



The Endoscopy report and quality assurance

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Key note

The endoscopy report is an integral part of the quality assurance policy in all endoscopic units. It is also a requirement in any process for hospital accreditation or certification in Europe. The production of an accurate endoscopy report using modern technology such as a standard classification method, a computerized system, and image and video recordings, is now possible in day-to-day clinical practice.

The European Society for Gastrointestinal Endoscopy (ESGE) would like to stress the importance of the endoscopy report for practitioners, hospital filing systems, and patients.

From the beginning of gastrointestinal endoscopy, a pitfall of the procedure has been inadequacies in the implementation of a practical and accurate reporting system. Written reports are often too short, too long, or impractical for collecting data. Some units use punctured-card recording systems developed 20 years ago in the United Kingdom and Japan but these are cumbersome. With the advent of the computer age, hopes of better recording have led only to huge disappointment, except in a few teaching hospital units which use accurate but time-consuming computerized endoscopic reporting systems.

Traceability requirements, the needs of healthcare providers, quality assurance, patients' requests, and, in some cases, fear of medical lawsuits, all oblige the endoscopic community to develop new software for standardized endoscopy reports. An electronic report has been developed in the United States by David Lieberman and the core group that is accurate, that allows data transmission from the hospital to the general practitioner or other medical services, and that collects data for cost-effectiveness assessment of gastrointestinal endoscopic procedures. This report also includes procedural details, such as the endoscope type, model, and number, accessories, and cleaning and disinfection procedures used.

The report

Apart from the usual administrative data, it is mandatory for each report to include the indication for the procedure, a description of how the examination was carried out, the results or diagnosis, and the suggested follow-up.

Indications

The indication should be listed in CIM10, the international classification for all medical examinations, for example:

1. Clinical indications: e.g. rectal bleeding, weight loss, screening

2. Medical history:

- Polyps classified according to the Vienna classification as adenoma or hyperplastic polyp
- Cancer
- Inflammatory bowel diseases
- Others

3. High colorectal cancer-risk patients:

- Polyp or carcinoma
- First-degree relative with colorectal cancer or familial polyposis
- Inflammatory bowel disease
- National mass screening program
- Request for individual screening
- Others

Administrative, technical, and procedural data

1. Patient data

2. Practitioner

3. Anesthesiologist

4. Assistant or registered nurse

5. Scope type and number

6. Disinfection procedure

7. Duration of the procedure

8. Description of the lesion:

- Location
- Size
- Chromoscopy
- Magnification
- Classification of the lesion

9. Therapeutic procedures:

- Biopsy
- Polypectomy (hot-biopsy, snare, clip)
- Endoscopic mucosal resection
- Endoscopic submucosal dissection
- Antibiotic prophylaxis
- Recorded data (still pictures or video)

10. Incidents or side effects

11. Immediate follow-up

Results or diagnosis

- 1. Final diagnosis**
- 2. Location of the lesion**
- 3. Number and location of polyps**
- 4. Histologic findings**

Medical follow-up

- 1. Medical treatment**
- 2. Surgery**
- 3. Long-term follow-up, e.g. 3-yearly repeat colonoscopy**

