Policy paper

Acta Chir Belg, 2011, **111**, 200-204

Endoscopy and Surgery : *A Matter of Diagnostic Enlightenment & Therapeutic Liberty*

The Board of the Royal Belgian Society of Surgery
Cl. Bertrand, D. Burnon, B. Carly, W. Ceelen, A. De Roover, O. Detry, M. Duinslaeger, T. Gys, J. Hendriks, Ph. Kolh, J. Lamote, J. Lerut, L. Michel

"*Although endoscopic procedures are naturally best carried out by specialists, the general practitioner is frequently called on to decide whether or not such examinations are indicated. It is for this reason that physicians must be interested in endoscopic progress, for it is only through the co-operation of all physicians that such examinations are performed on the right patients at the right time*" (1). This statement sounds rather familiar to surgeons who are often the only remaining general practitioners in modern hospitals. Amazingly enough, this text was the introduction of a paper written by Edward B. Benedict from Harvard Medical School at the Massachusetts General Hospital in 1942, at a time rigid endoscopy was still in the limbo and flexible endoscopy not even envisioned.

The diagnostic and therapeutic endoscopy techniques have been the field of tremendous developments and progresses since 1942, which are still ongoing. However, physicians should keep a low profile because those developments and progresses are, for the most part, not due to their expertise, skill and creativity, or to sum it up in one word to their *Hubris* (ie. the insolence and excessive self-confidence, which is also referred to as "pride that blinds") (2). In fact the current state-of-the-art of endoscopic technology is due mainly to the results of wide ranging research in new materials, in the fantastic and exponential development of electronic and miniaturization of fiberoptic equipments. But also to the fact that the overall prosperity of the western world since WWII has allowed to sustain (so far) the Welfare States financing the medical and surgical progresses. All components of the medical world must honestly admit that the current state of endoscopy is the result of multi-disciplinary and trans-disciplinary collaboration and co-operation initiatives, in which surgeons have actively and fairly contributed since the beginning of the endoscopic era. Therefore, endoscopy techniques are not the private property of any medical subspecialty protected behind barbed wires.

Why then are some people trying now to rip the surgeons off by not allowing them to perform endoscopy any more ? In this paper executives of the Royal Belgian Society of Surgery examine objectively the principles, requirements and philosophy about the enduring place of Endoscopy in General Surgery.

When one get problem with a founding principle one can often find a solution, or at least an explanation, in the mythology because as far as human nature is concerned everything has already been figured out ? Analogy and metaphor are just there waiting to be interpreted. So let us dispassionately remind the health care executives in white coat (or not) that Prometheus – a popular model among surgeons – stole fire (fire being the metaphor of the provision of knowledge to men) from gods and gave it to men allowing humanity to uncover some secrets leading to major further steps forward in knowledge. Later on, Zeus had Prometheus punished for his crime by having him chained to a rock on the Caucasian Mount Elbrouz while a great eagle ate his liver every day, only to have it grow back to be eaten again the next day. But this is not the end of the story! Heracles passing by Mount Elbrouz one day saw Prometheus bound to the rock, with the frightful eagle merrily munching on his liver. Heracles was famous for always taking the side of the just, the powerless and the overwhelmed ; he ultimately killed the eagle and liberated Prometheus from his chains.

Indeed in 2011, the *issue of surgery and endoscopy* is close to the analogy of Prometheus and Heracles. On one hand, the individual surgeon is the promethean health care provider and, on the other hand, the basic requirements and principles of surgical practice are metaphorically illustrated by Heracles'quest for justice and fairness.

International requirements

The first exam of the European Board of General Surgery that took place in November 2010 in Turino included specific questions about endoscopy. More precisely, 20% of the questions retained by the European Board (General Surgery section) referred directly to

endoscopy techniques and/or imaging. Most likely it will be exactly the same for the 2011 exam to be held in Krakow.

This is in line with the Union Européenne des Médecins Spécialistes (UEMS) and the European Board of Surgery (EBS) requirements for General Surgery (3) which clearly mention that : "*The speciality of General Surgery requires specialized knowledge and skills in managing […] diseases and injuries in most organs systems, which are treated by surgical methods. The surgeon must have acquired and must maintain specialized knowledge relating to the diagnosis, preoperative, operative and postoperative management in the areas of primary responsibility. […] Responsibility for the coordination of all phases of treatment is one of the main components of surgery : care of critically ill patients with underlying conditions including coordinated multidisciplinary management ; rigid and flexible endoscopy of alimentary tract, diagnostic and therapeutic ; methods for gastrointestinal function diagnosis, especially manometry and p_h-metry ; diagnostic and interventional radiology and sonography*".

