statistical analysis. Patients were divided into a direct puncture (DGE, $n = 496$), balloon-assisted gastroenterostomy (BAGE, $n = 27$), and EUS-guided double-balloon-occluded gastrojejunostomy bypass (EPASS, $n = 67$) subgroups. When DGE was compared to the balloon-assisted techniques (BTGE) we found a statistically significant lower LOHS of 1.7 days (95 % CI 0.012 to 3.578, $I^2 = 59$ %, $p = 0.048$). No statistically significant differences in clinical and technical success, total and severe AE, and procedure duration were found in our analysis between DGE and BTGE. Finally, no statistically significant differences were found when comparing BAGE and EPASS in any of the aforementioned outcomes.

Conclusions EUS-GE is safe and effective treatment for the palliation of GOO. Any of the analyzed techniques may be used to palliate malignant GOO with similar technical and clinical outcomes. DGE was associated with a lower length of hospitalization. Further well-designed randomized clinical studies are warranted to compare the different techniques.

eP559V “GASTRIC METASTASIS, A RARE SITE OF BREAST CANCER METASTASIS”

Authors Abad Izquierdo E.C.¹, Tormo Lanseros B.¹, De Frutos Rosa D.¹, Vazquez Benitez G.T.², Calleja Panero J.L.¹

Institutes 1 Puerta de Hierro University Hospital. IDIPHISA-Segovia Arana Research Institute, Gastroenterology and Hepatology Department, Majadahonda, Spain; 2 Puerta de Hierro University Hospital. IDIPHISA-Segovia Arana Research Institute, Pathological Anatomy Department, Majadahonda, Spain
DOI 10.1055/s-0042-1745412

Breast cancer is the most frequently diagnosed cancer in woman.

63-year-old woman with a history of invasive lobular breast cancer. Bone marrow and bone metastasis were identified. A follow-up PET-CT showed an increase uptake in known bone lesions.

Due to epigastric pain, nausea and hyporexia, a gastroscopy was performed. An atrophic aspect area of 40mm at gastric fundus, with aberrant and large blood vessels on the surface was observed. Biopsies were taken.

The gastric lesion was diagnosed as metastatic disease from breast cancer, confirmed by immunohistochemistry.

Breast cancer with gastric metastases is rare. Clinical symptoms and endoscopic findings are nonspecific.

eP560 CLINICAL APPROACH TO GASTRIC ANTRAL VASCULAR ECTASIA (GAVE) IN THE CZECH REPUBLIC

Authors Kroupa R.¹, Dastych M.¹, Tacheci I.², Kunovský L.¹, Šramková M.¹, Cyrany J.², Falt P.³

Institutes 1 University Hospital and Faculty of Medicine, Masaryk University, Department of Internal Medicine and Gastroenterology, Brno, Czech Republic; 2 Charles University, University Hospital Hradec Králové, Department of Internal Medicine and Gastroenterology, Hradec Králové, Czech Republic; 3 Palacky University, University Hospital Olomouc, Department of Gastroenterology and Geriatrics, Olomouc, Czech Republic
DOI 10.1055/s-0042-1745413

Aims The aim of the study was to assess real clinical approach to the patients with GAVE in the Czech Republic, identify differences in the availability of specialized therapeutic methods and estimate the number of patients refractory to endoscopic argon plasma coagulation (APC) and requiring other therapeutic methods.

Methods Web based anonymous questionnaire focused on epidemiology and typical clinical approach to diagnosis and therapy of GAVE among members of Czech Gastroenterological Society.

Results From analysis of 48 responses estimated prevalence of GAVE is 1-2 per 1 000 gastroscopies, in half of patients related to portal hypertension. In two thirds of them, endoscopic therapy is indicated with long term efficacy in about 70 %. Proton pump inhibitors are extensively prescribed and endoscopic therapy with APC is commenced in patients with anemia predominantly. Other drugs or endoscopic techniques are available in 10 % of hospitals only. Common technique of APC procedure includes 3-4 sessions in 4 weeks interval. In failure of initial series of APC, other type of intervention including radiofrequency ablation, band ligation or use of another drugs (e.g. thalidomide) is indicated in one third of patients only. Majority of patients are treated by multiple APC procedures for many months with limited effect only. In 2-3 % of patients, surgical procedure is indicated for the failure of other therapy.

Conclusions Initiation of endoscopic therapy, therapeutic outcomes and use of other methods besides APC are very variable in the Czech Republic. Up to 30 patients annually may benefit from extension of therapeutic modalities beyond APC failure.

eP561 EFFICACY, SAFETY AND CLINICAL OUTCOMES OF ENDOSCOPIC MUCOSAL RESECTION (EMR) AND ENDOSCOPIC SUBMUCOSAL DISSECTION (ESD) IN PATIENTS WITH GASTRIC AND DUODENAL NEUROENDOCRINE TUMORS

Authors Giunta M.¹, Ravizza D.¹, Bravi I.¹, de Roberto G.¹, Soru P.¹, Crosta C.¹, Trovato C.¹, Fiori G.¹

Institute 1 IRCCS European Institute of Oncology, Division of Endoscopy, Milan, Italy

DOI 10.1055/s-0042-1745414

Aims We aim to evaluate efficacy, safety and clinical outcomes of EMR and ESD for gastroduodenal neuroendocrine tumors (gNETs and dNETs).

Methods We retrospectively reviewed consecutive patients with gNETs and dNETs who underwent EMR or ESD, from January 2005 to September 2021.

Results We resected 54 gNETs (49 type I and 5 type III) and 12 dNETs. Fourteen gastric lesions underwent ESD, whereas 40 EMR. In the duodenum 9 ESD and 3 EMR were performed. Median lesion diameter of the gNETs, removed by ESD and by EMR, was 15 and 8 mm respectively, whereas for dNETs was 11 and 10 mm respectively.

En bloc resection was achieved in all procedures. ESD provided R0-resection in 50 % of gNETs and in 55 % of dNETs. EMR reached R0-resection in 95 % of gNETs and in 33 % of dNETs. R1 was always due to focal involvement of the vertical margin. Perforations occurred in 14 % of gNETs ESD, in the 5 % of gNETs EMR and in 33 % of dNETs ESD. All perforations were endoscopically managed except one which required surgery. All NETs were well-differentiated with low and moderate proliferation index. During follow-up (mean of 43 months for gNETs and 30 months for dNETs) we did not observe any recurrence or metastasis.

Conclusions In our experience EMR and ESD provide an excellent en bloc resection rate for gastroduodenal NETs. R0 resection rate of ESD is disappointing because tumors larger than 10 mm are more likely to have a deeper infiltration into the submucosa. However, this seems to not affect the prognosis.

eP562V EFFECTIVE SINGLE-SESSION GREEN LASER HEMOSTASIS OF REFRACTORY BLEEDING FROM GASTRIC ADENOCARCINOMA

Authors Luna-Rodriguez D.¹, Burgueno-Gomez B.¹, Garcia-Alonso J.¹, Chavarria-Herbozo C.¹, Sanchez-Ocana R.¹, de la Serna C.¹, Perez-Miranda M.¹, Busta-Nistal R.¹

Institute 1 Hospital Universitario Rio Hortega, Gastroenterology and Hepatology, Valladolid, Spain

DOI 10.1055/s-0042-1745415

Radiotherapy is used to control bleeding from gastric malignancy, but it's inconvenient for frail patients. Neodymium-YAG ("green") lasers are widely available in Urology. An 89-yo woman with unresectable gastric adenocarcinoma experienced bleeding requiring frequent blood transfusions. Gastroscopy showed large antral ulceration with exposed vessels. Sclerotherapy failed to control bleeding. Patient performance status was otherwise good. A transpyloric duodenal SEMS was placed to treat impending outlet obstruction and a green laser probe was used to ablate visible vessels/bleeding spots within large

ulcerated area. The patient did not experience any subsequent bleeding throughout the 5-months she survived on palliative care.

eP563 PREGNANCY AFTER ESG: ARE ALL EFFORTS THWARTED? A CASE SERIES

Authors Carlino G.¹, Bove V.¹, Pontecorvi V.¹, De Siena M.¹, Matteo M.V.¹, Giannetti G.¹, Massari C.¹, Antonini N.¹, Costamagna G.¹, Boškoski I.¹

Institute 1 Università Cattolica del Sacro Cuore, Rome, Italy

DOI 10.1055/s-0042-1745416

Aims A retrospective analysis of a prospective database was conducted to evaluate weight trajectories and lifestyle modification in women became pregnant after ESG.

Methods Weight indices and the evolution of major obesity-associated morbidities (HBP, H-INS, T2DM and OSAS) and the Bariatric Analysis and Reporting Outcome System (BAROS) questionnaire were analyzed at the beginning, at the end of pregnancy and at the first follow-up visit after the delivery.

Results From May 2017 to October 2021, 228 women underwent ESG and 7 of them (mean age $32,4 \pm 6,9$ years) became pregnant after ESG, with a mean interval of $7,3 \pm 3,8$ months after the procedure.

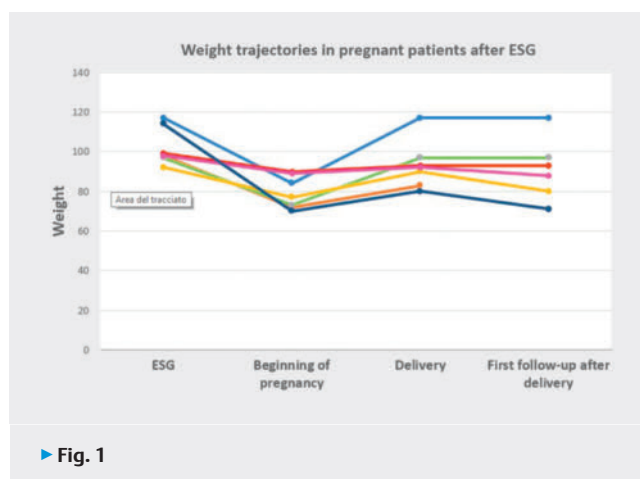
Baseline BMI was $40,5 \pm 6,9$ kg/m². One patient reported H-INS, one T2DM and another one H-INS and HBP.

At the beginning of pregnancy WL, EWL, TBWL and BMI were $22,9 \pm 13,0$ kg, $65,5 \pm 34,8$ %, $21,8 \pm 10,8$ % and $29,8 \pm 4,9$ kg/m², respectively. At the delivery they were $9,0 \pm 12,2$ kg, $26,7 \pm 34,8$ %, $8,5 \pm 10,8$ % and $35,0 \pm 5,7$ kg/m².

BAROS score was $5,2 \pm 2,2$ at the beginning of pregnancy and $3,2 \pm 2,2$ at the delivery.

The patient with H-INS and HBP experienced a resolution of them, the one with H-INS had an improvement before pregnancy, the patient with T2DM had an improvement during the gestation.

Six patients reached the follow-up visit after delivery. WL, EWL, TBWL and BMI were $11,8 \pm 16,1$ kg, $35,1 \pm 45,3$ %, $11,2 \pm 14,0$ and $34,4 \pm 7,1$ kg/m², respectively. The BAROS score was $3,5 \pm 2,7$.



► Fig. 1

Conclusions Lifestyle changes after ESG do not disappear after pregnancy and allow for a gradual weight loss.

Authors' Index

A

- Aabdi B S209
 Abad Izquierdo E S273
 Abad Izquierdo EC S285
 Abbas W S108, S222
 Abdallah T S49
 Abdelghani M S142
 Abdelhafez M S156, S226, S245
 Abdelli MN S251, S256, S257
 Abdelli N S124, S144
 Abdelmola A S276
 Abd El moneim S S206
 Abd El Moniem S S266
 Abdelrahim M S25, S27, S113, S125, S178, S189
 Abdeltawab D S142
 Abdelwahed M S139
 Abdulalleyava E S100
 Aberle J S54
 AbiMansour JP S46
 Abou Ali E S31, S192
 Abou-Elmagd A S108, S210, S222, S257
 AbouSaleh M S48, S255
 Abreu N S74
 Abu-Abed M S115
 Abu-baker F S135
 Abu Baker F S115
 Abu-Elfath A S142
 Abu-Freha N S115
 Achanta CR S35, S209, S258
 Acitores D S78
 Adamou F S227
 Adamsen S S166
 Adán L S154
 Addajou T S116, S117, S131, S133, S141, S144, S174, S201, S203, S208, S212, S237, S242, S263, S280
 Adiou T S117
 Adi RK S260
 Adler DG S99
 Afecto E S33, S43
 Afify S S142, S268
 Afonso J S9, S90, S112, S165, S184
 Afonso JP S69
 Afonso LP S283
 Afonso M S283
 Agazzi S S25
 Aggarwal M S60, S208
 Agiannitopoulos K S137
 Aglan R S268
 Agoune FZ S264
 Agudo B S97, S121, S209
 Agudo Castillo B S81, S243
 Agudo Castillo B S238
 Aguero Garcete G S210
 Aguilar Argeñal LF S258, S275
 Aguilera L S56
 Ahmad O S38, S158
 Ahmad S S210
 Ahmed RM S142
 Ahmed T S264
 Ahmed W S257
 Ahsan N S230
 Aicart M S69
 Ainsworth L S157
 Aird J S120
 Aisp G S217
 Ait Errami A S189, S265
 Ait Mohammed T S142
 Ajana F S221
 Ajana FZ S221, S256
 Ak AB S8, S24, S25, S88
 Akan K S205, S253, S254
 Akarca G S40
 Akbas MM S205
 Akimoto Y S5
 Akizue N S73
 Akkari I S125, S179, S193, S203, S270, S271, S281
 Akram M S264
 Akshintala V S49
 Akyüz F S260
 Al Ahmari M S210
 Alamr A S210
 Al Balkhi A S210
 AlBalkhi M S210
 Albarquoni S S26
 Albeniz Arbizu E S134
 Albéniz-Arbizu E S14
 Albéniz E S7, S88
 Albers D S215
 Albert Carrasco M S20, S168
 Albert J S67
 Albert M S142
 Albillos Martínez A S201
 Alborae M S142
 Albouys J S29, S57, S58, S71, S72, S81, S88, S89, S95
 Albuissou E S23, S137
 Albuquerque AC S111
 Alburquerque M S56, S101, S109
 Alburquerque Miranda M S46, S87, S133, S170, S240
 Alcivar-Vasquez J S78, S89, S100, S114, S166, S172, S173
 Aldegue M S154
 Alderlieste Y S41
 AlEid A S210
 Al-Ejji K S275
 Alfarone L S47, S74, S156
 Algarra A S17, S162
 AlGhamdi A S210
 Ali Afsal S S177
 AlIbrahim B S210
 Alicante S S25
 Ali EA S101
 Alkady MN S142
 Alkandari A S25
 Alkhalaf A S92, S93, S204
 Alkhayyat M S255
 AlKhayyat M S48
 Allehibi A S224
 Al-Lehibi A S210
 Allen C S19, S20, S145, S156
 Alleyne L S176
 Alloro R S134
 Almadi M S284
 Almeida N S244
 Almohalla C S59, S61
 Al-Momani A S255
 Almpani F S198, S262
 Almtawa A S210
 Al-Najami I S52, S104
 Al-Nawas B S173
 Alonso de la Campa J S239
 Alonso-Lázaro N S69, S75
 Alonso M S78
 Alonso-Martín C S59
 Alonso N S78
 Alonso N S194
 Alotaibi N S210
 Alqutub A S210
 AlRajhi S S210
 Alrazim A S120
 Alsuleimani A S210
 Altonbary A S83, S108, S210, S222, S257
 Alustiza M S140
 Alvarado H S78, S89, S100, S172, S173
 Álvarez Arroyo E S69, S116, S261, S262
 Álvarez-Delgado A S14
 Álvarez-González MA S20
 Alvarez Herrero L S93, S204
 Alvaro Martínez-Alcalá A S53, S61
 Alves da Silva JI S95, S106
 Alves S S99, S158, S229
 Alves-Silva J S24
 Alvisi C S25
 Alzamzamy A S142
 Amalou K S142, S210
 Amaro P S175
 Amata M S53, S246, S282
 Amat I S97
 Amato A S11, S25
 Ambrocio W S144
 Ambrosi A S12
 Ambrosini L S25
 Amer H S142
 Amezcua-Hernández V S32
 Amorós-Tenorio A S14
 Amouri A S202
 Amri F S180, S212, S227, S264
 Ancona F S25
 Anderloni A S7, S11, S15, S28, S29, S47, S70, S74, S81, S156, S224, S248
 Anderson J S37, S38, S43, S77, S151
 Andrade AP S165
 Andrade E S283
 Andrade P S9, S90, S112, S184
 Andrasina T S240
 Androutsos N S239
 and Sedation P ERC S46
 Andujar-Murcia X S252
 Andújar X S254
 Angeletti S S252
 Anierte Blasco R S143
 Annibale B S79, S152, S252, S268
 Anni G S265
 An P S32
 Ansari J S7, S62, S101, S225
 Anten M-PG S184
 Antenucci C S73
 Antonelli G S25, S27, S30, S44, S51, S64, S73
 Antonini F S11, S96
 Antonini N S55, S56, S65, S266, S274, S286
 Antonius E S135
 Aouattah T S102
 Aourarh A S117
 Aourarh B S117
 Aouroud H S189, S265
 Aouroud M S265
 Aparicio J S87
 Aparicio JR S97, S155, S226, S235
 Aparicio Tormo JR S69, S85, S86, S116, S261, S262
 Appleyard M S106
 Aragona G S11, S70
 Araujo I S20
 Araujo IK S107
 Araújo R S147, S267
 Archambeaud I S23
 Archavlis E S167, S198, S262
 Archer S S24, S106, S171
 Archibugi L S28, S211, S217
 Arcidiacono P S11, S112
 Arcidiacono PG S11, S28, S70, S73, S114, S211
 Ardito F S71
 Arechederra M S97
 Areia M S99, S158, S229
 Arens C S173
 Areste I S82
 Aresté I S69
 Arevalo-Mora M S12, S87, S89, S100, S114, S166, S172, S173
 Argüello L S75, S194
 Argyriou K S272
 Arieira C S10, S163, S261, S285