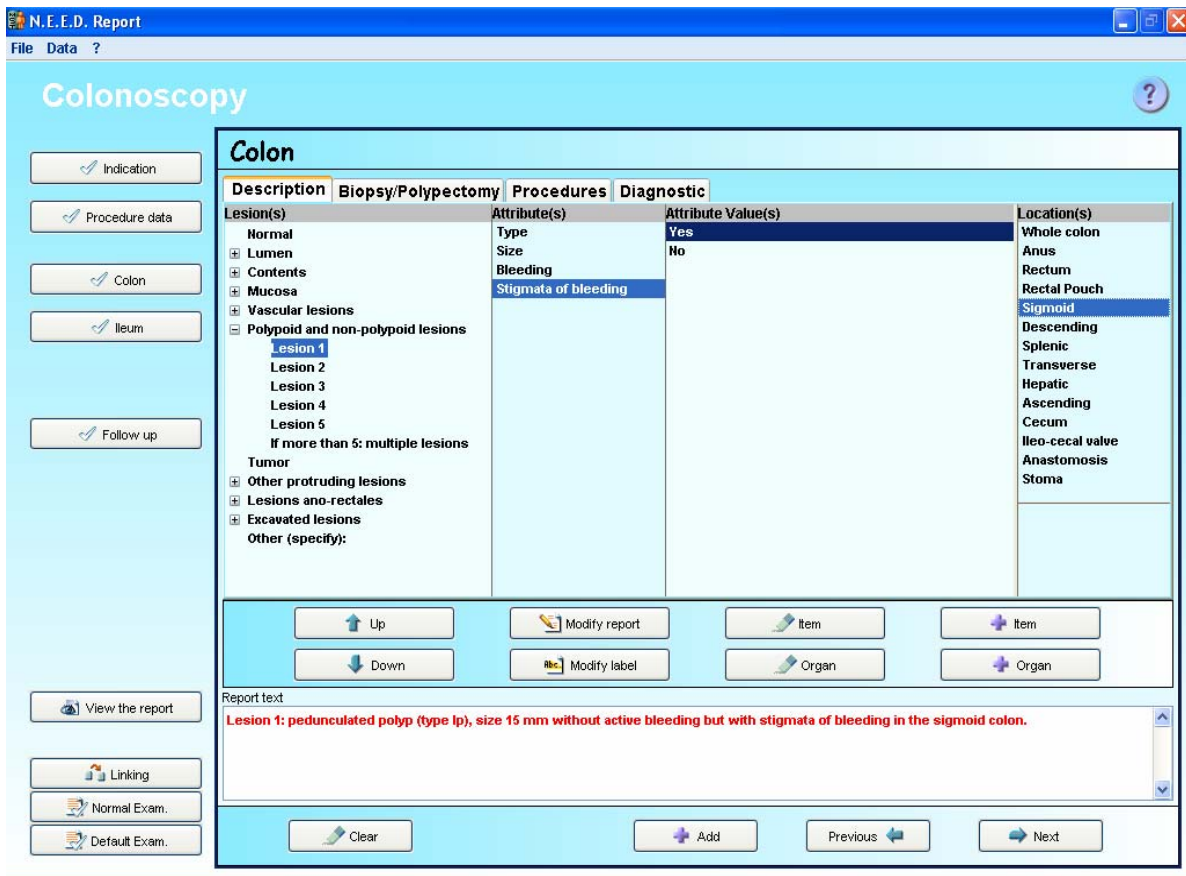
An example of this type of endoscopy report is shown at the end of this article.

Quality assurance and the endoscopy report

All reports should be based on the OMED (World Organization of Digestive Endoscopy) Minimal Standard Terminology (MST). This classification was introduced in Europe by ESGE (European Society for Gastrointestinal Endoscopy) and then implemented at an international level, thanks to the efforts of the working group, which included American colleagues (American Society for Gastrointestinal Endoscopy, ASGE) and Japanese endoscopists (Japan Gastroenterological Endoscopy Society, JGES).

All information based on the MST can be used for data collection, whether the report is written in English, French, Greek, Japanese, or in any of the adapted languages. The MST has been approved by national societies and is now available in 14 languages. The phrasing system allows reports to be produced for any of the items selected in the software. ESGE has set up a working group in order to develop new software compatible with MST. The Networked European Endoscopy Database (NEED) should allow data collection and production of an endoscopy report, and should be compatible with software already developed by Olympus (Endobase) and Fujinon (ADAM).

A French data-collecting company, CEGEDIM, has been associated with this project and was charged with developing French and English versions of the NEED software (the French version being known as "MEHGE"). The working group also produced proposals for a Version 3 of the MST in order to include newly developed endoscopic technical procedures. The French version (MEHGE) has been included in a general software program used by hepatogastroenterologists in order to complete data collection and could be included in the national project for a personal medical filing system for each French national. Data can be collected in any language in the NEED project for various units (example below) :



Storing images

The objective of the ESGE is to promote this practice in European countries and to make the images available for communication to the patient or to the endoscopist's colleagues (general practitioners or surgeons). The ESGE is now recommending that a minimal checklist of images should be introduced into the code of good practice.

How to take a correct endoscopic image

It is very easy to take multiple images using electronic video endoscopy. In order to obtain a correct image, practitioners should always:

- Clean the endoscopic lens if necessary.
- Avoid close lateral contact with the gastrointestinal mucosa, as this can cause over-illuminated areas ("blooming" effect).
- Markedly inflate the gastrointestinal lumen, then freeze.
- Repeat the freeze if the image is not totally satisfactory, and then store or print.

ESGE quality-control recommendations for an illustrated report on upper gastrointestinal endoscopy

It is important that reports on upper gastrointestinal endoscopy should include a certain number of images that will allow a check to be made that the esophagus, stomach, and duodenum have all been examined thoroughly. Electronic video endoscopy allows images to be taken easily during the endoscopic examination, using either a video printer or a system that captures images directly onto the computer's hard drive.

The ESGE proposes that eight images should be taken to illustrate the whole examination. Of course, complementary images should be taken in cases where a specific lesion is found or of the anastomosis in patients who have undergone surgery.

The eight anatomic locations the ESGE recommends recording in order to optimize the upper endoscopic examination report are shown in Figure 1 and described below.