The reader can find the General Surgery syllabus on the website of the UEMS and European Board of Surgery (3) which describes "Knowledges" and "Knowledges and Skills" mandatory for the qualification as Fellow of the European Board of Surgery (FEBS). The skills in flexible endoscopy is comprehensively described on page 15 of the syllabus.

Evolution of the Belgian situation

Although requirements are well defined at a European level, confusion, conflicts of interests, lobbying and under the table bargaining are still in the middle of the game in the Kingdom of Belgium. If things go on at the current pace, on 1st January 2012 surgeons will not be entitled any more to perform flexible endoscopic exams on their own patients.

Already in the early nineties the former Consilium Chirurgicum - as the joint representative backbone of the Royal Belgian Society of Surgery (RBSS), the Ministry of Health Accreditation Committee in Surgery, the Universities Surgical Departments and the Belgian Professional Surgical Association – stated that *"Flexible endoscopy both diagnostic and therapeutic is a tool that can be used by specialists treating digestive diseases and may not be exclusively accessible to physicians at the exclusion of surgeons. The surgeon has the right (and duty) to visualize the lesions and the organs that have to be surgically treated and also to perform if necessary postoperative assessments. The surgeon is also responsible of the evaluation and selection of the new interventional techniques for the treatment of digestive pathologies in order to offer patients more effective therapeutic alternatives*". Indeed, the Consilium Chirurgicum just applied the wellknown saying *: "If you can do the big things, you can do the little things as well"*. As a matter of fact, this led ultimately the Medical and Technical Council to give surgeons permission to get access to the endoscopic nomenclature. It is important also to recall here the text of the 4th criteria mentioned by the ministerial decree of 12 December 2002 (Article 2) regarding the accreditation of new surgeons : "*The candidate surgeon must acquire during his or her basic training a global knowledge of the clinical and technical aspects of surgical pathology as well on the diagnostic ground as the therapeutic one. It encompasses intensive care, oncology, emergency medicine, operational and organisational aspects of those services, as well as competence with endoscopy*".

More recently, at the 2011Annual Meeting of the Belgian Society of Gastro-Intestinal Endoscopy (entitled "Building the Future of Endoscopy"), a session was dedicated to the topic "*What can we foresee in the next years ?*", during which two interesting subjects were analysed : "*Merging surgical and endoscopic competences : should we train together ?*" and "*Our next endoscopy rooms : teaching, devices and surgical requirements*".

Moreover, at the 29th Gastroenterology and Endotherapy European Workshop held in Brussels, the list of the main topics included Zenker's diverticulectomy, transoral endoscopic surgery for obesity, NOTES, transmural anastomosis, treatment of surgical complications (stenosis, fistula, leakage).

In summary, the current Belgian situation can appropriately be described by two paradoxes because despite sound reasoning from an acceptable premise, misunderstanding arises leading to conclusion that is against sense and logically inacceptable (2). First paradox : on one hand, the evolving importance of endoscopy in treating digestive pathologies ; on the other hand, the fact that surgeons could be sidetracked while interventional physicians are taking over. Nevertheless, when the complications will occur, the surgeon will emergently be called to deal with them. Second paradox : ironically, paediatricians and geriatrics will be entitled to pursue performing their endoscopic exams (see the Belgian Nomenclature of Health Care : from item 472076 to item 473826 for paediatricians and from 472356 to 473605 for geriatrics) on their own patients after 1st January 2012, but surgeons not! Why such a discrimination in the core of the European Union where free circulation of people, goods and services is one of the founding principles ?

Surgical Principles

The principles lying behind the entitlement of surgeons to perform endoscopy are straightforward : knowledge

and competence, skill and experience, continuing education and evidence based indications, quality control and permanent improvement. The foundation of those principles can be found in all medical and surgical specialties as well as in the fields of added qualifications (ultrasound, lasers, pulsed light, radiofrequency devices, acute and trauma care) providing arguments for the surgery-endoscopy debate.

Ultrasound examination by surgeons is most likely the most obvious analogy with the endoscopy debate. The American College of Surgeons (ACS) statement of 1998 on Ultrasound Examinations by Surgeons (4) is very clear : "*To ensure that surgeons who use ultrasound are qualified and that the ultrasound facilities and equipment they use are appropriate for the medical application and meet and maintain quality standards, a voluntary verification process has been made available to Fellows. There are several components to this process ; first, the surgeon must meet the requirements for education and/or experience ; second, the facilities and equipment should meet recommended standards ; third, the surgeon should maintain qualifications through continued experience and formal continuing medical education in the technique and its applications ; and fourth, surgeons'outcome using ultrasound should be assessed through a program of continuous quality improvement*". Those ACS requirements are very restrictive and demanding for the surgeons. Are they the same for other specialties performing ultrasound examinations ? By analogy, one can ask exactly the same question for endoscopy.