- Arlt A S215
 Armstrong PR S116
 Arna D S81, S122, S211, S238
 Arrubla A S69, S82, S83, S102, S214
 Artyushenko M S125
 Arvanitakis M S8, S59, S102, S160
 Arvanitis K S198, S262
 Ashrafian H S44, S46, S171
 Aslam S S25, S27, S125, S189
 Aslam SP S178
 Aslan F S8, S24, S25, S88
 Aspuru Rubio K S20
 Assaf A S31, S192
 Assani S S250
 Assisi D S216
 Astrup Hvattum S S5
 Atmodimedjo PN S245
 Atreya R S16
 Atug O S140
 Augustin T S48
 Auriemma F S101
 Ausania F S107
 Avila MA S97
 Aviles-Jurado FX S110
 Axiaris G S197
 Ayav A S216
 Ayub K S230
 Azouz MM S222
 Azzemouri S S126
 Azzolini F S45, S72, S117, S118
- B**
 Baars J S41
 Baatenburg de Jong RJ S206
 Baatrup G S52, S104
 Bachlitzanakis E S81
 Bachmann J S113
 Badic B S50
 Báez C S255
 Bagepally RS S260
 Baile-Maxia S S42, S140
 Bailey Y S122
 Bajdechi G S253
 Bak A S255
 Baker FAbu S115
 Baker-Moffatt M S178
 Baklouti R S139
 Bakula D S199, S257
 Balaguer F S20
 Balanescu P S35, S182
 Baldaque-Silva F S267
 Balendran K S123
 Balkestahl J S283
 Ballesteros L S191
 Balsamo G S64
 Baltes P S33, S34, S152
 Bang EJ S158, S168
 Banks M S38
 Bansi D S113
 Bapaye A S7, S62, S101, S133, S225
 Bapaye H S62, S101, S225
 Bapaye J S7
 Baquerizo-Burgos J S78, S172
 Barada K S120
 Barbaro F S73, S121, S278
 Barbera C S143, S224
 Barboi O S153
 Barcenilla Laguna J S258, S275
 Barchi A S45, S72, S117
 Bardou M S284
 Baret F S71
 Barkun A S284
 Barquero D S56
 Barragán Martínez J S277
 Barragán Martínez J S131, S143
 Barreiro P S88, S94, S111, S274
 Barresi L S87
 Barret M S8, S23, S24, S31, S57, S58, S88, S89, S192
 Barreto Perez J S78, S89, S100, S172, S173
 Barreto-Perez J S166
 Barreto- Zuniga R S259
 Barreto-Zuniga R S262
 Baršić N S143, S257
 Bartenschlager C S173
 Barthet M S6, S11, S65, S66, S68, S71, S72, S183, S198
 Bartnicki-Navarrete I S262
 Bártolo J S119
 Bartrolí Alabau B S279
 Barua I S5
 Bar Yishay I S48
 Basalama S S210
 Bascone F S148
 Bas-Cutrina F S5
 Basha J S96
 Bashmail A S210
 Basile P S23
 Basiony AN S142
 Baskind S S138
 Bass AJ S40
 Bassan M S282
 Bassett P S46, S104
 Bassi F S118
 Bassi M S123
 Bastens B S21
 Bastens G S110, S128
 Bastiaansen BA S95, S114
 Battagello J S30, S51
 Baxevanis P S197
 Bayas Pastor D S203, S251
 Bayas Pástor DC S87, S133, S240, S282
 Bazaga S S85, S86
 Bazarbachi A S49
 Bazarova A S17, S18
 Bazerbachi F S107, S110
 Bazzu P S54
 Beaton D S22
 Beaufort I S41
 Beaumont H S33, S34
 Bednarska O S127, S185
 Beg S S103
 Bejinariu N S243
 Beka E S262
 Bektsis T S238
 Belda G S140
 Belghanem F S142, S210
 Belghazi K S92
 Belhocine K S264
 Belhorma S S191
 Belkhatat C S126, S212, S264
 Belkhir S S144
 Bella B S142
 Belle A S31, S88, S137, S192
 Bellil N S190
 Bellini F S265
 Bellot P S97
 Belloula A S142
 Belluardo N S170, S185, S265
 Ben Abdallah H S124, S144, S251, S256, S257
 Ben Abdallah K S222
 Benachour M S210
 Ben Ameur W S263
 Ben Ami Shor D S48
 Benazzo GM S48
 Benboudiaf N S210
 Ben Chaabane N S139
 Bendia E S70
 Benedetti A S70
 Benelbarhdadi I S221, S256
 Ben Elbarhdadi I S221
 Ben Farhat F S144, S190
 Bengus A S35, S182, S253
 Ben Haim M S218
 Benhamdane A S116, S117, S131, S133, S141, S144, S174, S201, S203, S208, S212, S237, S242, S263, S280
 Ben Jazia E S125, S179, S193, S203, S270, S271, S281
 Benkirane A S116, S117, S131, S133, S141, S144, S174, S201, S203, S208, S212, S237, S242, S263, S280
 Ben Mohamed A S222
 Bennett G S247
 Benomar H S269
 Benosman H S84
 Ben Slama A S263
 Ben Slimane B S251, S256, S257
 Benson A S186, S187
 Bentley B S154
 Bényei E S213
 Benzemrane N S142
 Benzoubeir N S119, S147, S166, S277
 Berasain C S97
 Bergbaum C S138
 Berger A S8
 Berger BM S41
 Bergman JJ S40, S93, S94, S109
 Bergman JJGHM S92, S93, S204
 Berhili C S221
 Berkane S S264
 Bernal J S154
 Bernardoni L S12, S87
 Bernardo WM S55
 Berrag S S117
 Berraida R S116, S117, S133, S144, S174, S201, S203, S208, S212
 Berretti D S213
 Berr F S88
 Berrida R S131, S133, S141, S237, S242, S263, S280
 Berry P S231
 Bertani H S11, S70, S124, S235
 Bertoldi L S211
 Bertoli P S74
 Berzal Cantalejo F S258
 Berzin T S186, S187
 Beshara A S115, S135
 Besherdas K S138, S172
 Beşik F S260
 Besó P S17
 Besselink M S47, S108, S227
 Betín PA S162, S165
 Bettinger D S175, S197
 Beuvon F S31
 Bevivino G S44, S73
 Beyer A S173
 Beyna T S93, S113, S215, S219
 Bhagwat S S101, S133, S225
 Bhandari P S15, S18, S25, S27, S90, S113, S125, S171, S178
 Bharath P S110
 Bhatti RB S226
 Bhatti T S213
 Bhujade H S110
 Biamonte P S45, S72, S117
 Biancheri P S20, S164, S190, S219, S263
 Bibani N S190
 Bick B S224
 Biermann K S245
 Bilaj F S248
 Bilal M S49
 Bilican G S231
 Binda C S11, S28, S29, S123, S224, S265
 Binzberger M S205
 Biradar S S225
 Birda CL S107
 Biscaglia G S36
 Bischopps R S38
 Bisello M S113
 Bisschops R S16, S18, S19, S21, S27, S92, S93, S110, S128, S145

Bizid S S124, S144, S251, S256, S257
 Bizzotto A S169, S170, S185
 Bjørsum-Meyer T S52
 Blanco Rey S S81
 Blanco Rey S S97, S122, S243
 Blanco S S13, S121
 Blanco-Velasco G S259
 Ble Caso M S203
 Blero D S59, S65, S68
 Bletard N S128
 Boal Carvalho P S10, S61, S163, S261, S285
 Bodenschatz J S16
 Boeva I S105
 Boix Macia M S143
 Bojarski C S34
 Bolado F S97
 Bolijn AS S41
 Bombeo L S178
 Bonaccorso A S53, S246, S282
 Bonfante FP S265
 Bonura GF S20, S164, S190, S219, S263
 Borahma M S221, S256
 Boraschi Vieira Ribas PH S53, S285
 Bordalo Ferreira F S279
 Bordet M S72
 Borobio E S97
 Borrallo-Cruz JA S81
 Boskoski I S35, S55, S65, S97, S182, S236, S244, S245, S274
 Boškoski I S56, S121, S266, S286
 Boskovski I S160
 Bos P S41
 Bossart E S40
 Bossuyt P S51
 Bota S S13, S37, S146, S188, S214, S256
 Botella B S13
 Botella Mateu B S89
 Botteri E S36
 Botto I S190
 Bouali R S124, S144, S251, S256, S257
 Boualiten K S117
 Boubaoen B S119
 Boudabbous M S202
 Boughoula K S124, S251, S256, S257
 Bouhlef W S139
 Bouhouche N S142
 Bouibaouen B S147, S166, S277
 Bounder G S269
 Boura H S269
 Bourke MJ S88
 Bourke MJ S92
 Bourseau S S21
 Boussafsaf MA S264
 Bouzeloc S S50
 Bove V S55, S56, S65, S266, S274, S286
 Bowman N S38
 Bozzarelli S S248
 Braga Ribeiro I S53, S194, S201, S223
 Braga T S281
 Braham A S263
 Brancaccio ML S11
 Branchi F S34
 Branco JC S279
 Brandaleone L S74
 Brandao P S92, S158
 Brand M S91, S113, S188
 Bratlie S-O S230
 Braun G S182, S202, S237
 Braunwarth E S83
 Bravi I S286
 Bravo S S69, S214, S253
 Breckveldt E S22
 Breslin N S260
 Brettbauer M S5, S42
 Brindle W S207
 Brischoux S S95
 Brito D S99, S158, S229
 Brochard C S24
 Bronswijk M S11, S35, S73, S107, S182
 Brosens L S47
 Brotans A S146
 Brotons Brotons A S131, S143, S277
 Brousse-Potocki J S50
 Brown G S106
 Brule C S29
 Brullet E S67
 Brunet E S67
 Bruno M S14, S33, S34, S47, S98, S242, S258
 Bruno MJ S83, S184, S206, S219, S245, S246
 Brunori A S86
 Bua A S54
 Bucalau A-M S24
 Buchkremer J S34
 Büchner FL S160
 Buckley M S42, S63
 Buda A S18
 Budimir D S199
 Budimir I S143, S257
 Buekers N S41
 Bujanda L S56
 Bulajic M S54
 Bunces-Orellana O S173
 Burattini O S11
 Burciu C S236
 Bures J S158
 Burger J S41
 Burgos Garcia A S134
 Burgos-García A S14
 Burguño B S31
 Burgueno-Gomez B S286
 Burguño-Gomez B S224, S269
 Burr NE S104
 Burtea DE S243
 Buscarini E S25
 Busquets Casals D S168
 Busquets D S109, S142
 Busquets J S254
 Bustamante Bailén M S194
 Bustamante-Balén M S75
 Busta Nistal R S15
 Busta-Nistal R S286
 Busto Bea V S85, S86
 Busto V S69, S82, S214
 Busuioc B S182
 Butler T S116
 Buxaderas ML S154
 Buyschaert K S182

C
 Caballero Llano C S210
 Caballero N S78
 Caballero N S13, S136, S154, S279
 Caca K S114
 Caccia R S259
 Cacho-Díaz M S100
 Cadime AT S99, S158, S229
 Cadoni S S33, S34
 Caillou L S23
 Caillou F S12, S23, S235
 Calandra A S134
 Cali A S53, S246, S282
 Calleja JL S121
 Calleja N S34
 Calleja Panero JL S122, S285
 Calle-Loffredo D S78, S89, S172, S173
 Calm A S13, S136, S153, S279
 Calvet X S67, S163
 Calvo M S196
 Calvo Moya M S273
 Camilleri S S165
 Campion JR S118
 Campo R S163
 Camus Duboc M S23
 Camus M S11, S57, S58
 Canard J-M S57, S58
 Cancela E S147, S267
 Candido Hemerly M S28, S285
 Cândido Hemerly M S53
 Canena J S167
 Canévet M S50
 Canfora ML S70
 Canha MI S118, S215, S243
 Cañizares Molina V S143
 Cannatelli R S17, S18, S139
 Cano Calderero FX S239
 Cantu' P S70
 Cantù P S222
 Capela T S167, S207, S261
 Capogreco A S7, S15, S81
 Cappello A S123, S215
 Capurso G S211, S217
 Carbajo AY S15, S215, S224
 Carbajo-López A S31
 Carbajo Lopez AY S59
 Carbajo-Lopez AY S61
 Carbajo López AY S83
 Carballal S S154
 Carbone M S213
 Cardenas A S109
 Cárdenas A S20
 Cardoso H S9, S90, S112, S165, S184
 Cardoso M S279
 Cardoso P S184
 Cardoso R S147, S267
 Cariani E S7
 Carlino G S55, S56, S65, S266, S274, S286
 Carneiro F S267
 Caronna S S254
 Carpentier D S24
 Carrara S S7, S11, S15, S47, S74, S81, S102, S156, S248
 Carrasco M S283
 Carrascosa J S82, S97, S102, S214, S253
 Carretero C S78
 Carretero C S33, S69
 Carrilho-Ribeiro L S190, S281
 Carroll N S123
 Caruso A S73, S124
 Carvalhana S S190
 Carvalho AC S147, S267
 Carvalho B S41
 Carvalho Lourenço L S239, S279
 Carvalho Td S92
 Casadio M S216
 Casanova G S56
 Casanova González MJ S275
 Casey O S63
 Cash B S145
 Caci M S97
 Casper M S215
 Cassarano S S213
 Castanheira A S147, S267
 Castela J S94
 Castellana S S36
 Castellani D S86
 Castellano F S48, S87, S98, S225
 Castillo J S20
 Castro Urda JL S85, S86
 Catino F S169
 Cauche N S68
 Cavallaro F S10, S34, S222, S259
 Cavina M S222
 Çavuş B S260
 Cazacu IM S243
 Cazacu SM S189
 Cecinato P S88, S106, S117, S118
 Celik G S24
 Cellier C S11, S84, S240
 Cellini C S143
 Cengia G S155
 Cennamo V S11, S123
 Cereatti F S44, S70, S73
 Cerrella Cano C S239
 Cesaro P S169

