

Endoscopy and General Surgery - Parts of the Same Activity*

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Rezumat

Endoscopia și chirurgia generală - părți ale unui întreg

Obiectiv: În serviciile de chirurgie generală și digestivă, diagnosticul și tratamentul adecvate necesită accesul pe scară largă și practic continuu la metodele endoscopice. În condițiile în care numeroase servicii de chirurgie dispun deja de propriile unități de endoscopie diagnostică și, eventual, intervențională, prezența în cadrul fiecărui colectiv a minimum 1-2 chirurghi cu competență în endoscopie ar aduce numeroase avantaje.

Metodă: Am analizat retrospectiv activitatea unității de endoscopie digestivă din Clinica de chirurgie a Spitalului "Dr. I. Cantacuzino" din 2007, când a fost înființată, încercând să identificăm beneficiile pe care le-a adus atât pentru accesibilitatea pacienților, cât și ca suport pentru activitatea medicilor din clinică.

Rezultate: Numărul de proceduri a crescut continuu, de la 137, efectuate de 2 chirurghi în 2007, la peste 1500, în 2015, când există 7 chirurghi cu competență în endoscopie, capabili să abordeze în mod practic continuu cazurile apărute. Endoscopia și-a dovedit avantajele pentru diagnosticul etiologic al hemoragiilor digestive superioare și inferioare, depistarea precoce a tumorilor gastrice, colonice și ale rectului superior, monitorizarea post-operatorie a pacienților oncologici. În plus, chirurgii au pregătirea efectivă și competența legală necesare pentru rezolvarea complicațiilor metodei.

Concluzii: Creșterea numărului de chirurghi cu competență în endoscopie nu poate fi decât benefică. În acest scop, includerea unui modul de endoscopie digestivă diagnostică în planul de pregătire al rezidenților de chirurgie generală se poate dovedi utilă și necesară.

Cuvinte cheie: endoscopie digestivă

Abstract

Aim: In general and digestive surgical departments, an accurate diagnosis and appropriate treatment of our patients require a wide and continuous access to endoscopy. As many surgical clinics have already developed their own endoscopy units, we plead for the future presence of at least 1 or 2 surgeons, board certified in endoscopy, in every surgical department.

Method: We have retrospectively analyzed the activity of the endoscopic unit as a part of the Surgical Clinic of "Dr. I. Cantacuzino" Clinical Hospital since 2007, when it was settled, and its benefits, regarding a higher accessibility for our patients and a reliable support for all the doctors.

Results: The number of procedures has increased constantly, from 137, performed by 2 surgeons in 2007 to 1546, in 2015, when 7 surgeons were able to get involved in endoscopic procedures, on a 24/7 schedule. The etiological diagnosis of gastrointestinal hemorrhages, the early detection of gastric, colonic and upper rectal tumors, the follow-up of oncologic patients are only a few of the fields in which endoscopy proved its benefits. Furthermore, surgeons have the practical training and the legal board certification for the approach and treatment of complications.

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Conclusions: An increased number of surgeons who have also board certification in endoscopy cannot be but very useful. The best way to accomplish this goal would be the inclusion of a digestive endoscopy module during the training program of all future general surgeons.

Key words: digestive endoscopy

Introduction

For many centuries, medicine has been based on clinical examination only; natural and accomplished skills of the doctors have been essential for the accuracy of their diagnosis. Imaging methods were related to the technological progress of the late 19th and mainly of the 20th century.

Throughout history, Egyptians, Greeks, Romans and Arabs made the first attempts to view accessible human body cavities (1). Endoscopy appeared as a result of medical interest in discovering what was happening inside the human body, without using the well-known invasive techniques. Thus, one may consider it a challenge and a natural competitor to the surgical exploration and, why not, to the surgeons themselves.

The first endoscope is thought to have been built in 1806, when Phillip Bozzini, a German-born urologist, used concave mirrors to reflect candlelight through an open tube into the esophagus, bladder or rectum. In 1877 Maximilian Carl-Friedrich Nitze used a series of lenses to increase magnification and built the first usable cystoscope. His idea spread fast and Mikulicz's gastroscope was based on a similar system in 1880 (1).

Modern endoscopy is related to the fiberoptic endoscope, which has been developed in the second half of the previous century and has spread widely all over the world; modern gastroenterology would not have been possible without this method.