Regarding the use of **lasers**, **pulsed light**, **radiofrequency** devices by surgeons we are faced with one more analogy very close to the endoscopy debate. The American College of Surgeons (ACS) statement of 2007 on Surgery using lasers, pulsed light, radiofrequency devices, or other techniques (5) is again very clear requiring that surgeons meet the principles of the College in all respects.

More specifically, the evolving management strategy in **oesophageal perforation** (6, 7) is all grist to the mill of arguments for endoscopy to be performed by the surgeon. They are consolidated by the recommendation that intraoperative endoscopy can facilitate dilation of persisting stricture, removal of foreign bodies, placement of endoscopic stents and drains when appropriate. In addition, a prospective analysis of 3525 esophagogastroduodenoscopies (EGD) performed by surgeons shows that surgeons can perform EGD with a high degree of success and low morbidity. On the basis of this large prospective study, no minimum number of cases could be proposed for establishing surgeons' credentials to effectively and safely perform either diagnostic or therapeutic EGD (8).

The context is basically the same at the other end of the alimentary tract. **Colonic ischemia after open repair of ruptured abdominal aortic aneurysm** (rAAA) has been reported to be as high as 42% and is associated with high mortality rates when transmural necrosis is involved. A surgical team from Cleveland updated its results regarding an aggressive approach, instituted since 1996, with mandatory colonoscopy after rAAA (9). The authors demonstrated decreased mortality in patients with ischemic colitis after open rAAA who underwent mandatory postoperative colonoscopy. The same study shows also that the overall incidence of colonic ischemia after endovascular aortic repair (EVAR) remains as high as 23%. Therefore, the authors recommend continuing mandatory flexible sigmoidoscopy by trained surgeons involved in the postoperative care of these patients, instead of hesitating until abnormal clinical and laboratory parameters increase their suspicion for this severe morbid complication.

Another study (10) confirms the observation that colonoscopy performed by surgeons is safe and rapid whether performed as a therapeutic or as a diagnostic procedure.

Let's turn now to surgeons as partners in **acute and trauma care** (11, 12). The acute care service needs to have competent surgeons that can cover all surgical emergencies and train their fellows to do the same. It is important to remember that many surgeons gain a considerable portion of practice experience, expertise and skills in areas of surgery long after they finished formal training. Highly motivated individuals can pursue and develop expertise in a wide variety of technical and cognitive skills including endoscopy for gastrointestinal bleeding and any other acute conditions. Such attitude is much more valuable for trauma and acute care patients than having surgeons abdicated the care of those patients to other specialties simply because those specialties believe that participation of surgeons is superfluous. Willingness, desire and availability remain at a premium in surgery (11) ; and when combined with expertise and effective mentoring, the best clinical outcomes can be obtained instead of hiring an emergency medicine physician to "fill in" (11, 13). However, to be effective in such dramatic and/or emergency situations, the surgeon must have acquired his skill by a routine and elective practice of upper GI endoscopy.

Let alone the accident caused by the nonsurgical endoscopist who then turns to the surgeon for emergency operation.

Last but not least, the philosophy of the ACS statement on **Certificates of Special or Added Qualifications** (14) is quite lenient and open-minded while mentioning : "*Certificates of special or added qualifications are designed to recognize specialists who have acquired further education and training in a narrower discipline within that specialty. The existence of such certificates does not imply that a specialist who*

does not hold them should be excluded from areas of practice that are considered to be within the realm of the specialty as defined by the primary board. Surgical critical care is a prime example of this issue. The granting of surgical privileges should be based upon the surgeon's record of training, experience, and demonstrated performance in the areas of practice that are associated with the specialty, rather than being focused exclusively upon the holding of a certificate of special or added qualifications".

However, three other paradoxes render the Belgian situation even more complex. Firstly, surgeons would be entitled to participate in critical care but not allowed to perform endoscopy on surgical patients. Secondly, for an operated patient the surgeon must remain the primary responsible health care provider but not allowed to perform endoscopy. Thirdly, how many surgeons were holding *a certificate of special or added qualification* in laparoscopic surgery in 1992 when this ACS statement was released at the time the laparoscopic blitz hit the field of general surgery ? The very same question could have been retrospectively raised for flexible endoscopy back in the early seventies.

Then, what is General Surgery all about ?

Back in June 1989, four months before the fall of the Berlin wall, the ACS Advisory Council for General Surgery unanimously recognized and reaffirmed that General Surgery is the basic core specialty within the discipline of surgery (15). "*The general surgeon is a surgical specialist engaged in the comprehensive care of surgical patients. The future of General Surgery is dependent upon the maintenance of comprehensive training standards and scope of practice. […] Technological advances continue to characterize the modern practice of scientific medicine. Surgeons should continue to direct the development of and the definition of the true merit of technical innovations in many aspects of general surgical care. Some current examples include percutaneous angioplasty,* ***fiberoptic endoscopy****, intensive care technologies"*.