- Chabib F S221
 Chabib FZ S221
 Chable-Montero F S263
 Chabrun E S57, S58
 Chagas C S94, S111, S274
 Chahal P S48, S255
 Chahi K S126
 Chalamarla L S96
 Chalupa J S130
 Chand M S104
 Chan MW S92
 Chantzievangelinou C S262
 Chaparro MD S13
 Chapelle N S284
 Charara F S62
 Chatzidakis A S147
 Chatzievangelinou C S167, S198
 Chaussade S S8, S31, S57, S58, S64, S88, S89, S192
 Chavan R S96
 Chavarria C S31
 Chavarria C S85, S86, S224
 Chavarria-Herbozo C S286
 Chedgy F S147
 Chen B S184
 Chen C-C S59
 Cheng S S150, S234
 Cherkaoui Malki M S119, S147, S166
 Chetcuti Zammit S S33, S34, S35
 Chetroub H S142
 Cheung HC S103
 Chevaux J-B S64, S88, S137, S216
 Chevaux JB S23, S89
 Chhanchure U S249
 Chicco F S25
 Chico-Sánchez P S155
 Chliara E S223
 Cho E S217
 Choi H-S S158, S177
 Choi HS S138, S140, S168, S169
 Choi SK S272
 Cholet F S152
 Cho SH S217
 Cho SY S67, S128, S217, S272
 Choudhury A S6, S96
 Chougias D S238, S272
 Chouhan MI S258
 Chowdhury S S149
 Christidou A S167, S198, S262
 Christodoulou D S181, S237
 Chtourou L S202
 Chun HJ S138, S140, S158, S168, S169, S177
 Ciamarra P S278
 Cid-Gómez L S146
 Cid L S150
 Çifçibaş Örmeci A S260
 Cifuentes-Gordillo C S78, S100, S172, S173
 Ciliberto E S155
 Cimavilla M S15
 Cimavilla Román M S258, S275
 Ciobanu A S153
 Cioltean C S217, S241
 Ciuffini C S121, S278
 Ciulla MM S10
 Claro I S119, S195
 Classen J S182
 Clavell A S13, S279
 Clees N S119
 Closset J S198
 Cocca S S124, S235
 Cocomazzi F S36
 Codazzi M S169
 Cohen B S115
 Cohn J S172
 Coimbra J S167, S243
 Colan-Hernandez J S154, S279
 Colán-Hernández J S13, S85, S86, S136, S252
 Coleman E S147
 Coleman M S44, S46, S171
 Colombo M S15, S224
 Coluccio C S28, S29, S123, S217, S265
 Cominardi A S11
 Compañy Catalá L S69, S261, S262
 Compañy L S78
 Compañy L S69, S97, S226, S235
 Conceição D S119, S195
 Condren K-A S154
 Conigliaro R S124, S155, S235
 Conio M S153
 Conlon C S248
 Conoscenti G S134
 Consiglieri C S53, S195
 Constantin A S243
 Constantinescu CE S243
 Conte E S53, S70, S246, S282
 Conti Bellocchi MC S11, S12, S87, S217, S248
 Copaescu C S243
 Coppola M S73
 Corbett S S172
 Corcoran R S122
 Cordeiro AM S243
 Cordoba H S20
 Cordova H S109, S110
 Córdova H S81, S154
 Coriat R S31, S57, S58, S192
 Coron E S8, S23, S57, S58, S64, S92
 Corral J S49
 Correale L S44
 Correa T S148
 Corre F S57, S58
 Correia Gomes L S119, S195
 Correia J S33, S43
 Cortegoso Valdivia P S34
 Cortegoso Valdivia P S242
 Cortés-Pérez H S14
 Cortez Pinto J S131
 Cosimelli M S218
 Cosseddu V S54
 Costa D S99, S218
 Costamagna G S27, S55, S56, S60, S65, S70, S71, S73, S97, S121, S236, S244, S245, S266, S274, S278, S286
 Cotsoglou C S96
 Cotter J S10, S61, S99, S161, S163, S207, S261, S285
 Cotton CC S93, S204
 Coumaros D S284
 Coupé VMH S41
 Couto-Worner I S85, S86
 Craciun A S190
 Cramb L S154
 Crapanzano L S148
 Crapé L S151
 Cravero F S71, S87, S98, S225, S242, S258
 Craviotto V S7
 Cravo M S131
 Crepin S S88
 Crespo Sanchez M S239
 Creutzfeldt A S15
 Crinò SF S11, S12, S87, S96, S102, S217, S234, S248
 Crispino F S94, S148, S202
 Cristofalo S S134
 Critchley-Thorne R S40
 Crosta C S286
 Cuadrado Robles EP S34
 Cuatrecasas M S107, S154
 Cubiella J S146
 Cucchetti A S28, S29
 Cudmore J S120, S149, S180
 Cugia L S70
 Culetto A S23
 Cullen G S42, S63, S120, S248
 Cunha MF S104
 Cunha Neves JA S104
 Curatolo A S20, S164, S190, S219, S263
 Cúrdia Gonçalves T S10, S61, S99, S161, S207, S261
 Curries Luengo M S258, S275
 Curvers W S93, S204
 Cyrany J S285
- D**
- Daams F S109
 Dabizzi E S11, S123
 Dacá Alvarez M S56
 Da Costa M S136
 Daenen K S41
 D'Agostino D S246
 Dahan M S29, S88, S89, S95
 Dahel Y S12
 Dahmeni W S263
 Dajti E S28, S29
 Dall'Amico E S11, S71, S98, S225
 Dalmacy D S49
 Da Massa Carrara P S155
 D'ambra G S252
 Damião F S281
 Dancour A S218
 Dandriofosse A-C S110
 Danese S S45, S72, S117
 Danielescu C S253
 Daniel F S120
 Dano H S280
 Dao LV S149
 Dao VH S149
 Dao VQ S149
 Darcin K S8
 Dardor R S266
 Da Rio L S47, S74, S156
 Darre-Næss O S36
 Darzi A S44, S46, S171
 Das A S96
 Dash J S178
 Das K S149
 Dastych M S285
 D'Aversa F S245
 Dawod H S150
 Deane C S260
 De Angelis C S11, S70, S87
 De Angelis CG S48, S71, S87, S98, S225, S242, S254, S258
 de'Angelis G S34
 Debels L S37, S38, S77, S151
 de Benito M S60, S61
 De Benito M S216
 de Benito Sanz M S15
 De Benito Sanz M S59, S83, S224, S269
 De Benito-Sanz M S31
 Debernardi Venon W S254
 de Boer S S50
 Debourdeau A S71, S72
 De Castro L S150
 Decembrino F S11
 Dechene A S215
 De Crem ACP S37
 Dedane B S191
 Dedane E S200
 Deding U S52, S104
 De Freitas Junior JR S234
 de Frutos D S13, S121
 de Frutos Rosa D S81
 de Frutos Rosa D S89
 De Frutos Rosa D S134, S285
 Degand T S23, S89
 De Gennaro N S278
 de Gooyer P S112
 De Hertogh G S16, S18, S92
 Dehghani N S183
 Deiana S S20, S164, S190, S219, S263
 de Jong DM S83, S218
 De Jonge L S22
 de Jonge PJF S93, S204
 Dekker E S22, S41, S50, S51, S74, S95, S114, S157, S186

de Klaver W S41
 de Lacy A S109
 de la Morena F S85, S86
 de la Morena Madrigal E S132, S169
 del Amor R S18
 de Lange T S36
 De la Santa Belda E S176
 de la Serna C S60, S61, S273, S286
 de la Serna-Higuera C S15, S31, S85, S86
 De la Serna Higuera C S59, S83, S215, S224
 De La Serna Higuera C S5
 Delatolas V S239
 Delattre C S68
 Delchambre A S68
 Delgado-Guillena PG S81
 Delgado-Linares C S197
 Delhay M S59
 Delis-van Diemen P S41
 Dell'Anna G S28, S73, S112, S114, S117
 Delogu G S54
 del Pozo-García AJ S219
 del Pozo-García AJ S14, S191, S266
 Del Pozo P S17
 De Lusong MA S160
 Del Valle R S78, S100, S114, S172, S173
 Del-Valle R S166
 Del Vecchio A S114
 Del Vecchio Blanco G S252
 de Maaker MJ S227
 Demaret P S128
 De Maria Pallares P S134
 de María-Pallarés P S14
 Demartines N S235
 Demedts I S16
 Demetter P S8, S24, S62
 Demir K S260
 De Morais Bestetti A S194
 de Moura DTH S55, S150
 De Moura DTH S177, S234
 de Moura EGH S55, S150
 den Hartog B S50
 Denkert C S59, S95
 Denost Q S95
 Denzer U S95, S215
 Denzer UW S59
 de Oliveira GHP S150
 de Oliveira VL S55
 De Pellegrin A S213
 Depla ACTM S41
 de Pretis G S94, S202
 Deprez P S9, S23
 Deprez PH S11, S284
 Deprez PH S102, S280
 de Ridder S S41
 de Roberto G S286
 D'Errico F S11
 Dertmann T S219
 Desai PN S191, S220
 Deshpande A S232, S233
 De Siena M S55, S56, S65, S121, S266, S274, S286
 Desomer L S37, S38, S77, S151
 De Vera F S140
 Deviere J S65, S196, S198
 Devière J S11, S24, S59, S68, S280
 Devlin J S257
 de Vos tot Nederveen Cappel WH S74
 de With PH S90, S183
 Dhar J S6, S96, S107, S110, S220
 Dhillon C S182
 Dias AM S243
 Dias de Castro F S99, S161, S261
 Dias E S67, S121, S267
 Díaz Alcázar MM S151, S152
 Díaz-González A S56
 Díaz R S17, S162
 Díaz-Tasende J S14
 Didden P S58
 Diez Redondo P S56, S269
 Diez-Redondo P S20
 Díez-Redondo P S146
 Di Fonzo M S73
 Di Ganci S S134
 Dijk F S227
 Dilaghi E S79, S152, S268
 Di Leo A S36
 Di Maio F S54
 Di Matteo FM S11, S87, S179, S249
 Dimeas I S272
 Di Mitri R S53, S70, S246, S282
 Dinescu B S253
 Dinic M S239
 Dinis Ribeiro M S99
 Dinis-Ribeiro M S27, S283
 Dinjens WN S245
 Diodoro MG S216
 Di Paolo D S25
 Docherty J S22
 Do-Cong Pham K S11
 Dodmani M S208
 Dogan S S191
 Dogar AW S226
 Dohan A S31
 Doherty G S42, S63, S122
 Doherty J S42, S63, S103, S122, S248
 Dollhopf M S215
 Dolz-Abadía C S14
 Dombrovsky Y S281
 Domenech E S136, S154, S279
 Domènech E S13
 Domingues Â S147, S267
 Do Monte Junior ES S66
 Domper Bardaji F S176
 Donapati VR S260
 Donatelli G S11
 Donato G S70
 Donato P S244
 Dong Z S31, S80, S267, S282
 Donohoe E S103
 Dormann A S215
 dos Santos MEL S150
 Dotan I S139
 Dotor de Lama A S273
 Dotor de Lama AM S89
 Doukas M S219
 Downe H S178
 Draganov K S229
 Draganov P S87
 Dray X S33, S34, S152
 Dreesen M S182
 Drenth JPH S160
 Drug V S153
 Dubois R S73
 Duburque C S152
 Duckworth-Mothes B S176
 Dugardeyn S S68
 Dugum M S49
 Du H S267
 Duits LC S40
 Dumoulin FL S119
 Dunn K S154
 Dura Gil M S59, S224
 Dura-Gil M S60, S61
 Durá Gil M S83
 Dura M S216
 Dwarkasing RS S219
 E
 Ebigbo A S8, S39, S54, S67, S73, S173, S175, S182, S192, S226, S237, S276
 Ebrahim M S220
 Edmundowicz S S187
 Edrees A S268
 Eduardo Lera dos Santos M S201
 Egas-Izquierdo M S100, S173
 Egea J S78
 Ehrlich D S224
 Eid A S142
 Eidler P S259
 Eisendrath P S24, S62, S99, S144, S280
 Elbacha H S119
 El Bacha H S166, S277
 Elbacha H S147
 Elbahr O S268
 Elbaiomy M S266
 El eulj O S221
 El Eulj O S200
 ElEulj O S180
 El-Hajra I S121
 El Hajra Martinez I S81
 El Hajra Martinez I S97, S122
 El Hajra Martinez I S214, S243
 Eliakim R S34
 Elias M S25
 Elias SG S58, S94
 Elkashef W S210, S257
 El koti I S133, S242, S280
 Elkoti I S133, S141, S174, S201, S263
 El Koti I S116, S117, S131, S144, S203, S208, S212, S237
 Elkrinawi J S115
 Elleuch N S263
 Elli L S10, S34, S35, S111, S222, S259
 Ellina M S232, S272
 Elliott T S106
 Ellrichmann M S215
 Ellul P S34
 Elmamouni S S221
 El Menabawey T S70, S153
 Elmo C S153
 El Mountassir M S221
 El Moussaoui I S198
 Elmoutaoukil N S221
 El mqaddem O S180
 Elmqaddem O S191, S209, S227, S264
 El Mqaddem O S126, S200, S212
 El-Nady M S49, S83, S108, S210, S222, S257
 El-Raey F S142
 Elshaarawy O S142
 Elvas L S99, S158, S229
 Elyounsi I S269
 Emmanuel A S5
 Emmanuel J S47
 Endoscopy Centre H SK S160
 Endoscopy Centre S S180
 Engelbrecht M S108
 Englebert G S24
 Epstein M S20, S145
 Erber J S182
 Ercolani G S28, S29
 Erdmann JI S83
 Ergenc I S140
 Erhart L S29
 Erler N S50
 Errabih I S119, S147, S166, S277
 Ersoy O S231
 Escapa M S69
 Escobar Ortiz J S130
 Eshuis WJ S109, S199
 Espinel J S53, S192, S268
 Espin G S142
 Espinos J S136
 Espinós Pérez JC S203
 Esposito D S45, S72, S117
 Esposito G S79, S152, S268
 Essaidi I S269
 Essler G S13, S37, S146, S188, S214, S256
 Esteban JM S38, S109
 Esteban Lopez-Jamar JM S5
 Esteban P S78
 Esteve M S255
 Esteve Martínez MD S143
 Estevinho M S43
 Estevinho MM S33

Estrada-Guevara L S173
 Estradas J S15, S59
 Estradas-Trujillo JA S60, S61, S273
 Estremera-Arévalo F S7
 Estremera F S69, S82, S253
 Ettorre GM S71
 Etzion O S115
 Everson M S38
 Exarchakis G S91
 Ezoe Y S66
 Ezquerro Duran A S130
 Ezquerro Durán A S275

F

Fabbri C S11, S28, S29, S123, S217, S224, S265
 Fabbri S S11
 Fábregat J S254
 Facchiano A S278
 Facciorusso A S11, S12, S87, S96, S102, S181, S234
 Fadel S S142
 Faiss S S67
 Fajardo I S235
 Falcão D S24, S95, S106
 Falconi M S211, S217
 Falt P S112, S285
 Familiari P S97, S236, S244, S245
 Fanti L S45, S72, S117
 Fantin A S11, S248
 Farina E S222
 Farina Sarasqueta A S47
 Farooq A S191
 Farooq O S264
 Farrais S S78
 Fasal R S177
 Fedorov E S33
 Feisthammel J S54
 Félix C S88, S94, S111, S274
 Felli E S236
 Ferchichi I S222
 Ferlitsch M S51, S74, S137
 Fernandes C S33, S43, S88
 Fernández-Bañares F S163, S255
 Fernández-Cruz A S122
 Fernández-Esparrach G S81
 Fernández-Esparrach G S14, S20, S107, S154
 Fernández-García J S279
 Fernández-Gil P S69
 Fernandez M S8, S59, S65
 Fernández N S150
 Fernandez-Prada S S269
 Fernandez-Simon A S109, S110
 Fernández-Simón A S20
 Fernandez Urien I S34
 Fernandez-Urien I S78
 Fernández-Urien I S97
 Fernández-Urién I S102
 Fernández Velado E S275
 Ferrandez A S56
 Ferrara EC S7, S15, S74, S81
 Ferraz JG S18
 Ferraz JGP S17
 Ferre Aracil C S122
 Ferreira A S74, S131
 Ferreira Duarte J S210
 Ferreira J S9, S69, S90, S112, S165, S184
 Ferreira-Silva J S12, S81, S192, S223
 Ferrero E S109
 Ferretti S S74, S156
 Feytmans B S110
 Fiedler J S89
 Figa Francesch M S46, S170, S240
 Figa M S101, S109
 Figueiredo M S88
 Figueiredo P S175, S244
 Filippi E S25
 Fimiano F S48, S87, S98, S225
 Finta A S261

Fiorentino A S202
 Fiori G S286
 Firat E S191
 Firoz T S213
 Fisac-Vazquez J S5
 Fischer S S16
 Fitting D S91
 Flaksbaum Moll C S66, S177, S223
 Flamourakis M S81
 Fleischmann C S67
 Fleurentin A S91
 Flores A S132
 Flores Á S169
 Florou T S198, S238
 Fockens P S73, S84, S95, S112, S114, S157, S186
 Fofiu R S236
 Foncea C S236
 Fonollà R S90, S183
 Fontanie R S216
 Foo F-J S160, S180
 Forti E S11
 Fortuny M S13, S136, S153, S279
 Foruny JR S5
 Fostira F S137
 Foussekis F S236
 Fragaki M S122, S211, S223, S238
 Fraile-López M S25
 Franchellucci G S74
 Francis F S120
 Franco AR S94, S111
 François M S57, S58
 Franco R S278
 Frankema J S160
 Frankenberger R S173
 Frazzoni L S27, S94, S181
 Frederiks CN S93
 Frei NF S40
 Freire JP S281
 Freitas M S10, S61, S99, S161, S163, S207, S261, S285
 Freitas T S33, S43
 Fresneda Cuesta D S266
 Frias Gomes C S74, S131
 Frigstad SO S5
 Frisanchio E S163
 Frulloni L S248
 Fry L S196, S197
 Fry M S49
 Fuccio L S27, S94, S181
 Fuentes Núñez D S125
 Fuentes Valenzuela E S83, S215
 Fuentes-Valenzuela E S31, S59, S60, S224, S269
 Fugazza A S7, S15, S47, S70, S74, S81, S156, S224, S248
 Funayama Y S111
 Fusaroli P S11, S96, S102, S234, S250
 Fytisilis F S238

G

Gabbani T S11, S20, S164, S190, S219, S263
 Gabbiadini R S70
 Gabbrielli A S87
 Gadaleta F S252
 Gadhikar H S133, S225
 Gadour E S224
 Gaia S S98, S242, S258
 Galan MC S196
 Galanopoulos M S123
 Galera Ródano AB S132, S169
 Gallego F S88
 Gallego Rojo FJ S7
 Gallix B S91
 Galloro G S155
 Gal O S115, S135
 Galtieri A S74
 Galtieri PA S7, S15, S47, S81, S156
 Gál V S231
 Galvez C S78