Advanced endoscopy techniques have been introduced in order to improve the diagnosis of digestive lesions, such as chromoendoscopy (2), magnification endoscopy (3) or virtual chromoendoscopy (4). The incorporation of magnification endoscopy and chromoendoscopy (5) or enhanced endoscopy (6) into one instrument has become possible and has certain advantages, as chromoendoscopy and enhanced endoscopy serve in detection, while magnification endoscopy serves in characterization (7).

Nevertheless, digestive surgery is also based on endoscopic diagnosis and minimally invasive, endoscopic techniques of tumor resection have been put into place and are widely accepted nowadays, in many cases as a "standard of care".

The question which we try to answer in this paper is who should perform gastrointestinal endoscopy: gastroenterologists, surgeons or both gastroenterologists and surgeons?

Method

We retrospectively analyzed the activity of the endoscopy

unit, which was settled as a part of the Surgical Clinic of "Dr.I.Cantacuzino" Clinical Hospital in 2007, almost 10 years after the deployment of such units in other surgical departments. During 9 years (2007-2015), 8309 endoscopies were performed: 4049 upper gastrointestinal endoscopies and 4260 colonoscopies.

Results

There were 2 board certified surgeons in endoscopy in our clinic in 2007, when the first 137 procedures were performed. The volume of endoscopic activity has increased significantly, by 150 procedures every year; the number of upper gastrointestinal endoscopies and colonoscopies was almost equal (Fig. 1).

In 2015, 7 board certified surgeons achieved the goal of providing endoscopic support for the entire Clinical Hospital. We performed 1546 procedures (Fig. 2, 3), which also included therapeutic manoeuvres: polypectomies (Fig. 4) and resection of small tumors, ERCP, endoscopic haemostasis. As two of these surgeons are also board certified for performing ultrasonography, the following step forward is likely to be the introduction and development of echo-endoscopy.

The most severe complication of colonoscopies and, to a lesser degree, of endoscopies is perforation. Among the 4260 colonoscopies, performed during 9 years, a number of 6 such incidents occurred, which constitutes an incidence of 0.14%. Each of the three surgeons who had the largest experience was responsible for two perforations.

Although our series of clinical cases is not very large (fortunately!), we believe it might be useful to briefly present their main features. We noticed that all the perforations occurred in colonoscopies performed by experienced surgeons, who had completed more than 500 procedures at the time. Five of the six patients were female and all of them were older than 72. In patients over 70, in which a diverticular disease is known or even supposed, colonoscopies seem to have a higher risk of perforation.

The diagnosis of perforation was delayed in both cases in which barotrauma from air insufflation was involved, but no major post-operative complications or mortality occurred in the aforementioned six cases (8).