Speaking of surgeons continuing to direct the development of technical innovations and the assessment of their true merit in many aspects of general surgical care, one can not skip the debate related to new surgical approaches which are not satisfactorily validated yet for daily clinical practice, such as single-incision laparoscopic surgery (SILS) and natural orifice transluminal endoscopic surgery (NOTES). The foundation of skills for the performance of NOTES lies in the training in general surgery (especially laparoscopy) and flexible gastrointestinal endoscopy (17). While much remains unknown and unanswered surrounding these procedures, it is clear that extensive research and development with regards to the ethics and the technical aspects of the procedures are essential (16-19). Such surgical R & D to evaluate the safety, effectiveness and potential benefits, if any, will require surgeons familiar with flexible endoscopy techniques from the vagina, anus and colon up to the bronchial tree, the oesophagus and the stomach. Nevertheless, the robust ethical prerequisite to perform those non validated new approaches (19) on patients is to inform them that, among others things, the responsible surgeon is a master and commander in endoscopy, which makes the arguments in favour of endoscopy performed by surgeons growing even much stronger.

Conclusion

The conclusion is obvious and laconically phrased in the 1989 ACS Statement (15) already alluded to : "*Patients are best cared for when the procedure is* ***done by or with the full and previously established cooperation*** *of a surgical specialist capable of definitive correction of the patient's illness or likely complications*".

References

1. Benedict E. B. Endoscopy. *New Engl J Med*, 1942, **226** : 449-455.
2. Michel L. Surgeons and the paradoxes of disaster situations. *Acta Chirur Belg*, 2010, **110** : 510-516.
3. http://www.uemssurg.org
4. American College of Surgeons (ACS) statement on Ultrasound Examinations by Surgeons. *Bulletin of the ACS*, 1998, **83** : 6.
5. American College of Surgeons statement on surgery using lasers, pulsed light, radiofrequency devices, or other techniques. *Bulletin of the ACS*, 2007, **92** : 7.
6. Kuppusamy M. K., Hubka M., Felisky C. D. *et al*. Evolving management strategies in esophageal perforation : surgeons using nonoperative techniques to improve outcomes. *J Am Coll Surg*, 2011, in press.
7. Michel L., Collard J.-M. Esophagus : Perforation, Boerhaave' Syndrome and Mallory-Weis Syndrome. Oxford Textbook of Surgery 1994. Eds.PJ. Morris & RA.Malt, Oxford University Press, Chapter 14.2, pp. 868-873.
8. Reed W. P., Kilkenny J. W., Dias C. E., Wexner S. D. A. A prospective analysis of 3525 esophagogastroduodenoscopies performed by surgeons. SAGES EGD Outcomes Study Group. *Surg Endosc*, 2004, **18** : 11-21.
9. Champagne B. J., Lee E. C., Valerian B., Mulhotra N., Mehta M. Incidence of colonic ischemia after repair of ruptured abdominal aortic aneurysm with endograft. *J Am Coll Surg*, 2007, **204** : 597-602.
10. Wexner S. D., Forde K. A., Sellers G., Geron N., Lopes A., Weiss E. G., Nogueras J. J. How well can surgeons perform colonoscopy ? *Surg Endosc*, 1998, **12** : 1410-1414.
11. Carr J. A. Emergency traumatologists as partners in trauma care. *J Am Coll Surg*, 2009, **208** : 415-416.
12. Grossman M. D., Portner M., Hoey B. A. *et al*. Emergency traumatologists as partners in trauma care : the future is now. *J Am Coll Surg*, 2011, **208** : 503-509.
13. Grossman M. D., Schwab W. Reply to Carr J. A. (ref.11). *J Am Coll Surg*, 2009, **208** : 416.
14. American College of Surgeons statement on Certificates of Special or Added Qualifications. *Bulletin of the ACS*, 1992, **77** : 32.
15. Statement for the Advisory Council for General Surgery to the Board of Regents of the American College of Surgeons. *Bulletin of the ACS*, 1989, **74** : 6-7.

16. Chamberlain R. S., Sakpal S. V. A comprehensive review of single-incision laparoscopic surgery (SILS) and natural orifice transluminal endoscopic surgery (NOTES) techniques for cholecystectomy. *J Gastrointest Surg*, 2009, **13** : 1733-1740.
17. The future of gastrointestinal therapeutic endoscopy : NOTES. *Gastroenterol Clin Biol*, 2009, **33** : 758-766.
18. Levy L. C., Adrales G., Rothstein R. I. Training for NOTES. *Gastrointest Endosc Clin N Am*, 2008, **18** : 343-360.
19. Michel L. The epistemology of evidence-based medicine. *Surg Endosc*, 2007, **21** : 145-151.

Prof. L. Michel
E-mail : luc.michel@uclouvain.be