Gambella A S98
 Gamelas V S215
 Gamgami I S251, S256, S257
 Gandhi A S7, S62, S101, S133, S154, S225
 Ganuza M S69, S214, S253
 Gao W S250
 Garbay V S6
 García A S78
 García-Alonso F-J S86
 García-Alonso FJ S15, S85
 García-Alonso J S286
 García Amengual IM S279
 García B S163
 García C S162
 García Campos M S194
 García-Campos M S75
 García-Contreras LF S259
 García-Fernandez FJ S85, S86
 García G S140
 García García de Paredes A S46
 García García De Paredes A S5
 García García de Paredes A S201
 García-García J S32
 García-Herola A S140
 García-Iglesias P S67
 García Lledo J S78
 García-Lledó J S109
 García-Martos E S81
 García Maseda S S122
 García-Mateo S S146
 García MF S131
 García-Oria M S243
 García Pajares F S59
 García Robles A S151
 García-Rodríguez A S20, S154
 García-Romero D S14
 García Sepulcre MF S143, S277
 García Soria A S131, S143, S277
 García-Sumalla A S5, S53, S85, S86, S195, S235, S254
 García Zafra B S20
 Garg L S60
 Gargouri D S190
 Garrido Botella A S81
 Garrido C S109
 Garrido Duran C S279
 Garrido F S154
 Garrido Gallego F S132
 Garrido I S67, S270
 Garsot E S13, S279
 Gasmi M S68, S183
 Gasparini E S11
 Gatt K S34
 Gauchotte G S137
 Gaujoux S S101
 Gavazzi F S248
 Gazelakis K S106
 Gdoura H S202
 Geenen E-J S219
 Genova R S134
 Gentile C S259
 Gentile M S36
 Georgiadi T S198, S262
 Gerard M S144
 Gerard R S57, S58
 Gerges C S215, S219
 Germade A S150
 Germain A S137
 Germanà B S155
 Germani U S86
 Gesualdo M S48, S71, S87, S98, S225, S242, S254, S258
 Geyl S S29, S72, S95
 Ghamsari F S43
 Ghanem M S144
 Gharbi T S119, S147, S166, S277
 Ghediri M S142
 Gheonea DI S189

Gheorghe C S251
 Gheri S S123
 Ghosh S S17, S18, S139
 Ghusn W S120
 Giannakopoulos A S239
 Giannetti G S55, S56, S65, S266, S274, S286
 Giannitti S S252
 Gibiino G S123
 Gijssbers KM S58
 Gilbert TM S83
 Gilja OH S200
 Gil-Lasa I S56
 Gimeno MM S154
 Giner F S75
 Ginés A S20
 Ginès A S107
 Ginestet C S31, S192
 Giordano A S69
 Giotis I S157
 Giovannini M S12, S235
 Giri S S60
 Gisbertz SS S109
 Giulianti F S71
 Giunta M S286
 Giustacchini P S54
 Gkolfakis P S12, S65, S87, S96, S102, S160, S181, S234, S280
 Gleeson FC S46
 Glória L S74, S131
 Goda S S25
 Godat S S12, S235
 Godfrey E S123
 Goelder SK S54, S237, S276
 Goetz M S18
 Goikoetxea-Rodero U S14
 Gokce K S25, S88
 Gokler O S25
 Golan T S218
 Gölder SK S39
 Goldin E S218
 Gomes AC S33
 Gomes C S43
 Gómez Alonso M S7
 Gómez Labrador C S275
 Gómez M S214, S253
 Gómez Villagrà M S78
 Gomis ML S155
 Gonçalves D S121
 Gong D S31, S282
 Gong R S62, S124
 Goni E S215
 Gonzalez B S78
 González-Bueno Puyal J S38
 González C S154, S255
 González de Castro E S258, S275
 González de la Higuera B S97, S214
 Gonzalez-Haba M S97
 González-Haba M S14, S209
 Gonzalez-Haba Ruiz M S81
 Gonzalez-Haba Ruiz M S238
 González-Haba Ruiz M S243
 González-Haba Ruiz M S214
 Gonzalez-Huix F S5, S85, S86
 González-Huix F S101
 González-Huix F S109
 Gonzalez-Huix Llado F S203, S251
 Gonzalez-Huix Lladó F S46, S87, S133, S170, S240, S282
 Gonzalez J-M S6, S11, S65, S66, S68, S71, S183
 Gonzalez JM S72, S198
 Gonzalez S S72
 González S S109
 Gonzalez Suarez B S20
 Gonzalez-Suarez B S109
 González Suárez B S203
 González-Suárez B S69
 Göpel S S182
 Gordon M S115
 Gornals J S109, S252
 Gornals JB S5, S53, S85, S86, S196, S235
 Gornals JB S254
 Gorris M S47, S84, S108, S227
 Gorsi U S107
 Graça AR S175
 Graham D S153
 Graham RP S46
 Grajales-Figueroa G S69
 Granata A S113
 Granata L S278
 Grande G S124, S155, S235
 Grandval P S23
 Grant R S207
 Grasso E S252
 Grau G S67
 Gravina AG S278
 Gravito-Soares E S175
 Gravito-Soares M S175
 Greaves G S255
 Greco G S218
 Gress TM S59
 Greuter MJE S41
 Grey M S255
 Grillo A S11
 Grimpen F S106
 Grisan E S18
 Gröhl K S8, S54, S192, S225, S237, S276
 Gronier O S23
 Groot Koerkamp B S47, S83, S219
 Grossi C S73
 Groth S S199
 Grubelic Ravic K S170
 Gruionu G S243
 Gruionu LG S243
 Grund KE S119
 Gschwind G S95
 Guardiola-Arevalo A S86
 Guardiola-Arévalo A S85
 Guarner-Argente C S5, S14, S85, S86, S109
 Guarner C S20
 Guarner E S142
 Guarner Escribano E S168
 Gubbiotti A S74, S113
 Guduru R SR S260
 Guediche A S138
 Guelleh MO S131, S141, S237
 Guelmami S S142
 Guemguemi I S124
 Guido E S25
 Guilabert L S97, S155, S226, S235
 Guilabert Sanz L S69, S261, S262
 Guimaraes Hourneaux De Moura E S53, S177, S194, S234, S285
 Guimarães Hourneaux de Moura E S28, S201, S223, S275
 Gui X S18
 Gulati S S5
 Gulla A S101
 Gul Z S213
 Gunasingam N S5
 Gundling F S54
 Gupta P S6, S96, S107, S110, S220
 Gupta R S96
 Gupta S S88, S110
 Gupta V S6, S107, S220
 Gurses B S88
 Gutiérrez Alonso M S143
 Gutierrez-Cierco JL S81
 Gutierrez-Rios L S153
 H
 Haasnoot KJC S58
 Habash A S255
 Habersetzer F S236
 Hachicha I S202
 Hacini N S142
 Hadi A S220
 Hadjinicolaou AV S104
 Haefner M S38
 Hagi C S217, S241
 Haidry R S38, S92, S113
 Haidry RJ S93
 Haji A S5, S113
 Hakim H S83, S108, S210, S222, S257
 Halfwerk J S227
 Hall B S118
 Haller B S26, S63
 Hallit R S31, S89, S192
 Hamada K S66
 Hamm A S89
 Hammami A S263
 Hammel G S173
 Hampe J S215
 Hamson J S25
 Hamzaoui MI S222
 Hamzaoui ML S222
 Handa H S62
 Han J S237
 Han KJ S237
 Hann A S91, S188
 Han S S49
 Hansen EF S220
 Hanses F S182
 Hanumanthu S S258
 Hara FO S122
 Harbi R S179, S193, S203, S270, S271, S281
 Harding K S255
 Harrison P S257
 Hartley C S46
 Hartley I S106
 Hartmann A S16
 Hartmann D S215
 Harustiak T S193
 Hassan C S7, S15, S25, S27, S30, S42, S44, S47, S51, S64, S73, S74, S102, S139, S156, S164, S169, S171, S181
 Hassan MA S276
 Hassan SM S226
 Hassan Z S224
 Hasselblatt P S175
 Hassine A S125, S179, S193, S203, S263, S270, S271, S281
 Hatlebakk JG S200
 Hatori S S62
 Havre RF S200, S240
 Hayata N S271
 Haycock A S171
 Hayee B S5, S18
 Hazewinkel Y S157, S186
 Hazzan R S186, S187
 Healey C S44, S46, S171
 Hebban S S158
 Heda R S43
 Hedenström P S105, S213, S230
 Heeregrave E S160
 Heilmaier M S156
 Heise C S101
 Heissat S S73
 Helle K S261
 Hemerly MC S55
 Henao-Carrasco A S81
 Henrique Boraschi Vieira Ribas P S28
 Hereu P S5
 Heringa M S160
 Hernandez G S56
 Hernández L S125, S163
 Hernandez-Lara AH S46
 Hernández-Mondragón OV S259
 Hernández V S150
 Hernandez Villalba L S56
 Hernán P S191, S219
 Herner A S226, S238
 Héroin L S72, S73, S236
 Herrera I S97
 Herreros de Tejada A S14, S56, S209

- Herreros-de-Tejada A S13, S121
 Herreros de Tejada Echanojauregui A S81
 Herreros de Tejada Echanojauregui A S89, S134
 Hervás J S162
 Hervas N S82, S102
 Hervás N S33, S214
 He Y S103
 Hidalgo Á S266
 Higashino K S66
 Hijmans B S41
 Hildenbrand R S119
 Hinojosa Duenas FX S66
 Hinterberger A S51, S74
 Hirschman S S43
 Hisai H S227
 Hittelet A S59
 Hizkiya R S115
 Hlavsa J S240
 Hochberger J S61, S141
 Hodson J S139
 Hoff G S36
 Hoffman A S215
 Hoffmann J S173
 Hoffmeister A S54
 Hof M S40
 Hoibian S S12
 Hollenbach M S54, S101, S215
 Holme Ø S5, S36
 Hombrados M S142
 Hombrados Verde M S168
 Honggang Y S80
 Hoogduin KJ S184
 Hoogenboom SA S227
 Hoque S S59
 Horgan G S42, S63, S120
 Hormung F S89
 Horta D S239, S255
 Hosni M S120
 Hossain MS S48
 Houben MHMG S92, S93, S204
 Hourigan L S110
 Hourniaux De Moura DT S66
 Hourniaux De Moura EG S66
 Houwen BB S157, S186
 Hower M S182
 Hrabar D S143, S199, S257
 Htet H S25, S27, S125, S178, S189
 Huang J S282
 Huang L S77
 Huberland F S68
 Huberty V S59, S65
 Huelin Álvarez P S170, S240
 Huerta-Madrigal A S14
 Huertas C S85, S86, S142
 Huertas Nadal C S168
 Hügler U S113
 Hugova K S193
 Huisman JF S74
 Hula H S125
 Huml I S170
 Hung A S138
 Hurtado A S97
 Hu S S39, S80, S124
 Husain Calzada I S239
 Hussain F S49
 Hussain M S226
 Hussein M S38, S158
 Hutchesson I S157
 Hu X S80
 Hwang J S282
 Hysa A S248
- I
 Iacob AV S243
 Iacob R S251
 Iacopini F S27, S44, S73
 Iacucci M S17, S18, S139
 Iannone A S224
- Ibañez Sanz G S56
 Iborra I S13, S136, S154, S279
 Ibrahim D S206
 Ibrahim W S142
 Ichimasa K S26
 Ijspeert J S22, S51
 Ikematsu H S166
 Iloghmane H S131, S237
 Imandi V S35, S209, S258
 İmanov Z S260
 İmen A S179
 Immaneni B S260
 Impellizzeri G S20, S164, S190, S219, S263
 Inam M S230
 Inavolu P S207
 Ingram RJM S17
 Iñigo Chaves AM S131
 Iñigo Chaves AM S143, S277
 Ioannou A S197
 Ionescu V S251
 Iori V S222
 Isahi U S253
 Ishaq S S25
 Ishida F S26
 Ishida H S138
 Ishihara R S66
 Ishikawa H S66
 Ismail F S159
 Ismaili MZ S209, S221
 Ismaili Z S126, S180, S191, S198, S200, S212, S228, S232, S264, S272
 İstemihan Z S260
 Itoh H S5
 Iwade Y S27
- J
 Jackowski M S126, S228, S229
 Jacob BM S115
 Jacob H S186, S187
 Jacques J S23, S24, S29, S57, S58, S64, S71, S72, S88, S89, S95
 Jaekers J S107
 Jagielski M S126, S228, S229
 Jain AK S249
 Jaïs B S11
 Jakob C S182
 Jakobs J S95
 Janeczek P S240
 Jankovic K S271
 Jans A S16
 Jansen JM S41
 Jansen M S92
 Janssen JM S79
 Januszewicz W S32
 Jaques J S81
 Jarczyk G S126
 Jarmin R S84
 Jasmin Roslan E S84
 Jaziri H S263
 Jecheva I S250
 Jeon Y-T S158, S177
 Jeon YT S138, S140, S168, S169
 Jenkins W S103
 Jeon HJ S158, S168, S169, S177
 Jezequel J S11
 Ji EH S27
 Jimenez A S78
 Jimenez García N S277
 Jiménez M S53
 Jiménez-Rosales R S32
 Jimeno M S56
 Jin P S282
 Jiricka L S51, S73, S137
 Jmaa A S263
 João M S99, S158, S229
 Joao Matias D S20
 João Moreira M S10, S161, S261
 Johansen K S36
- Johansson GW S34
 John S S126, S154, S282
 Johnson AM S49
 Johnson G S70
 Joshi D S257
 Joumyi MR S269
 Jovani M S49
 Jovanovic I S271
 Jover Martínez R S116
 Jover Martínez RJ S116
 Jover R S20, S42, S56, S140, S146, S155
 Joyce A S118
 Joyce D S48
 Joy E S63, S103
 Juan-Casamayor L S269
 Juglard C S89
 Junquera Alonso E S239
 Junquera F S67, S109, S163
 Juroš Z S257
 Jusue V S82
 Jusué V S97, S102, S214, S253
 Juzgado D S109, S113
- K
 Kaalby L S52
 Kaalby Møller L S104
 Kabrawala M S191, S220
 Kaddache N S264
 Kaddouri MA S126, S212
 Kader R S38, S92, S104, S158
 Kadiri M S221
 Kadota T S166
 Kahaleh M S78, S89, S224, S284
 Kahloon A S186, S187
 Kahn M S173
 Kahn S S159
 Kahn T S159
 Kahrman A S24
 Kainz F S63
 Kalager M S5
 Kalapala R S207
 Kala Z S240
 Kale A S60, S208
 Kalla R S207
 Kallel R S202
 Kalner A S205
 Kamal A S268
 Kamani L S134
 Kamiński MF S32
 Kandulski A S215
 Kanesaka T S66
 Kani HT S140
 Kapizioni C S181
 Kapsoritakis A S238, S272
 Karagyozyov P S105, S193, S229, S250
 Karakasidis E S272
 Karakoidas C S272
 Karampekios G S198, S262
 Karim MM S159
 Karnik N S160
 Karsenti D S57, S58
 Karstensen JC S16, S220
 Kartheuser A S82
 Kashida H S62
 Kateri C S238
 Kather JN S91
 Katinos G S127
 Katopodi K S167, S198, S262
 Kato S S5
 Katsanos K S236
 Katz L S186, S187
 Kawakami Y S271
 Kawai Lefor A S111
 Kaymakoglu S S260
 Kayser G S197
 Kazamias A S232
 Kazamias G S223
 Keating E S118