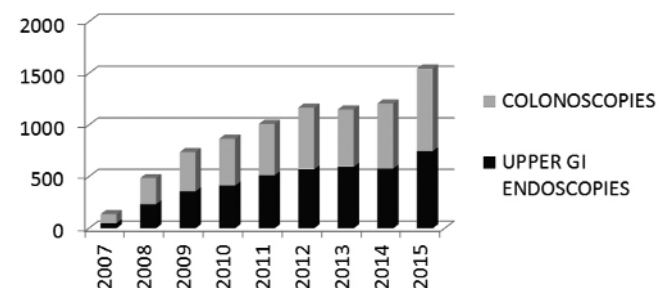


Figure 1. The annual number of endoscopies



Figure 2. Duodenal ulcer

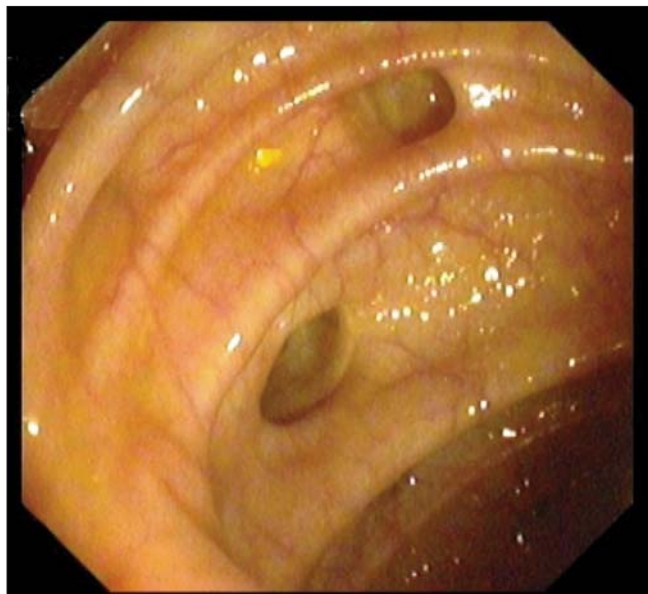


Figure 3. Colonic diverticulosis

Discussions

A competent endoscopist is thought to be able to view the entirety of the colon, assess suspicious lesions and obtain pathology specimens while maximizing patient safety and comfort(9). A greater than 90% success rate of cecal intubation in all cases is also required, as well as above 95% in screening colonoscopies. A minimum number of procedures has to be accomplished, and that is the reason why an average of 200 colonoscopies should be performed every year. Meanwhile, overall colonoscopy perforation rates should be lower than 1/1000(10).

A very interesting issue is whether endoscopies should be performed with or without anesthesia. It is widely accepted that sedation for gastrointestinal endoscopy may be used with the intent of improving throughput and patient satisfaction. The most commonly used drugs are Propofol and Midazolam. In Spain, more than 50% of esophagogastroduodenoscopies and 95% of colonoscopies are performed on a sedated patient(11). Nevertheless, use of anesthesia professionals does not appear to bring a safety benefit to patients(12).

The main question that this paper tries to answer is whether surgeons or gastroenterologists should perform endoscopies. The Canadian Association of General Surgeons (CAGS) stated that it is essential that endoscopy remain a core component of general surgical practice and a core competency of general surgery residency training(13). A general survey which included general surgeons across the country pointed out that 95.7% of them mentioned endoscopy as an important skill to possess, while 85.5% actually used endoscopy in their own practices(14). In the USA, the requirements are more precise: training in therapeutic endoscopic techniques has become a mandatory module during general surgery residency programs(15).



Figure 4. Resectable colonic polyp

Inside the European Union, the approaches to this issue are quite different, according to the national health legislation. In Great Britain, for instance, the role of endoscopy training in a surgical training program is yet to be clarified (16).

In Romania, board certification for diagnostic endoscopy is available for trained gastroenterologists and surgeons. They should first complete a six-week theoretical and hands-on course and then they should perform a number of procedures themselves, under the guidance of a trained and board certified endoscopist.

The main surgical fields of interest include: diagnosis of unexplained anemia, etiological diagnosis of gastrointestinal

hemorrhages, early detection of gastric, colonic and upper rectum tumors, follow-up of oncologic patients. Furthermore, surgeons are trained and have the legal board certification for the approach and treatment of complications.

Although colonoscopies performed by surgeons proved to be safe, there is still room for improvement in our attempt to decrease iatrogenic perforations. One should always remember that in patients older than 80, in which a diverticular disease is known or even supposed, colonoscopies seem to have a higher risk of perforation. A barium enema may be a wiser choice for them.

Restricting inexperienced operators from performing these types of cases might also be beneficial. Patients in which difficulties arose during the procedure should be followed up for at least 24 hours, in order to settle an early diagnosis of a possible incident.

An upsetting issue that we should still keep in mind is the risk of false negative results. Based on a retrospective analysis of almost 3000 cases in Great Britain, it has been found out that in 8.3% of patients with gastric cancer, their neoplasia was missed at endoscopies performed within the previous 3 years. Gastric ulcers were detected in 15% of these endoscopies within the previous 3 years, and in 64% of endoscopies performed 3 to 6 months before (17).

Conclusions

Modern gastroenterology and digestive surgery cannot be separated from endoscopy. Surgeons should perform themselves these investigations, as they can focus on the peculiar type of lesion they are looking for and they can follow-up their patients. An important issue is the intraoperative feed-back, which allows a reasonable length of the learning curve. Our own results, as well as the activity of other endoscopy units which have a much larger experience have shown that the endoscopies performed by surgeons are safe and accurate. Furthermore, surgeons are trained and have the legal board certification for the approach and treatment of complications.

We appreciate that every surgical department should include at least 1 or 2 surgeons board certified in endoscopy. The best way to accomplish this goal would be the inclusion of a digestive endoscopy module into the training program of future general surgeons.

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