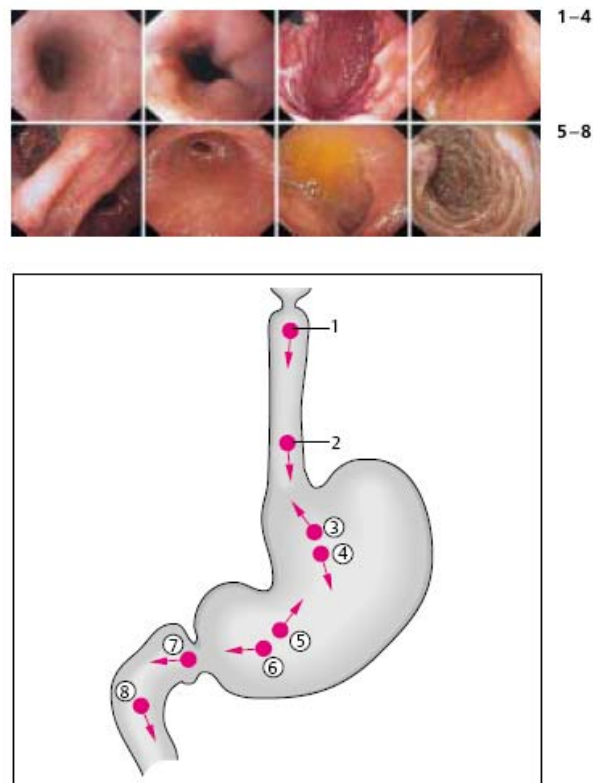


Figure 1

Image 1: Upper esophagus, taken about 20 cm from the incisors to obtain a forward-facing view of the esophagus.

Image 2: A point 2 cm above the squamocolumnar junction (Z line). This endoscopic image is particularly important for confirming that a careful study of this area has been carried out, and to locate anomalies accurately, particularly in cases of esophagitis or Barrett's esophagus.

Image 3: Cardia in inversion. An examination of the cardia in inversion allows visualization of the upper part of the fundus in inversion.

Image 4: Upper part of the lesser curvature. This image provides a good view after inflation of the upper part of the stomach (the fundus).

Image 5: Angulus in partial inversion. Positioning the endoscope in front of the angulus provides confirmation that a complete examination of the antrum, angulus, and fundus seen in inversion has been performed.

Image 6: Antrum. The whole of the antrum is visualized with this image, assuming that the angulus has just been examined as described above.

Image 7: Duodenal bulb. The image should be taken with the endoscope positioned on the bulbar side of the pylorus in order to see the entire bulb.

Image 8: Second part of the duodenum. This confirms that a complete examination has been performed, with the end of the endoscope positioned near the papillary area.

ESGE quality-control recommendations for an illustrated report on colonoscopy

It is important that reports on lower gastrointestinal endoscopy should include a certain number of images that will allow a check to be made that the whole of the colon has been examined thoroughly. Electronic video endoscopy allows images to be taken easily during the endoscopic examination, using either a video printer, or a system that captures images directly onto the computer's hard drive.

The ESGE proposes that eight images should be taken to illustrate the whole examination. Of course, complementary images should be taken in cases where a specific lesion is found. As far as the colon is concerned, it is often difficult for the operator to identify the exact position of the tip of the endoscope. The reference points given here are therefore approximate, with the exception of the ileocecal valve and the appendiceal orifice.

The eight anatomic locations the ESGE recommends recording in order to optimize the colonoscopic examination report are shown in Figure 2 and described below.

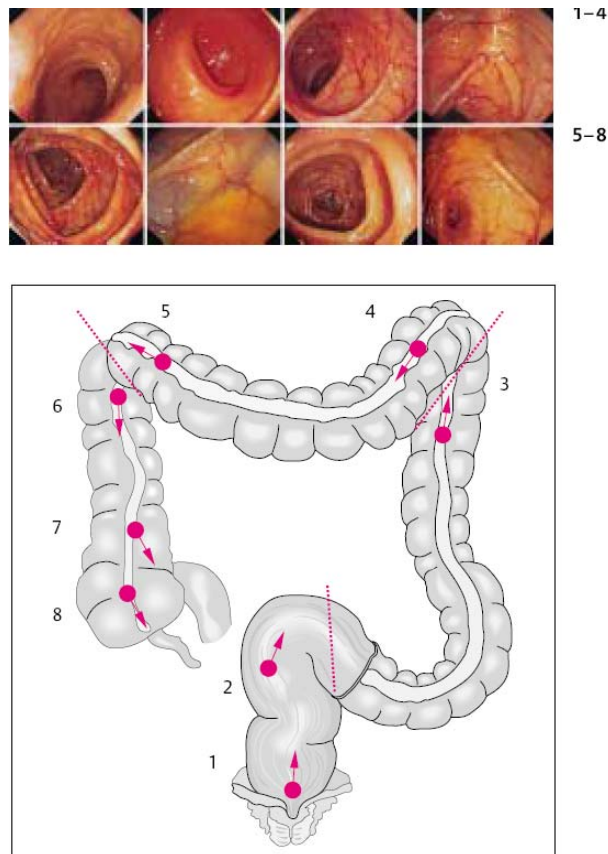


Figure 2

Image 1: The lower part of the rectum, 2 cm above the anal line. This first image shows the whole of the lower rectum.