Kecili N S142
 Kelleher B S247
 Kent A S5
 Kerbage A S120
 Kermarrec T S50
 Keuchel M S33, S34
 Keulen ETP S41
 Keum B S138, S140, S158, S168, S169, S177
 Kevans D S122
 Kezoula D S142, S210
 Khader M S48
 Khalaf K S25, S70
 Khalyfa A S230
 Khan MU S275, S276
 Khannoussi W S126, S180, S191, S198, S200, S209, S212, S221, S228, S232, S264, S272
 Kharasse G S200
 Kharrasse G S126, S180, S191, S198, S200, S209, S212, S221, S228, S232, S264, S272
 Khater S S34
 Kheir AO S127
 Khodakaram K S230
 Khoo CH S127
 Khorrami Minaei S S279
 Khoshiwal AM S40
 Khouitar S S264
 Khrouf O S202
 Khsiba A S222
 Kiesslich R S17, S18
 Kim DH S67, S82, S128, S272
 Kim E-S S158
 Kim ES S138, S140, S168, S169, S177
 Kim H-S S67, S128
 Kim HS S272
 Kim M-H S217
 Kim S S140, S169
 Kim SH S158, S168, S272
 Kim W S255
 King S S129
 Kinhal S S35, S209, S258
 Kinsella C S159
 Kiosov A S106, S249
 Kiosow O S284
 Kitamura M S111
 Kiliç V S231
 Kivrakoğlu F S231
 Klare P S26, S63
 Klarin I S35, S182
 Klvana P S130
 Klymenko A S249
 Klymenko V S249
 Kobaek-Larsen M S52, S104
 Koch AD S92, S93, S204, S206
 Kocherkevych O S125
 Kochhar R S6, S96, S107, S110, S220
 Koch K S176
 Koch N S75
 Koch S S23
 Kodetova D S193
 Koffas A S238, S272
 Koggel LM S160
 Koh F S129, S160
 Koh FH S180
 Kohoutova D S158
 Kolb J S49
 Kolet G S47
 Kollar M S193
 Koller T S231
 Kolovratnikova H S240
 Komeda Y S62
 Königsrainer A S176
 Kopelman Y S115, S135
 Kopylov U S34
 Kordjani S S142, S210
 Koşar K S231
 Koshiya S227
 Kotha S S231
 Kotsikoros N S232
 Koukoulioti E S147
 Koulali H S191, S232, S272
 Koulaouzidis A S34
 Koulaouzidis A S34, S152
 Koustenis K S167, S262
 Kovacevic B S87
 Kovačina M S199
 Kovalyshyn N S125
 Kozyak I S125
 Kranidiotis G S232, S272, S273
 Krati K S189, S265
 Krishna SG S49
 Kröner T S52, S53
 Krott L S38
 Kroupa R S240, S285
 Krznaric Z S170
 Ksiao M S263
 Kucha P S32
 Kuchar J S130
 Kudo M S62
 Kudo S-e S5, S26
 Kudo T S26
 Kuellmer A S175, S194, S197
 Kuijvenhoven JP S41
 Kuipers E S50
 Kuipers EJ S74
 Kulkarni A S232, S233
 Kulkarni M S232, S233
 Kulkarni V S232, S233
 Kumar A S6, S110, S220
 Kumar KH S107
 Kumar L S120
 Kumar S S177
 Kum AST S150, S194
 Kunčák B S58
 Kunchala RM S258
 Kunda R S89, S107
 Kunovsky L S240
 Kunovský L S285
 Kupczyk W S229
 Kuroki T S5
 Kuruthukulangara M S60
 Kusters KC S183
 Kutilek M S146
 Kuttner-Magalhães R S88
 Küttner-Magalhães R S24, S95, S106

L
 Laaroussi R S131, S237
 Labarile N S17, S18, S139
 Labonde A S72
 Lacle MM S58
 Ladabaum U S42
 Lades G S72
 Ladlad J S160
 Ladrón Abia P S194
 Lafeuille P S72, S73, S89
 Lagdali N S221
 Lahchich M S220
 Lahiff C S118, S129
 Lahner E S79, S152, S268
 Lajin M S66, S110, S128, S195, S233, S273
 Lakhtakia S S84, S96
 Laleman W S73, S107, S112, S182, S224
 Lalili S S142
 Lamani Y S110
 Lamazza A S155
 Lambin T S57, S58, S64, S72, S81, S89
 Lammert F S173
 Lamme SRB S58
 Lam NH S149
 Lamonaca L S96
 Lamouri C S236
 Landi S S123
 Landsman M S186, S187
 Lanocita R S218
 Lansdorp-Vogelaar I S22, S50, S51
 Lansier A S240
 Lantinga MA S160
 Lapenta R S216
 Laquente B S254
 Larghi A S11, S87
 Laterza L S155
 Latorre P S17
 Laudi C S241
 Laurent V S216
 Laurenzi A S71
 Lauritsen ML S220
 Lauritzen SS S200
 Lauwereys J S107
 Layaida K S264
 Lazarev M S18
 Lazaridis L-D S147
 Leal C S23
 Leandri C S152
 Le Baieur Y S89
 Leblanc S S64, S88, S89
 Leclerc E S95
 Leclercq P S21, S110, S128
 Ledebouer M S41
 Lee B S160
 Lee D S27
 Lee HS S140, S168, S177
 Lee JM S140, S158, S168, S177
 Lee KW S158, S168, S169
 Leenhardt R S34
 Lee P S49
 Lee S S237
 Lee SK S217
 Lee SS S217
 Leeuwenburgh I S184
 Lee YH S67, S128
 Leffler D S35
 Legros R S24, S29, S64, S72, S81, S88, S89, S95
 Lehmann L S72
 Leite S S43, S99
 Lekkerkerker S S84, S227
 Lemmens GM S41
 Lemmers A S24, S59, S62, S88, S99, S196, S198, S280
 Le Moine O S59
 Lemos Garcia J S119, S195
 Lenoci N S25
 Leonard D S82
 Leonidakis G S197
 Leonor P S49
 Lepetit H S24, S29, S88, S89, S95
 Lepilliez V S23, S57, S58, S64, S88, S89, S128
 Lera Dos Santos ME S234
 Le Reun S S50
 Leroux J S64
 Letkovský J S58
 Leung S-P S92
 Levy MJ S46
 Leyden J S118, S120, S129, S247
 Lianlian W S80
 Liao W-C S59
 Libânio D S283
 Lidgard GP S41
 Lieverse R S41
 Liew J S129
 Light H S172
 Ligresti D S70
 Li J S80
 Lima Capela T S10, S61, S99, S161, S163, S285
 Limbert M S119
 Lim E S161
 Lim Py S161
 Lim WS S129
 Lin C-L S160, S180
 Lindfors P S185
 Lindkvist B S105, S213
 Lin E S160
 Lines D S38
 Lipczyński R S32
 Lira A S67, S163

- Lira de Oliveira V S28
 Lira De Oliveira V S53, S285
 Lisotti A S11, S96, S102, S234, S250
 Livovsky DM S218
 Li X S98
 Llach J S20
 Llovet L S67
 Løberg M S5
 Loconte I S36
 Loizzi D S12
 Lo Mastro M S246
 Londoño Castillo J S96
 Longcroft-Wheaton G S25, S189
 Longo S S143
 Lopes J S190, S267
 Lopes S S112, S158
 Lopez A S216
 López B S163
 Lopez C S142
 López-Muñoz P S75, S165
 López-Muñoz P S162
 López P S163
 López S S107
 López-Serrano A S17, S162
 Lopez Vicente J S56
 Loras-Alastruey C S252
 Loras C S85, S86, S235
 Lorente JR S162
 Lorenzetti R S64
 Lorenzo-Zúñiga V S75, S162, S165, S194
 Loria A S114
 Louis H S196
 Loureiro R S167, S243
 Loustaud-Ratti V S72
 Lovat L S38
 Lovat LB S104
 Lovat LB S92, S158
 Lovero R S11
 Luca M S153
 Lucarini M S118
 Lucena JL S13
 Luglio G S106
 Lujan M S78
 Lukashok HP S78, S89, S100, S172, S173
 Lumberras B S146
 Luna-Rodriguez D S53, S195, S235, S254, S286
 Luo C S267
 Luo R S39
 Lupo M S11, S124, S235
 Lupu A S24
 Luttikhold J S199
 Lu X S250
 Lux T S188
 Lu Z S80
 Luz GdO S150
 Lyon A S126
 Lyutakov I S35, S182
- M**
- Maachi F S269
 Macedo G S9, S12, S67, S69, S81, S87, S88, S90, S102, S112, S121, S165, S184, S192, S223, S267, S270
 Macedo Silva V S10, S61, S99, S161, S163, S207, S261, S285
 Machado L S283
 Machancoses A S17, S162
 Machicado JD S49
 Machlab S S56, S67, S163
 Maciel J S119
 Mack A S106
 Macke L S75
 MacLeod C S163
 Macor D S213
 Madacsy L S261
 Madrigal B S215
 Madsen JB S52
 Maeda N S27, S189
 Maeda Y S26
 Maekawa A S66
 Maestro Antolín S S258, S275
 Magalhães J S99, S207
 Magne J S88
 Mahmoudi M S222
 Maida M S134, S160, S164
 Maieron A S29, S146
 Maisterra S S53, S195
 Maisterra-Santos S S252
 Majcher B S51, S74, S137
 Makridaki D S239
 Maldí E S241
 Maletta F S242
 Malfertheiner P S75
 Malik HZ S83
 Malik K S264, S274
 Mandarino F S112
 Mandarino FV S45, S72, S117
 Mandavdhare HS S107
 Mandelli G S25
 Mane K S249, S258
 Manfrin E S248
 Manganaro M S165
 Mangas C S97, S235
 Mangas-Sanjuan C S42, S140, S146
 Mangas Sanjuán C S69, S261, S262
 Mangas-Sanjuán C S116, S226
 Mangiafico S S11, S124, S235
 Mangiavillano B S11, S96, S102, S234
 Mangira D S106
 Manici M S24, S25, S88
 Mannava AK S260
 Manning J S20
 Manno M S11, S20, S70, S164, S190, S219, S263
 Mann S S262
 Manoharan T S116
 Manolakis A S198, S238, S272
 Manovski K S100, S130
 Manta R S86, S153
 Mantzaris G S167, S198, S262
 Manzoni G S54
 Marasà M S134
 Marcello M S165
 Marcos-Pinto R S24, S95, S106
 Marcozzi G S74
 Maregatti M S10, S259
 Margalit R S34
 Margos W S59
 Mariani A S70, S211, S240
 Marijnissen FE S74
 Marílio Cardoso P S165
 Marin Gabriel JC S134
 Marín-Gabriel JC S14, S191, S219
 Marinho C S207
 Marin I S153, S279
 Marín I S13, S136
 Marín M S254
 Marino M S213
 Marinoni B S34, S35
 Markoglou K S110
 Marmo C S34
 Marocchi G S11, S265
 Maroni L S70
 Maroto C S215
 Maroto-Martin C S273
 Maroto Martín C S83
 Maroto-Martín C S224, S269
 Marques Bernardo V S275
 Marques Bernardo W S28, S53, S66, S177, S194, S201, S223, S285
 Marques I S119
 Marques M S67, S88, S267, S270
 Marquina V S254
 Marra A S36
 Marshall S S46
 Martel M S284
 Martin C S48, S255
 Martín-Cabezuelo R S162, S165
 Martín-Cardona A S254
 Martín D S13
 Martinek J S193
 Martínez A S121
 Martínez-Alcalá A S196
 Martínez-Alcalá A S52, S89, S100, S130, S197, S235
 Martínez Alcalá Á S132
 Martínez-Alcalá Á S132, S154
 Martínez-Bauer E S67, S163
 Martínez-Camacho C S259
 Martínez-Cara JG S32
 Martínez de Juan F S56
 Martínez Delgado S S194
 Martínez-García CL S263
 Martínez J S97, S226
 Martínez Moreno B S85
 Martínez Moreno B S69, S261, S262
 Martínez-Moreno B S86, S87, S97, S226, S235
 Martínez Ruiz R S122
 Martínez Sempere J S69, S261, S262
 Martínez-Sempere J S97, S235
 Martínez Sempere JF S116
 Martínez-Turnes A S150
 Martín H S70
 Martín López J S243
 Martín Rodríguez D S89
 Martins A S209, S239, S279
 Martins D S147, S267
 Martins Pinto da Costa A S81, S243, S273
 Martí Ragué M S203
 Marx M S12, S235
 Marzo V S25
 Mascarenhas A S94, S111, S274
 Mascarenhas M S9, S69
 Mascarenhas Saraiva M S9, S90, S112, S184
 Mascarenhas Saraiva MJ S90, S165
 Mascarenhas Saraiva MN S112
 Masclee AA S79, S90, S183
 Masclee AAM S41
 Maselli R S7, S15, S44, S47, S74, S81, S113, S156, S171, S248
 Masia S S54
 Masi Miranda A S210
 Masoni B S74
 Massari C S55, S56, S65, S266, S274, S286
 Massidda M S54
 Massimino L S45
 Masterton G S207
 Mastorakis E S223
 Mastrokosta E S239
 Mastrorocco E S74
 Mata A S136
 Matallana Royo V S122
 Mateescu B S253
 Mateescu RB S35, S182
 Mateos B S78
 Mateus Dias A S167
 Mathai DSK S247
 Mathai SK S247
 Matharoo M S44, S46
 Mathis G S236
 Matos H S281
 Matsumura T S73
 Matteo MV S55, S56, S65, S266, S274, S286
 Matuguma SE S234
 Matull W-R S70
 Maurano A S70
 Maurel J S107
 Mauriello A S48, S87, S98, S225
 Mavrogenis G S107, S110, S284
 Mavroudis D S137
 Mayerle J S75, S215
 Mayer P S72, S236
 Mazelier J-P S91
 Mazzaferro V S218
 Mazza T S36

Mazzocchi A S70
 McAlindon M S34
 McCarthy EM S129
 McCarty TR S150
 Mc Cormick A S248
 Mc Dermott E S42
 McDermott E S63, S103
 McMichael J S48
 McNally M S181, S274
 McNamara D S33, S34, S116, S122, S167, S260
 McRobbie H S127, S157
 Mechhor S S119, S147, S166, S277
 Medas R S101, S223
 Medhioub M S222
 Medina Prado L S20, S69, S116, S261, S262
 Medina-Prado L S42, S140, S155
 Medkour MT S142, S210
 Meert W S182
 Meeuse J S41
 Megahed N S266
 Mehta R S191, S220
 Mehta S S249
 Meijer G S50
 Meijer GA S41
 Meijer S S84
 Meijer SL S92
 Meijide Santos G S239
 Meinikheim M S39, S73, S175
 Meining A S15, S91, S113, S188
 Meisner S S166
 Mejias A S158
 Mela M S167, S198, S262
 Melcarne L S67
 Mendel R S39, S175
 Mendez JC S89, S172
 Mendonça Proença I S28, S53, S66, S177, S194, S201, S223, S275, S285
 Mendo R S94, S111
 Mendoza Jiménez-Ridruejo J S275
 Menon K S177, S257
 Mercado M S97
 Merfea RC S78, S89, S100, S166, S172, S173
 Messmann H S8, S27, S39, S54, S67, S73, S92, S173, S175, S182, S192, S202, S226, S237, S276
 Mesureur L S196
 Metter K S119
 Metz A S106
 Meyer A S91
 Michael T S115
 Michida T S66
 Michielan A S94, S202
 Michopoulos S S197
 Mickenbecker M S126
 Migliorisi G S74
 Miguel I S101
 Miguel Salas I S46, S87, S133, S170, S203, S240, S251
 Miguel Salas MI S282
 Mihalache C S204
 Mikoviny Kajzrlíkova I S130
 Milano V S54
 Miletì A S36
 Milluzzo SM S60, S71, S97, S169, S236, S265
 Miñana Calafat JM S46
 Miñana JM S101
 Minato Y S127
 Minchev T S193
 Minegishi Y S26
 Minelli Grazioli L S169
 Mínguez Sabater A S194
 Ministro P S147, S267
 Mion F S6
 Miquel Salas I S5
 Mira JJ S146
 Miralles C S97
 Miranda García P S130
 Miranda-García P S14
 Miranda-Zazueta G S262
 Miro M S196
 Misawa M S5, S26, S27
 Mita E S138
 Mitra S S96
 Mitsui T S166
 Miutescu B S236
 Miyachi H S26
 Miyahara S S111
 Miyata Y S5, S26
 Mnif L S202
 Mocciano F S53, S246, S282
 Mochida K S5
 Mochizuki K S5
 Moen S S74
 Moga TV S236
 Mohamed F S168
 Mohamed G S124, S251, S256, S257
 Mohamed Z S84
 Mohammed S S25
 Moisdou R S272
 Moleiro J S119, S195
 Molinaro A S213
 Moll CF S150
 Molnar I S249
 Momblan D S109
 Monino L S9, S82
 Mönkemüller K S52, S53, S61, S89, S100, S130, S196, S197, S235
 Montale A S11
 Montanelli J S91
 Montazeri NS S114
 Monteil J S72
 Monte Junior ES S55
 Monteleone G S252
 Montero Moretón ÁM S258, S275
 Montesano L S252
 Montori S S7
 Moons LMG S41, S58
 Moore R S154
 Moothedath F S177
 Moraes Bestetti A S201, S275
 Morain NO S122
 Morais R S67, S88, S267, S270
 Morão B S74, S131
 Moreels T S9, S82, S102
 Moreira da Silva BA S258, S275
 Moreira L S154
 Moreira MJ S163, S285
 Morell B S199
 Moreno de Vega V S154
 Moreno V S13, S136, S279
 Moreno-Zambrano D S173
 Morgan S S207
 Morgenstern N S16
 Mori K S5
 Moris M S5, S109
 Morita Y S5
 Mori Y S5, S26, S27, S47
 Morreale G S165
 Mosca P S70
 Möschler O S113
 Moss A S106
 Mossa M S252
 Mostafavi NS S157
 Mosteanu O S217, S241
 Motohiko K S94
 Moulart F S99
 Mountaki A S167, S262
 Mountney P S38, S92, S158
 Mourabit Y S65
 Mourad A S147
 Mourad F S120
 Moura M S190, S281
 Moussavere I S236
 Moutinho-Ribeiro P S102, S267
 Moutzoukis M S236
 Mpalamenos D S107
 Mpeka E S167
 Mpitouli A S211, S238
 Mrabet S S125, S179, S193, S203, S270, S271, S281
 Mrabti S S116, S117, S131, S133, S141, S144, S174, S201, S203, S208, S212, S237, S242, S263, S280
 Mueller J S114, S175, S194, S197
 Muktesh G S6, S96
 Mulcahy H S42, S63, S103, S248
 Mulki R S49
 Muller M S216
 Müllhaupt B S238
 Munck C S5
 Muñoz Rubio E S122
 Muñoz González R S130, S275
 Muñoz Pérez R S69, S261, S262
 Muñoz R S226
 Murano T S166
 Murcia O S42, S140
 Murcio-Pérez E S259
 Murphy C S247
 Murphy CL S180
 Murphy CL S149
 Murzi M S5, S20
 Muscatello N S11, S12, S96
 Mushtaq K S275, S276
 Mussetto A S11, S33, S34
 Musulen E S56
 Muthusamy R S224
 Muzalyova A S173, S182
 Myung Y S237

N
 Naber T S41
 Nabi Z S96
 Naewie A S89
 Nagayama M S111
 Nageh A S142
 Nagengast WB S92, S93, S204
 Nagl S S8, S54, S192, S225, S237, S276
 Nagras ZG S220
 Nagtegaal I S22
 Naing A S177
 Nakahira H S66
 Nakajo K S166
 Nakamura H S26
 Nalankilli K S106
 Nandi N S10, S222, S259
 Nandwani S S191, S220
 Napoleon B S49
 Naranjo V S18
 Nardone OM S17, S18, S139
 Narra Figueiredo P S158
 Nascimento C S74, S131
 Nasiri M S180, S191, S212, S227
 Nasr H S142
 Nassiri M S264
 Nass KJ S186
 Natarajan B S231
 Navab N S26
 Nemeth A S34
 Nemoto T S5
 Nennstiel SC S226, S238
 Netz O S115
 Neuhaus H S92, S93, S113, S215, S219
 Neuhaus L S75
 Neumann H S19, S186, S187
 Neumann J S75
 Neurath MF S16
 Nevado S S266
 Ngamruengphon S S186, S187
 Nguyen DH S36
 Nguyen VC S255
 Ng Wk S161
 Nicholson B S22
 Nicolaou P S81, S211, S238
 Nicolás-Pérez D S146

Nicoletti R S7
 Nieto J S224
 Nieuwenhuis EA S92, S93
 Nikolaou P S122, S223
 Nikolić M S199
 Nikolova D S253
 Nikolovska Trpchevska E S253
 Nikumbh T S7, S62, S101, S133, S225
 Nilsen JA S5, S36
 Ninkovic M S83
 Nista EC S245
 Njimi H S59
 Nkurunziza L S166, S277
 Nogales-Rincón Ó S14
 Nolan B S42, S63
 Nooijen LE S83
 Noronha Ferreira C S281
 Norton B S138, S262
 Nousbaum J-B S50
 Novovic S S220
 Numans ME S160
 Nuñez-Otero J S85, S86
 Nuñez Rodríguez H S20, S269
 Nunziata R S143
 Nuriyev K S260
 Nyhlin N S185

O

O'Connor A S260
 O'Donnell S S260
 O'Donovan N S159
 Offensperger F S197
 Ofosu A S96
 Oguro K S111
 Ohara F S34
 O'Hara F S167
 Oh D S217
 Oh Ga Y S92
 Ojeda A S146
 Ojeda Gómez A S131, S143, S277
 Okasha H S49
 Okimoto K S73
 Okuno T S25
 Olivari N S169, S265
 Oliveras B S142
 Oliveras Font B S168
 Olivier R S8, S95
 Olteanu A S153
 Omella IJ S13, S121
 Omella Usieto I S238
 Omodei P S7
 O'Morain N S42, S63, S103, S248
 Omurca F S191
 O'Neill C S94, S111
 Oneto C S145
 Ong Ming Liang A S160
 Ono A S56
 Ordás I S154
 Orlando D S216
 Ornelas Saraiva R S167
 Orry X S216
 Orságh A S58
 Ortega A S136
 Ortega Sabater A S203
 Ortigão R S283
 Ortiz O S154
 Orzan R S217, S241
 Osman M S133, S174, S201
 Osorio Aguilar J S203
 Osuská D S58
 Othman H S84
 Ottaviani L S20, S164, S190, S219, S263
 Ouang H S284
 Ouazzani S S66, S183, S198
 Oubaha S S189, S265
 Oudkerk Pool M S50
 Oustani M S180, S198, S200, S212, S264
 Ovadia B S115, S135
 Overwater A S93, S94
 Owen T S36
 Oyewole O S207
 Oyon D S97
 Ozen Alahdab Y S140

P

Pabón-Carrasco S S81
 Padoy N S91
 Paggi S S25
 Pagliara D S54
 Palazzo M S11
 Palladino G S278
 Palle J S240
 Palma R S113
 Palm C S39, S175
 Palmieri LJ S31
 Palnitkar S S225
 Pamies Ramon MI S277
 Panaccione R S17, S18
 Panarese A S278
 Panarese I S278
 Panda I S96
 Panigrahi M S258
 Panos Zamora J S213
 Panzeri V S211
 Paolillo R S36
 Papadopoulos V S181
 Papaefthimiou A S102
 Papaefthymiou A S238, S272, S284
 Papanikolaou I S102, S234
 Papanikolaou IS S147
 Papastergiou V S167, S198, S211, S239, S262
 Papathanasiou E S197
 Pappa A S198
 Papparella G S73
 Papparella LG S65, S121, S278
 Paraskeva K S239
 Pardo Grau L S168
 Pardo L S142
 Paredes JM S17, S162
 Parejo Carbonell S S69, S201
 Parejo-Carbonell S S14
 Parigi T S15
 Parigi TL S17, S18
 Park CH S217, S272
 Park DH S217
 Parker B S255
 Park G S158, S168, S169
 Park J S168
 Park JY S158
 Park S-Y S67, S82, S128, S272
 Parra-Blanco A S17, S18, S25
 Pascual S S97
 Paspatis G S81, S122, S137, S167, S211, S223, S238, S239
 Pasquale L S155
 Pastorelli L S18
 Patel A S257
 Patel C S191, S220
 Patel M S5, S177
 Patel N S191, S220
 Patel R S127, S157
 Pateras K S238
 Paterson A S123
 Patil GK S284
 Patil P S249
 Patiy A S125
 Pattynama LM S109
 Pattynama LMD S199
 Patwardhan N S60
 Patwardhan S S133
 Pauliat E S95
 Pauliuc O S177
 Pavão Borges V S167
 Pavić T S199, S257
 Pawar B S62
 Pazdro A S193
 Pecere S S27, S44, S73, S121, S278
 Pech O S92
 Peck-Radosavljevic M S13, S37, S146, S188, S214, S256
 Pecoraro G S148
 Pedersen L S104
 Pedraza Sanz R S85, S86
 Pedregal P S67
 Pedrosa L S107
 Pedroto I S24, S95, S106
 Pekárek B S58
 Pelaez-Serra N S5
 Pelajić S S199, S257
 Pelkonen O S262
 Pellat A S31
 Pellegatta G S7, S15, S47, S74, S81, S156
 Pellegrino MG S11
 Pellegrino R S278
 Pellino G S104
 Pellisé M S20, S56, S136, S154
 Pemaj X S248
 Penagini R S10, S35, S70, S111, S222
 Penalva JC S140
 Peñas B S56
 Peñas García B S134
 Peñas García B S201
 Peñas-García B S14
 Penas-Herrero I S61
 Peñas-Herrero I S59
 Pennazio M S10
 Pentilas N S239
 Penz D S137
 Pereira Correia F S239, S279
 Pereira P S12, S69, S192, S223
 Perez Alvarez G S239
 Perez Arellano E S132, S169
 Pérez-Carazo L S85, S86
 Pérez Citores L S258, S275
 Perez-Cuadrado-Robles E S11, S84, S240
 Pérez-Cuadrado-Robles E S33
 Pérez D S14
 Pérez-Millán A S85
 Pérez-Millán A S86
 Pérez Millán AG S275
 Pérez Millán AG S258
 Perez-Miranda M S5, S15, S31, S60, S61, S85, S86, S216, S273, S286
 Pérez-Miranda M S59, S83, S224
 Pérez Pedrosa A S56
 Pérez Pérez J S132
 Perez Vidal L S239
 Perini R S255
 Perlmutter B S48
 Perren J S255
 Perri F S36
 Perri V S60, S71, S97, S236, S244, S245
 Perrod G S33, S34, S84, S89, S240
 Persyn D S182
 Pesatori EV S169, S170, S185
 Pesenti C S12, S235
 Pessaux P S236
 Petraki S S239
 Petroff D S54
 Petrone MC S28, S114, S211
 Petruzzello L S27, S121, S278
 Pevere S S213
 Pezzoli A S11
 Pham KD-C S200, S240
 Phillpotts S S70, S153
 Piagnani A S259
 Piątkowski J S126, S228, S229
 Piazza A S97
 Picascia D S155
 Piccerelli S S34
 Picciarelli S S169, S170, S185
 Piccoli G S218
 Picohe M S6
 Picó MD S140

Pico Sala MD S131
 Piepel C S182
 Pierick M S16
 Piessevaux H S9
 Pigò F S124, S235
 Pijnenborg N S135
 Pijoan Comas E S46, S87, S133, S170, S203, S240, S251, S282
 Pijoan Comas M S89
 Pijoan E S101, S109
 Pilati S S135, S250
 Pilgram L S182
 Pillozzi E S79
 Pimentel-Nunes P S283
 Pinedo E S53, S192, S268
 Pinho J S147, S267
 Pinho R S33, S43
 Pinsk E S115
 Pinto B S279
 Pinto D S94
 Pinto Da Costa A S97, S122
 Pinto García I S86
 Pinto García I S85
 Pinto Pais T S99
 Pioche M S8, S23, S24, S57, S58, S64, S72, S73, S81, S88, S95
 Piotrowicz A S231
 Pires F S147, S267
 Pisani A S11, S155
 Pivetta G S79
 Pizarro A S56
 Plantener E S52
 Platos J S130
 Plevris J S33
 Plomteux O S21, S110, S128
 Podina N S243
 Pohl H S43
 Poiraud M S99
 Poizat F S12
 Pojoga C S217, S241
 Polanco R S266
 Polat G S140
 Polat YH S231
 Poletti V S74, S156
 Polishchuk S S281
 Polverini D S74
 Polymeros D S147
 Pompei G S134
 Ponce M S20, S56
 Ponchon T S8, S64, S88, S89
 Ponferrada Á S154
 Ponferrada Díaz Á S132
 Pons-Beltrán V S75, S162, S165
 Pons F S97
 Pons V S69, S194
 Ponte A S33, S43
 Pontecorvi V S55, S56, S65, S266, S274, S286
 Ponte S S95
 Ponz De Leon Pisani R S211
 Popescu A S236
 Popov V S160
 Poppers D S145, S156
 Porceddu S S110
 Portillo I S56
 Poszler A S26
 Potamianos S S181, S238, S272
 Potrusil M S240
 Pouw RE S40, S92, S93, S94, S109, S199, S204
 Poveda MJ S140
 Prachalias A S257
 Prades L S113
 Prajapati R S191, S220
 Pramhofer P S29
 Prata R S215
 Prat F S11
 Prayag P S133
 Prettin C S54
 Preux PM S88

Priadko K S278
 Prieto Aparicio JF S275
 Prieto C S69, S78
 Prifti S S248
 Prijic R S170
 Primavesi F S83
 Prinz F S39, S54, S276
 Probst A S39, S67, S175
 Proença IM S55, S150, S234
 Proença L S43
 Pruthi RK S46
 Pruvost-Couvreux M S50
 Psichos N S236
 Psistakis A S81, S122, S211, S238, S239
 Puga-Tejada M S78, S89, S100, S114, S172, S173
 Pugliese N S15
 Puig-Diví V S67, S163
 Puig González M S279
 Puig I S14, S56
 Puig M S13, S136
 Pujals MdM S163
 Pujari R S7, S62, S101, S225
 Pujol-Vila L S110
 Pullens P S41
 Puñal Vidal L S282
 Purpura P S134

Q

Qaider H S205
 Qayyum F S255
 Quadarella A S169
 Queirós P S104
 Queneherve L S8
 Quénéhervé L S50, S152
 Quintana S S254
 Quispel R S184, S245, S246

R

Radaelli F S25
 Radouane I S131, S237
 Rafael de la Cruz D S266
 Raftopoulos S S106
 Raga A S254
 Ragi O S72
 Rahal D S248
 Rahman I S113
 Rahmi G S11, S34, S57, S58, S64, S84, S89, S152, S240
 Rajman I S78, S89
 Raimondo D S134
 Raina H S7, S62, S101, S133, S225
 Rainer J S20, S164, S190, S219, S263
 Rais K S180, S191, S200, S221
 Rajab T S177
 Rajan E S46
 Ramai D S12, S96, S102, S234
 Ramakers C S22
 Ramchandani M S224
 Ramírez Esteso F S176
 Ramirez-Luna MA S69
 Rami S S227, S264
 Ramis Estelrich MD S279
 Ramos G S167, S215, S243
 Ramos Martínez A S122
 Ramos R S283
 Ramos-Zabala F S14, S88
 Ramsoekh D S41
 Rancel Medina F S258, S275
 Randel KR S36
 Rara M S40
 Rasschaert G S280, S283
 Rath T S16, S18, S26, S63
 Ratiu I S236
 Ratone J-P S12, S57, S58, S235
 Ravindran S S44, S46, S171
 Ravizza D S286
 Razpotnik M S13, S37, S146, S188, S214, S256
 Reboux N S50

Reddy DN S96
 Reddy N S84, S224
 Redelsperger B S29
 Rednic V S217, S241
 Redondo-Cerezo E S32
 Reffitt D S257
 Regner S S101
 Reijm A S14
 Reinehr R S67
 Rejchrt S S158
 Rekab R S142, S210
 Relea Pérez L S273
 Renduo S S80
 Reñé Espinet JM S46, S170, S282
 Reñe JM S101
 Reni M S211
 Repici A S7, S15, S19, S25, S27, S28, S44, S47, S70, S74, S81, S87, S93, S102, S113, S156, S164, S171, S224, S248
 Repiso A S109
 Reshef A S115
 Resina E S130
 Resina Sierra E S275
 Revés J S74, S131
 Rey SBlanco S214
 Rhead C S172
 Ribas PHBV S55
 Ribeiro IB S234
 Ribeiro Jordao Sasso JG S194
 Ribeiro Jordão Sasso JG S201, S275
 Ribeiro PJ S118
 Ribeiro T S9, S69, S90, S112, S165, S184
 Riccioni ME S33, S34, S152
 Ricci R S97, S236
 Richardson W S255
 Rimondi A S10, S18, S34, S35, S111, S259
 Rinaldi P S54
 Rinaldi R S250
 Ringström G S105
 Rio-Tinto R S68
 Rivero L S154
 Rivero Sánchez L S20
 Rivero-Sánchez L S14, S280
 Rivory J S24, S64, S73, S88, S89
 Rizkou J S189
 Rizos E S147
 Rizza S S241, S242
 Rizzatti G S11, S87
 Rizzi F S71, S242
 Rizzo G S201
 Robaszkievicz M S50
 Robert M S235
 Robertson A S34
 Robert T S197
 Robles de la Osa D S258, S275
 Robles-Medranda C S12, S78, S87, S89, S100, S114, S166, S172, S173
 Rocchi C S54
 Rocha M S243
 Rocha RSdP S150
 Rockenbauer L-M S51, S73, S137
 Rocq L S8
 Rodias M S232, S272
 Rodrigues A S33, S43
 Rodrigues C S147, S267
 Rodrigues J S43
 Rodrigues-Pinto E S12, S81, S192, S223
 Rodrigues R S29
 Rodríguez Angulo A S69, S261, S262
 Rodríguez De Santiago E S134
 Rodríguez de Santiago E S109, S201
 Rodríguez-de Santiago E S14
 Rodríguez-Díaz JC S155
 Rodríguez D'Jesús A S150
 Rodríguez García MI S132, S169
 Rodríguez González M S176
 Rodríguez I S69, S214
 Rodriguez J S78, S89, S100, S172, S173