Image 2: The middle part of the sigmoid. This should show the most common sigmoid diseases, particularly diverticulitis, while taking into account the fact that the site at which the image is taken will inevitably be fairly approximate.

Image 3: The descending colon below the splenic flexure (the spleen is seen by transillumination). This is a relatively fixed point, allowing assessment of

the completeness of the examination of the descending colon as far as the splenic flexure.

Image 4: The transverse colon just after the splenic flexure, allowing visualization of the left side of the transverse colon.

Image 5: The transverse colon before the hepatic flexure (the liver is seen by transillumination). The hepatic flexure is another reference point that is usually easily identified, confirming the completeness of the examination of the colon up to this point.

Image 6: The ascending colon under the hepatic flexure. This image visualizes the ascending colon, seen with a forward view.

Image 7: The ileocecal valve. This is a fixed reference point situated in the ascending colon.

Image 8: The cecum, with visualization of the appendiceal orifice. The cecal image confirms that a complete examination has been performed and that the portion situated below the ileocecal valve has been examined.

Storing videos

Software

This has to be created to read DICOM (Digital Imaging and Communication in Medicine) files and allow the exporting of image files in the .jpg format and video files in .mpeg2 or avi. formats, which are the most widely used formats. Your computer needs to be portable, a recent model, have a large hard-drive capacity, and be equipped to burn CDs.

Hardware

A station is simply a dedicated computer in the endoscopy room, and should be equipped to burn CDs. The computer needs to be connectable to a network, which will allow you to connect to your patient's data file, and can also be used as an accessory monitor.



CDs are the easiest and cheapest storage method. A CD can store, on average, a dozen good-quality images and a 10-minute video. Blank CDs with special label (such as your logo) cost on average 2 euros each. Another advantage of CDs is the short burn time, which is less than 5 minutes on average, which means that the patient can leave the unit with a report and a CD containing images and a video of the procedure.

This will be important for follow-up in patients with chronic diseases, or in patients being referred for surgery. All the physicians caring for the patient will be able to review the video-endoscopic examination as is already the case for computed tomography and magnetic resonance imaging. Giving a patient a record of the procedure is also a way in which practitioners can fulfill quality assurance requirements, because their practice can be



reviewed by any colleague.

Stations:

- Olympus, with mediSIGHT (www.olympus-europa.com)
- Sony BZMD-1 (www.sonybiz.net)
- Fujinon with ADAM report – Filling system (www.fujinonendoscopy.com)

HEPATOLOGY AND GASTRO-ENTEROLOGY DEPARTMENT

Doctor Jean François Rey

Colonoscopy Report

Patient Name : M. John SMITH

Birth date : 10/12/1954

Examination date : 02/10/2006

Indication : Rectal bleeding or haematochezia

Anesthesiologist : Dr Watson

Preparation : Bowel preparation with PEG. Quality was excellent.

Type of patient: Out-patient , ASA score 1. Type of sedation: general anaesthesia. Sedation administered by anaesthesiologist. Medication used for sedation: Propofol (Diprivan).

Extent of examination: in the caecum.

Endoscope used: NBI compatible Endoscope type: colonoscope standard Model: CF-H180AI/L Internal reference number: 54

Disinfection type: washer-disinfector , with peracetic acid.



Colon:

Few diverticula, narrow-mouthed in the sigmoid colon.

Lesion 1: pedunculated polyp (type Ip), size 15 mm, without active bleeding but with stigmata of bleeding in the sigmoid colon.

Lesion 2: nonpolypoid, slightly elevated (type IIa), size 8 mm, without active bleeding and without stigmata of bleeding in the ascending colon.

Polypectomy was performed using a snare. The polyp was completely removed in one piece. The polyp was retrieved.

Endoscopic submucosal dissection was performed. The lesion was completely removed in one piece. The lesion was retrieved.

Ileum: Not examined.

Follow-up: Colonoscopic examination is recommended in 3 years.

Conclusion: Diverticulosis. Two polyps removed by polypectomy and mucosal resection.

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