- Rodríguez JL S97
 Rodríguez M S97
 Rodríguez Mendiluce I S82
 Rodríguez Mendiluce I S102
 Rodríguez-Monaco F S119
 Rodríguez Paya P S277
 Rodríguez-Prada I S150
 Rodríguez Sánchez-Migallón J S14
 Roger Ibáñez M S262
 Rogers P S22
 Rojo Aldama E S275
 Rokhsi S S116, S117, S131, S133, S141, S144, S203, S208, S212, S237, S242, S263, S280
 Romano M S278
 Roman S S8
 Romeo S S25
 Romero B S150
 Romero C S78
 Römmele C S173, S182
 Rondonotti E S25, S33, S34
 Rosa B S10, S33, S61, S163, S261, S285
 Rosa I S119, S195
 Rosa Rizzotto E S25
 Rosa-Rizzotto E S222
 Rosch T S15
 Roseira J S104
 Rosendahl J S173
 Rosinach M S136
 Rosinach Ribera M S203
 Rosón PJ S7
 Rosón-Rodríguez PJ S14
 Rosselli M S148
 Rossi F S134
 Rossi G S211
 Rossignol G S73
 Rossoni G S265
 Rostain F S88, S89
 Rouibaa F S116, S117, S131, S133, S141, S144, S174, S201, S203, S208, S212, S237, S242, S263, S280
 Rouilla F S174
 Rouquette A S31, S57, S58
 Rousseau M S215
 Rouvinov K S115
 Roy J S247
 Røyset ES S18
 Ruiz-Clavijo D S97
 Ruiz F S97, S226, S235
 Ruiz Gómez F S69, S261, S262
 Ruiz-Gómez FA S69
 Ruiz-Osuna S S5
 Ruiz P S163
 Rullan M S97
 Rupiński M S32
 Russell R S166
 Russo S S124, S235
 Rusu I S217, S241
 Ruta V S211
 Rüthrich MM S182
 Rutter M S22
 Rutter MD S42
 Ryan B S260
 Ryan C S159
 Rycroft E S207
 Ryhlander J S105
- S**
 Saad M S206
 Sabbah M S190
 Sacco M S48, S71, S87, S98, S225, S242, S254, S258
 Sacdalan D S136
 Sacdalan DB S136
 Sadik R S213, S230
 Sáenz-López S S191
 Sætran H S200
 Sáez Fuster J S277
 Sáez Fuster J S131, S143
 Safer L S139
 Saftoiu A S189, S243
 Said SA-d S48
 Saiko M S189
 Sair A S116, S117, S131, S133, S141, S144, S174, S201, S203, S208, S212, S237, S242, S263, S280
 Saito Y S27
 Sakamoto H S111
 Sakano H S227
 Sakurai T S227
 Salces I S56
 Saldaña C S97
 Saleem A S213
 Saleh S S49
 Salem A S49
 Salim A S264
 Salmón P S69, S97, S253
 Salord S S5
 Saloustros E S137
 Salviato A S25
 Salvi D S170, S185
 Samanta J S6, S96, S107, S110, S220
 Samlani Z S189, S265
 Sánchez Ceballos F S78
 Sanchez-Chavez X S69, S259, S262
 Sanchez-Delgado L S15, S273
 Sánchez-Delgado L S224, S269
 Sanchez Dominguez L S239
 Sánchez FJ S154
 Sánchez Gómez F S266
 Sánchez-Gómez F S191, S219
 Sánchez-Hernández E S85, S86
 Sanchez-Jara V S81
 Sanchez L S215
 Sanchez Luna S S49
 Sánchez-Luna SA S55, S201
 SÁNCHEZ-LUNA SA S285
 Sánchez-Montes C S75
 Sanchez-Ocana R S59, S60, S61, S224, S273, S286
 Sanchez-Ocaña R S215
 Sánchez-Ocaña R S31, S83
 Sanchez Romero I S122
 Sanchez-Yague A S11
 Sánchez-Yagüe A S14
 Sánchez-Yuste MR S13
 Sanchiz V S85, S86
 Sanders DS S10, S35
 San Juan M S78
 San Juan M S20
 Sanllorente M S5
 Santander C S275
 Santander Vaquero C S130
 Santiago García J S81
 Santiago García J S89, S134
 Santiago J S13, S121
 Santonja FJ S17
 Santos AL S267
 Santos-Antunes J S67, S88, S94, S121, S267
 Santos Fernández J S258, S275
 Santos Perez E S97, S122
 Santos Pérez E S81, S243, S273
 Santos Santamarta F S258, S275
 Saragoni L S123
 Saraiva R S215
 Saraiva RO S243
 Saraiva S S99, S158, S229
 Sargatal L S56
 Sarkar A S89, S224
 Sarmento Costa M S175, S244
 Sasidharan Nair S S25
 Sassatelli R S25, S117, S118, S222
 Satai M S60, S208
 Satorres C S75
 Sattin E S211
 Saul-Perez A S69
 Saurin JC S34
 Sauri T S107
 Savio A S265
 Sayyed M S96
 Sbrancia M S29, S123, S265
 Scalisi G S165
 Scapa E S48
 Scaramella L S10, S34, S35, S111, S222, S259
 Scardino G S25
 Schachschal G S15
 Schaefer M S11, S23, S88, S89, S137, S216
 Scheer S S95
 Scheeve T S90, S183
 Scheffer B S41
 Schenk BE S93, S204
 Schepis T S244
 Scheppach MW S39, S175
 Schepp W S54
 Schiemer M S175, S194, S197
 Schillaci D S165
 Schils M S283
 Schirra J S67, S75, S215
 Schlag C S92, S113, S215, S226, S238
 Schlittenbauer T S173
 Schlottmann J S39, S202
 Schmid R S245
 Schmid RM S26, S63, S156
 Schmidt A S114, S175, S194, S197
 Schmidt PN S220
 Schmitz L S215, S219
 Schneider M S219
 Schnoy E S8, S54, S192, S226, S237, S276
 Schoepfer A S12, S235
 Schöffl R S29
 Schoon E S94
 Schoon EJ S79, S90, S92, S93, S183, S204
 Schoonjans C S37, S38, S77, S151
 Schrauwen RW S135
 Schreuder R-M S90, S135, S183
 Schuermans A S182
 Schult AL S36
 Schultheiss M S175
 Schulz C S75
 Schulz D S245
 Schumacher B S215
 Schutz HM S184, S245, S246
 Schwacha H S175
 Schwamberger T S39
 Schwartz D S115
 Schweizer U S176
 Sciarretta M S60, S61, S83, S273
 Sciberras M S34
 Scidà G S278
 Scimeca D S53, S246, S282
 Scrivo B S53, S246, S282
 Sebastian B S247
 Sebastian DB S247
 Sebastian S S247
 Seddik H S116, S117, S131, S133, S141, S144, S174, S175, S201, S203, S208, S212, S237, S242, S263, S280
 Seerden T S16
 Seewald S S92, S199
 Sehgal V S38
 Seicean A S217, S241
 Seip B S36
 Sekharan A S96
 Selva A S163
 Sendino O S20, S107, S109, S110
 Sengupta S S247
 Şenkal IV S260
 Sentissi S S131, S133, S174, S201, S237
 Seoane A S20, S109, S146
 Seo D-W S217
 Sereni G S25
 Serrano Dueñas M S176

Serrazina J S281
 Sethia M S191, S220
 Seth V S249
 Sette C S211
 Seufert J S54
 Seufferlein T S205
 Seward E S92, S158
 Sewnaik A S206
 Sferrazza S S70, S88, S94, S165, S202, S284
 Sgouros S S272, S273
 Shabana H S206, S266
 Shafazand M S127
 Shah E S145
 Shaheen NJ S93, S204
 Shah H S49
 Shahid H S89, S224
 Shah J S6
 Shah M S274
 Shahraz I S158
 Shah SL S49
 Shaib Y S120
 Shaikh T S134
 Shalaby S S49
 Sharara AI S120
 Sharma A S149
 Sharma P S27, S47, S156, S171
 Sharp L S22
 Sheehan K S120
 Sheridan J S42, S63
 Sherman S S224
 Sheykman G S218
 Shibolet O S48
 Shi C S80
 Shichijo S S66
 Shiha M S181
 Shiha MG S100, S176, S177
 Shiina O S5
 Shim J S168, S177
 Shinin Merchan MF S66, S177, S223
 Shinmura K S166
 Shirin H S186, S187
 Shnell M S48
 Shukla A S60, S208
 Siau K S17, S139
 Sidhu R S10, S34, S35
 Siersema P S14, S186, S187, S215, S219
 Siersema PD S135, S160
 Siggens K S25, S27, S125, S178, S189
 Sikkema M S41
 Silva A S147, S158, S267
 Silva de Paula Rocha R S201
 Silva JC S43
 Silva MJ S167
 Silva R S167
 Silvestre Egea G S243
 Silvino do Monte Junior E S28, S201, S223, S275
 Silvino Do Monte Junior E S53, S177, S194, S285
 Sim JY S158
 Simões G S215, S243
 Simonnot M S23
 Simon R S48
 Simons-Linares R S48, S255
 Sinagra E S134, S164, S165
 Sina M S248
 Singh A S35, S208, S209, S258
 Singh AP S207
 Singh H S49
 Singh J S96
 Singla A S49
 Singla N S207
 Sinonquel P S16
 Sirli R S236
 Skau Jørgensen B S104
 Skrlac I S170
 Slattery E S205
 Sloth S S16
 Smaoui H S202
 Smarandache B S35, S182
 Smith SCL S17
 Snajdauf M S193
 Snir Y S139
 Soares R S283
 Soberanis-Mukul RD S26
 Sochorova D S240
 Sola Vera J S69
 Sola-Vera J S146
 Sola-Vera Sánchez FJ S143
 Sola-Vera Sánchez J S131, S277
 Solitano V S156
 Solito S S213
 Solórzano-Pineda OM S259
 Song TJ S217
 Soriani P S20, S70, S164, S190, S219, S263
 Soru P S286
 Sosa-Valencia L S91
 So Taa Kum A S201, S275
 Soueid A S120
 Sousa Magalhães R S161, S163
 Sousa P S147, S267
 Soy G S107
 Spaander M S14, S22, S50, S51
 Spaander MC S206
 Spaander MCW S74
 Spaander MDW S92
 Spada C S27, S33, S34, S73, S169, S170, S185, S265
 Spadaccini M S7, S15, S25, S44, S47, S74, S81, S156, S171, S224, S248
 Spaggiari P S156
 Spanier MBW S74
 Spaun G S29
 Spicak J S193
 Sportes A S178
 Spulber A S241
 Šramková M S285
 Srinivasan P S257
 Sriskandarajah R S103
 Stachler MD S40
 Stack R S42, S63, S103, S122, S248
 Staiano MT S71, S98, S225
 Staiano T S241
 Stamou A S147
 Stasi E S96
 Stathopoulos P S59, S95
 Stecher M S182
 Stefanidis G S232, S272, S273
 Steinberg S S172
 Steinbrück I S39
 Steiner E S29
 Stein J S54
 Stephant S S24
 Stern N S83
 Steshenko A S106, S249
 Stigliano S S11, S87, S179, S249
 Stigliano V S216
 Stillitano C S155
 Stoker J S74
 Storm AC S46
 Stoyanov D S38, S92, S104, S158
 Straathof JW S135
 Straathof JWA S41
 Strehle A S137
 Stritzke B S114
 Struik F S108
 study group P ESA S101
 Study Group S TIER S182
 Stupnytskyi A S125
 Sturgess R S83
 Sturm N S205
 Suárez A S146
 Suarez P S53
 Subhaharan D S282
 Subramaniam S S25, S90, S125, S178, S189
 Subtil JC S86
 Súbtíl JC S85
 Sudarevic B S91
 Suki M S115, S135
 Sultan A S210
 Sunada K S111
 Sunakawa H S166
 Sundaram S S60, S208, S249, S258
 Sung Yi Sim E S161
 Suria C S85, S86
 Surlin V S243
 Susan Roy DJ S247
 Swanstrom L S91
 Szalai M S261
 Szmit M S32

T
 Taamouch Z S126, S264
 Tababi R S179, S193, S203, S271, S281
 Tabak F S250
 Tabbabi R S270
 Tacelli M S211
 Tacheci I S285
 Tag-Adeen M S142
 Tahri N S202
 Taiymi A S126
 Takashima K S166
 Takenaka M S62
 Takeuchi Y S66, S271
 Takishima K S5
 Takoh K S25
 Tamanini G S25
 Tammouch Z S180, S200, S212, S221
 Tamzaouret M S117
 Tanasescu A S25
 Tandberg P S5
 Tang TJ S93, S204
 Tan Qr S161
 Taormina D S134
 Tarantino I S11, S70, S134
 Tarasenko L S281
 Tareen K S134
 Tarhini H S120
 Tartaglia N S12
 Tasini E S94
 Taskin OC S25, S88
 Tate D S38, S77, S151
 Tate DJ S37
 Tato Marinho R S190, S281
 Tatu A S238
 Tavares de Sousa H S104
 Taylor J S149, S180
 Tebe Cordomi C S5
 Tejedor-Tejada J S109, S269
 Tejerina E S209
 Temiño López-Jurado R S203
 Temiño R S136
 Temizel A S140
 Teo E-K S160, S180
 Terán Á S85, S86
 Teran-Lantaron A S5
 Terán-Lantarón Á S14
 Terhaar sive Droste J S50
 Terhaar sive Droste J S135
 Terhaar Sive Droste JS S74
 Terracciano LM S156
 Terreni N S25
 Terrin M S74
 Terris B S31, S57, S58
 Terroba Alonso M S239
 Testai S S134
 Tettoni E S170, S185
 Tham S S180
 Thelin Schmidt P S185
 Themistocleous E S239
 Theodoropoulou A S122, S167, S238
 Theopistos V S236
 Thijsen A S90, S183
 Thimme R S175
 Thomas-Gibson S S44, S46, S171
 Thomas T S177

- Thomeer MGJ S74
 Thomopoulos K S181
 Thoufeeq M S22, S100, S142, S181, S274
 Tielleman T S49
 Tijssen M S41
 Tishkov I S105, S193, S229, S250
 Tjora E S200
 Tkachov V S106, S249
 Toes-Zoutendijk E S22
 Togliani T S11, S135, S250
 Tølbøll T S166
 Tomás H S17
 Tomašić V S199
 Tomáš M S231
 Tontini GE S10, S17, S18, S33, S34, S35, S111, S222, S259
 Topala M S251
 Topal B S107
 Topal H S107
 Topa M S10, S111
 Tormo B S121
 Tormo Lanseros B S89, S285
 Torrealba L S142
 Torrealba Medina L S168
 Torres Monclús MN S282
 Torres Monclús N S203
 Torres Monclús N S87, S133, S240, S251
 Torres N S101
 Torres Vicente G S46, S87, S133, S170, S203, S240, S251, S282
 Torrisi S S86
 Tort I S162, S165
 Toth D S38, S92, S158
 Toth E S34, S185
 Touibi A S116, S117, S131, S133, S141, S144, S203, S208, S212, S237, S242, S263, S280
 Tourlakopoulos K S272
 Toussaint E S59
 Trad D S190
 Trad N S124, S251, S256, S257
 Traidl-Hoffmann C S173
 Traina M S113
 Trajkovska M S253
 Tralhão G S244
 Trashkova N S106
 Trauner M S51, S74, S137
 Traversi N S140
 Trelles M S56
 Triantafyllou K S34, S102, S147, S181, S234
 Tribonias G S284
 Trikola A S198, S232, S262, S272, S273
 Tringali A S60, S70, S71, S97, S99, S218, S236, S244
 Trinh A S106
 Tripodi G S252
 Troncone E S70, S252
 Trosc-Ivanisevic T S235
 Trovato C S286
 Troya J S91, S188
 Trudgill N S22
 Tsatsa A S198, S262
 Tsevgas I S107
 Tsoukalas N S232, S272, S273
 Tudela Y S154
 Tuncer I S205, S254
 Tuncer I S253
 Turan AS S135
 Turcu-Stiolica A S189
 Turiani Hourneaux de Moura D S28, S53, S194, S201, S223, S275, S285
 Turiani Hourneaux De Moura E S194
 Turró Arau R S203
 Turro R S136
 Tyagi U S249
 Tyberg A S89, S224
 Tzadok R S48
 Tzakri M S197
 Tzampouras N S237
 Tziatzios G S102, S181
- U**
- Uceda Porta F S85, S86
 Uceda Porta FE S143
 Uchima H S13, S88, S136, S154, S279, S283
 Uchima-Koecklin H S14
 Udristoiu AL S243
 Udristoiu S S243
 Uedo N S66, S271
 Ullah A S226
 Umar M S213
 Ungureanu BS S189
 Urak C S13, S37, S146, S188, S214, S256
 Uraoka T S17
 Urban O S112
 Uribarri L S69, S82, S102
 Urman J S82
 Urman JM S97
 Urpi-Ferrera M S69
 Uter W S16
- V**
- Vackova Z S193
 Vadalà di Prampero SF S54
 Valdepeñas L S162
 Valdés-Lacasa T S266
 Valdivieso E S78
 Valdovinos-Andraca F S262
 Válek J S203
 Valentin Gomez F S89
 Valenza M S148
 Valerii G S143
 Valle G S211
 Valori R S37, S38, S77, S104, S151
 Valverde-López F S32
 van Berge Henegouwen MI S109
 van Berkel A-M S41
 Vanbiervliet G S23, S71, S152
 van Bronswijk M S112
 van de Meeberg P S41
 van den Ban SA S206
 Van Den Neste E S280
 van der Bogt R S14
 van der Ende-van Loon MC S79, S183
 van der Hulst RWM S41
 van der Meer J S41
 van der Merwe S S73, S112
 Van der Merwe S S11, S107
 Van Der Merwe S S182
 Vandermeulen L S283
 van der Schee L S58
 van der Sommen F S79, S90, S183
 Van Der Vlugt M S51
 van der Zander QE S79, S90, S183
 van der Zander QEW S41
 Van De Schootbrugge-Vandermeer H S22
 van de Ven SE S206
 van de Vondervoort S S219
 van de Vrie W S41
 van de Wetering AJP S41
 Vandrope A S59
 van Driel L S14
 van Driel LM S83, S184, S219, S245, S246
 Vanella G S28, S73, S112, S114
 van Engeland M S41
 van Geenen E S215
 Van Geenen EJ S135
 Van Haren M S102
 van Heel N S41
 van Hooft J S47, S84, S108, S227
 van Huijgevoort N S47, S84, S108
 Van Kemenade F S22
 van Keulen K S187
 Van Laethem J-L S196
 van Lanschot M S41
 Van Leerdam M S22, S51
 van Leerdam ME S41
 van Malenstein H S73, S107, S112, S182
 van Mulligen PG S41
 van Munster SN S93, S204
 Van Ouytse P S68
 Van Oytse P S65
 van Putten P S157
 van Riswijk M S187
 van Santvoort H S47
 van Tilburg L S206
 van Toledo D S51
 Van Toledo D S22
 van Velthuysen M S245, S246
 Van Vuuren A S22
 van Wanrooij R S84, S112
 van Wanrooij RL S73
 van Wanrooij RLJ S11
 van Wifferen F S41
 Vaquero E S154
 Vaquero EC S107
 Vardas E S122, S211, S238, S239
 Vardhan Tewethia H S84
 Vargas A S101
 Vargas E S49
 Vargas García A S46, S87, S133, S170, S240
 Vargas García AL S109
 Vargas Gonzalez CA S239
 Vargas Valls EJ S46
 Varghese S S123
 Varnai-Händel A S119
 Vasapolli R S75
 Vasileiadis K S272, S273
 Vásquez Seoane M S125
 Vauquelin B S8
 Vazquez Benitez GT S285
 Vazquez Gomez D S203, S251, S282
 Vázquez Gómez D S87, S133
 Vazquez-Sequeiros E S5, S11, S85, S86, S201
 Vecchi M S10, S35, S111, S222, S259
 Vega R S92, S158
 Velasco MD S136
 Velasquez-Rodriguez J S252
 Velásquez-Rodriguez J S53
 Velasquez-Rodriguez JG S5, S195
 Velegriaki M S81, S122, S137, S167, S211, S238
 Venezia L S70
 Venti E S216
 Ventimiglia M S164
 Ventura S S147, S267
 Vera Intriago JM S66, S177, S223
 Vera Mendoza M S273
 Vera Mendoza MI S122
 Verbeek R S41
 Verdonk R S219
 Veretanos C S167, S262
 Verhagen M S41
 Verheij EPD S93, S204
 Verheij J S84
 Vermeire S S16
 Verset D S59
 Verset L S8, S24, S62, S99, S196, S280
 Verveer C S50
 Vespa E S7, S15, S171
 Viale E S45, S72, S117
 Viazis N S167, S198, S262
 Viciano M S13, S279
 Vidal I S116
 Vidaurre A S162, S165
 Vieceli F S202
 Vieira M S147
 Vienna E S262
 Viesca Y S8, S59
 Vieth M S18
 Vigia E S243
 Vignesh S S160
 Vila-Costas JJ S5

Vila J S7
 Vila JJ S11, S69, S82, S97, S102, S214, S253
 Vilardo E S70
 Vilariño G S162, S165
 Vilas-Boas F S12, S69, S87, S267
 Vilchez Vilchez M S143
 Vilella Martorell A S85, S86
 Villa JC S154
 Villanacci V S18
 Villanueva Pavón R S85, S86
 Villa Poza JC S132
 Villarreal-Sanchez L S87
 Villarroel M S15
 Vilmann P S87
 Vinagre-Rodríguez G S81
 Vinson M S137
 Vitali F S16
 Vitek P S130
 Vitello A S164, S165
 Vitton V S6, S71, S72
 Vives J S163
 Vix M S236
 Vlad AM S204
 Vleugels JL S157, S186
 Voces A S162
 Voermans R S84
 Voermans RP S73
 Voermans RP S83, S112, S219
 Voiosu A S35, S182, S253
 Voiosu R S253
 Voiosu T S253
 Voiosu TA S35, S182
 Vokh V S125
 Volkanovska Nikolovska A S253
 Voudoukis E S122, S223, S238
 Vrontaki M S223
 Vulić I S257
 Vulpoi R S153
 V VR S260
 Vyas A S70

W

Wagner A S88
 Wagner M S205
 Wakamura K S26
 Waldmann E S51, S73, S137
 Waldner M S16
 Walker C S167, S260
 Wallace MB S47
 Wallenhorst T S8, S23, S24, S57, S58, S64, S88, S89, S95
 Wallstabe I S67
 Walsh M S48
 Walter B S26, S39, S113, S205
 Walter L S182
 Wang J S31, S32, S184
 Wani S S35, S182
 Warner B S231
 Watanabe D S227
 Watson AJM S163
 Watson E S207
 Weber A S238
 Weber-Eibel J S13, S37, S146, S188, S214, S256
 Weber T S237
 Webster G S70, S153

Wedi E S113
 Weismüller T S215
 Werge MP S220
 Westerhof J S92, S93, S204
 Weusten B S41
 Weusten BL S94
 Weusten BLAM S92, S93, S204
 Wewalka F S29
 Wichmann D S176
 Wiedbrauck F S33
 Wielenga M S227
 Wientjes CA S41
 Wiesner JR S226
 Wieszczy P S5
 Wilhelm M S40
 Willekens H S16
 Willems M S41
 William K S108
 Williams R S160
 Williams S S5, S138
 Wilson P S178
 Winkens B S79, S183
 Wisse P S50
 Wong T S231
 Wookey L S176
 Woolley M S282
 Working Group on D SEE S46
 Working Group on Sedation D SEE S170
 Wu H S62, S186
 Wu L S31, S80, S267
 Wurm Johansson G S33, S152, S185

X

Xavier S S10, S163, S207, S261, S285
 Xiao T S80

Y

Yaacob N S84
 Yadav A S205
 Yadav Td S6
 Yakoob R S275, S276
 Yakoubi M S222
 Yamada M S27
 Yamamoto H S111
 Yamamoto K S284
 Yamamoto S S63, S66, S127, S138, S271
 Yanai H S139
 Yang D S87
 Yang L S282
 Yano T S111, S166
 Yao L S62, S80, S98, S124
 Yared R S59, S65, S196
 Yavuz A S205, S253, S254
 Yee B S255
 Yeralagada R S96
 Yeung R S102
 Yoda Y S166
 Yong KK S103
 Yoon J S168
 Yoon JH S272
 Yoon JY S138
 Yoshiyuki K S94
 You H-S S82
 You HS S67, S128, S272
 Yousaf MS S134

Yousef T S49
 Yousef MM S226
 Yu H S31, S32, S39, S62, S77, S80, S98, S124, S184, S186, S267, S282
 Yuki Yvamoto E S28
 Yvamoto EY S53, S55, S285

Z

Zabalza L S97
 Zaccari P S211
 Zachariadis D S107
 Zacherl M S41
 Zaera C S154
 Zaffalon D S20, S56
 Zagari RM S11, S155
 Zaghloul M S49
 Zagni I S265
 Zair Y S264
 Zakcharchuk A S106, S249
 Zakhama M S138
 Zamora Nava LE S262, S263
 Zamora-Nava LE S69, S259, S262
 Zampeli E S197
 Zano F S136
 Zaouga S S138
 Zapater P S42, S140
 Zaragoza Velasco N S46, S87, S101, S133, S170, S203, S240, S251, S282
 Zardo D S18
 Zazour A S126, S180, S191, S198, S200, S209, S212, S221, S228, S232, S264, S272
 Zebenzuy A S109
 Zeeaeert J-B S64
 Zellenrath P S14
 Zellmer S S173, S182
 Zelnik Yovel D S48
 Zeng X S282
 Zeng Z S32
 Zenk J S173
 Zerbib F S8
 Zerboni G S73
 Zerouali K S269
 Zessner-Spitzenberg J S51, S73, S137
 Zhang C S98, S267
 Zhang C-Z S40
 Zhang F S250
 Zhang L S39, S62, S80
 Zhang N S149, S180
 Zhecheva I S193, S229
 Ziahehebi A S29
 Zieliński M S228
 Zilli M S213
 Zine El Abidine F S138
 Žitňan L S58
 Ziv Baran T S48
 Žorniak M S32
 Zorzi M S30, S51
 Zucchi E S213
 Zulli C S70
 Zullo A S64, S153
 Zumblick M S59, S95
 Zvereva A-M S26
 Zwager LW S95, S114
 Zwinderman A S40

Endoscopy

Copyright & Ownership

Unless otherwise stated: © 2022. Thieme.
All rights reserved. The journal *Endoscopy* is owned by Thieme.
Georg Thieme Verlag KG,
Rüdigerstraße 14, 70469 Stuttgart, Germany
Volume 54
Endoscopy is published in 12 issues per year.
ISSN (Print): 0013-726X
eISSN: 1438-8812

Editor-in-Chief

Professor Peter D. Siersema, Dept. of Gastroenterology and Hepatology, (room 1.24), Radboud University Medical Center, P.O. Box 9101, 6500 HB Nijmegen, The Netherlands.
The editors are not responsible for the advertisements and supplements contained in the journal.

Publishers

Georg Thieme Verlag KG
Rüdigerstraße 14, 70469 Stuttgart or
P.O.Box 301120, 70451 Stuttgart
phone +49 711 8931-0, fax +49 711 8931-298
www.thieme.de/fz/endoscopy
Web-App: www.thieme.de/eref-app
Editorial staff at the Georg Thieme Verlag is available via:
endoscopy.impressum@thieme.de, V.i.S.d.P.:
Sabine Görlich-Gündüz, Rüdigerstraße 14,
70469 Stuttgart

Advertising

Thieme Media
Pharmmedia Anzeigen- und Verlagsservice GmbH
Christine Volpp, Rüdigerstraße 14, 70469 Stuttgart or P.
O.Box 300880, 70448 Stuttgart
phone +49 711 8931-603, fax +49 711 8931-470
e-mail: Christine.volpp@thieme-media.de

Production management

phone +49 711 8931-883, fax +49 711 8931-393
e-mail: sarah.schenkel@thieme.de

Subscription information

Subscribers are asked to inform the publisher immediately in case of address changes in order to ensure correct delivery of the journal.
phone +49 711 8931-321, fax: +49 711 8931-422
e-mail: customerservice@thieme.com
The scientific text of this journal is available online through Thieme-connect, <http://www.thieme-connect.de>. Access to Thieme-connect is free of charge for personal subscribers.
All subscription orders are entered for the calendar year. The rate of subscription is invoiced in advance at the end of the year for the following year and becomes due for payment for the full calendar year. Subscriptions can be started anytime. Subscriptions are automatically extended each year unless notice of cancellation is received from the subscriber prior to September 30 of each year (applies to Germany, Switzerland, Austria only).
For information concerning licenses and prices for institutional access, please contact:

For customers in Germany, Austria, Switzerland Thieme Gruppe

Institutional Sales, Rüdigerstraße 14
70469 Stuttgart, Deutschland
phone: +49 711-8931-407, fax: +49 711-8931-794
e-mail: esales@thieme.de

For customers in Europe (excluding Germany, Austria and Switzerland), Africa, Asia (excluding South Asia), Australia

Thieme Gruppe, Institutional Sales, Rüdigerstraße 14
70469 Stuttgart, Germany
phone: +49 711-8931-407, fax: +49 711-8931-794
e-mail: esales_row@thieme.de

For customers in the US, Canada, Mexico, Central and South America

Thieme Medical Publishers, Inc., Institutional Sales
333 Seventh Avenue, New York, NY 10001
United States
phone: +1-800-782-3488 (Toll-free in US only)
phone: +1-212-760-0888, fax: +1-212-947-0108
e-mail: l: esales_tny@thieme.com
Airfreight and mailing in the USA by Sheridan Press, 450 Fame Avenue, Hanover, PA 17331. Periodicals postage paid at New York, NY and additional mailing offices. Postmaster: Send address changes to European Journal of Pediatric Surgery, Thieme Medical Publishers, Inc., 333 Seventh Avenue, New York, NY 10001.

For users in the USA

Authorization of photocopy items for internal or personal use, or the internal or personal use of specific clients, is granted by Georg Thieme Verlag Stuttgart. New York for libraries and other users registered with the Copyright Clearance Center (CCC) Transactional Reporting Service; www.copyright.com. For reprint information in the USA, please contact: journals@thieme.com

Product names

Product names which are registered trademarks may not have been specifically designated as such in every case. In case where a product has been referred to by its registered trademark it cannot be concluded that the name used is in the public domain. The same applies to labels, names or other signs.

Manuscripts

Impact Factor (2020): 10.093
Manuscript submission exclusively via:
<http://mc.manuscriptcentral.com/endoscopy>
For details regarding manuscript submission please refer to "Instructions for Authors": <http://endoscopy.thieme.com/about-the-journal>
In principle only papers will be accepted which have not been published previously, domestically or abroad. Furthermore, manuscripts may not be offered to other publications at the same time as they are under consideration for this journal.
The corresponding author will receive a PDF-file for private use.
Authors may choose to allow, for a fee, free general access to their papers online. For details, please contact endoscopy.impressum@thieme.de

Illustrations

Unfortunately, we cannot accept images already published in books, journals, or electronic products of other publishers. The reason: It is almost impossible to obtain the necessary rights of use even with payment of licensing fees. Therefore, please do not pay any licensing fees (e.g. to "RightsLink"/Copyright Clearance Center). Standard license contracts from "Creative Commons" are unfortunately also insufficient for our purposes. Contact us with any questions regarding the use of images.

Important note

Medicine is an ever-changing science undergoing continual development. Research and clinical experience are continually expanding our knowledge, in particular our knowledge of appropriate treatment and drug therapy. Insofar as this journal mentions any dosage or application, readers may rest assured that the authors, editors and publishers have made reasonable effort to ensure that such references are in accordance with the state of knowledge at the time of production of the journal. Nevertheless this does not involve, imply, or express any guarantee or responsibility on the part of the publishers in respect of any dosage instructions and forms of application stated in the journal. Every user is requested to examine carefully the manufacturers' leaflets accompanying each drug and to check, if necessary in consultation with a physician or specialist, whether the dosage schedules mentioned therein or the contraindications stated by the manufacturers differ from the statements made in the present journal. Such examination is particularly important with drugs that are either rarely used or have been newly released on the market. Every dosage schedule or every form of application used is entirely at the user's own risk and responsibility. The authors and publishers request every user to report to the publishers any discrepancies or inaccuracies noticed.

Data protection

Where required by data protection laws, personal names and other data are edited and either removed or pseudonymized (alias names). This is always the case with patients, their relatives and friends, partly also with other persons, e.g. those involved in the treatment of patients.

This journal, including all individual contributions and illustrations published therein, is legally protected by copyright for the duration of the copyright period. Any use, exploitation or commercialization outside the narrow limits set by copyright legislation, without the publisher's consent, is illegal and liable to criminal prosecution. This applies in particular to photocopy reproduction, copyright, cyclostyle, mimeographing or duplication of any kind, translating, preparation of microfilms, and electronic data processing and storage (CD-Rom, DVD, USB memory stick, databases, cloud-based service, ebook and other forms of electronic publishing) as well as making it available to the public (e.g., internet, intranet or other wired or wireless data networks), in particular by displaying on stationary or mobile visual display units, monitors, smart phones, tablets or other devices by download (e.g., e-pub, PDF, App) or retrieval in any other form.

Appreciative and gender-inclusive language

Thieme rejects any use of language which discriminates against people based on their origin, ethnicity, gender, religion, social affiliation, disability or sexual preference. Thieme addresses people of all gender identities equally. We encourage our authors to use gender-neutral or gender-equal expressions wherever the context allows.

Printed in Germany

Typesetting: seitenweise, Tübingen
Printer: Grafisches Centrum Cuno GmbH & Co. KG, Calbe (Saale)

Annual subscription rates 2022	Germany*	Europe**	USA	Outside USA	Africa, Asia, Australia, New Zealand
Institutional E-Only	€ 1428.00	€ 1428.00	\$ 1867.00	\$ 1867.00	€ 1428.00
Institutional Print + Online (includes single-site access)	€ 1458.00	€ 1458.00	\$ 1942.00	\$ 2022.00	€ 1458.00
Personal	€ 580.00	€ 580.00	\$ 641.00***	\$ 734.00****	€ 580.00
Shipping	€ 82.60	€ 89.90			€ 118.10
Members of some national societies will receive this journal as part of their membership.					
Single issue: 96.00 €*					
* Prices include appropriate VAT					
** Customers resident in the European Union (EU) will be charged appropriate VAT unless they supply their Value Added Tax identification number with their orders.					
*** USA/Canada					
**** Americas outside USA/Canada					

