

## VIEWPOINTS ON DIGESTIVE DISEASES

### Interventional Gastroenterology (Endoscopy) at the Crossroads: A Plea for Restructuring in Digestive Diseases

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No one would seriously deny that endoscopy has revolutionized our approach to many patients with digestive diseases. There have been remarkable developments in diagnostic and therapeutic techniques in the last 25 years, yet this very success is the reason why we now face a crisis. The problem is that endoscopy straddles the traditional medicosurgical divide. Interventionists like myself, with a foot in each camp, are very uncomfortable when the barriers between them are raised. Turf issues are disruptive and increasingly interfere with our ability to deliver health care efficiently. This is a plea for breaking the old barriers, developing new professional structures, and moving forward under the multidisciplinary banner of "digestive diseases."

A brief historical review of the changes may help us to understand the present strains. It must be almost impossible for current gastroenterology trainees to imagine the specialty as it existed only one generation ago. Clinical activities were leisurely and contemplative. Diagnoses were made by intuition, barium shadows, and some basic blood tests; there were no scans. Endoscopes were shiny metal tubes. Clinical research mainly involved gastric acid, fecal fat, and small bowel biopsy specimens. Treatments were anecdotal, often prolonged, and rarely effective; few had been subjected to any form of trial. Patients with peptic ulcers, when recognized, were treated with bed rest in the hospital, often with a nasal milk drip. The distinction between "medical" and "surgical" jaundice was usually made by waiting for several weeks to see whether the patient improved or got worse. Gastroenterologists were like neurologists: interested but impotent observers of pathology. Abdominal surgery was also very different in those days; it was authoritative, unscientific, and risky, and nutritional support and intensive care were unknown. The roles of gastroenterologists and abdominal surgeons were entirely distinct. Their mu-

tual relationships were uncomplicated, and there was no element of competition.

Now the scene is dramatically different. Gastroenterology has become more scientific, busy, and effective. We have magic bullets for many diseases and an armory of smart endoscopic weapons. The number of gastroenterologists has increased substantially, especially in the United States. Endoscopy has played a large part in this change, but the transformation has not been entirely smooth or universally welcomed. Some gastroenterology leaders were initially dismissive of endoscopy, and a few remained so for a long time despite the accelerating enthusiasm of practitioners and trainees. Lack of interest at the academic centers and the rewards of private practice together ensured that few endoscopic gastroenterologists remained at the centers to pursue research or teach. In the United States, the vast majority of endoscopy procedures have been performed in private community practice. These are some of the reasons why, until recently, most endoscopic innovations and scientific assessments have originated outside the United States, most notably in Europe and Japan. The research product per endoscopist in the United States has been distressingly low.

#### Evaluation

The success of most endoscopy innovations led some of us to believe that anything new must be better and that everything we touch will turn to gold (sometimes literally). However, we are now encountering some disappointments, e.g., in the endoscopic treatment of pancreatic strictures. This fact and the background of skepticism among our academic leaders and payers is stimulating a new and most exciting phase in the history of endoscopy: that of serious objective evaluation.

The main clinical question is whether a new approach is better (cheaper, safer, and more effective) than others already available. Many believe that the answers would

be provided quickly if the endoscopists would apply established research methods such as the randomized controlled trial. However, the obstacles are impressive, particularly when therapeutic options are considered and when the alternative treatment is very different, such as surgery.<sup>1</sup> Colonoscopic polypectomy is so obviously preferable to colotomy that a randomized trial would be impossible to mount. Does the same apply now to endoscopic methods of hemostasis, removal of bile duct stones, stenting for malignancy (or the laparoscopic method for cholecystectomy)? Even in clinical situations in which there is no consensus, studies may not be practical. For example, patients are reluctant to volunteer for randomization when the physical burdens of endoscopy and surgery appear to be so different. The small proportion of patients who do consent in such studies may be quite unrepresentative. Another problem is that the results of interventional techniques are considerably influenced by varying operator skills. Furthermore, collecting a sufficient number of similar patients to study may require multicenter collaboration; centers may vary in their skills, enthusiasm, and discipline. Yet another difficulty is that technologies rarely stand unchanged for the convenience of assessment. Meticulous studies may be outdated before they are completed. Most surgical and interventional studies have concentrated on immediate rates of success and complications. As we refine our treatments and studies, these differences are minimized and other outcome measures become far more important, including long-term results, costs, and quality of life.

Endoscopists and surgeons now entering this research arena with naive enthusiasm must realize that these studies are complex, frustrating, and time consuming.<sup>1,2</sup> They cannot be performed casually as part of regular clinical activity and follow-up. We need determination; discipline, time, funding, and guidance by health scientists. In 5–10 years time, we will be judged by the extent and quality of the studies now being initiated. Of considerable practical importance is the fact that few can be conceived, planned, and completed within a standard period of fellowship; studies need to be graduate-driven.

Fortunately, outcome evaluation research is becoming fundable as well as fashionable. This is one reason why academic departments of gastroenterology are now embracing endoscopy. In addition, the clinical income so generated is increasingly necessary to support academic endeavors because basic research funding has declined. Furthermore, the quality of endoscopic training has a major influence on fellowship recruitment. As these attitudes change and the rewards of practice decline, we shall see more young clinical investigators remaining in academic institutions; this can only improve the training

and attitudes of those passing through the programs. Endoscopy is now effective and becoming more respectable. So what is the threatened crisis? The problem is that these successes place an intolerable stress on the traditional relationships between medicine and surgery.

### Surgeons and Endoscopy

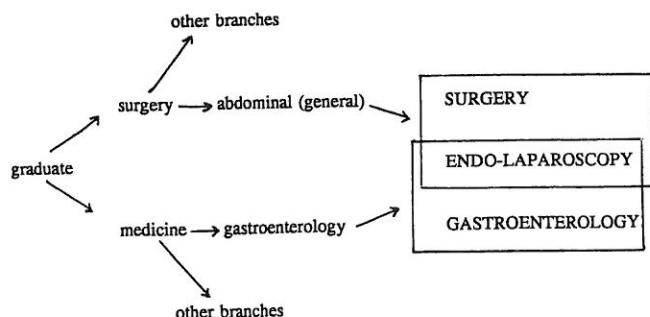
With some distinguished exceptions, surgeons ignored endoscopy in its early years. The techniques were largely diagnostic; few surgeons could envision operating through a "keyhole." That has changed over the last decade for two reasons. First, it became obvious that surgical "turf" was being seriously eroded as endoscopy took over the primary role in treatment of many conditions previously managed by surgeons, e.g., esophageal strictures, variceal and ulcer bleeding, foreign bodies, bile duct stones, malignant jaundice, and colonic polyps. Despite few randomized comparisons with surgical management, most patients and payers now vote for treatments that appear to be quicker, safer, and cheaper, even if they may not always be as effective. Many surgeons responded to the threat by reaching for endoscopes themselves. Standard surgical training now includes some familiarity with endoscopy, and the trend is reflected in the rapid growth of the Society for American Gastrointestinal Endoscopic Surgeons.

The second and even bigger factor is the huge impact of surgical laparoscopy. This was judged by one pioneer as being as important as the two prior major milestones in surgery: disinfection and anesthesia.<sup>3</sup> Having dropped the endoscopy ball initially, surgeons almost fumbled again with laparoscopy; they showed little interest for a long time despite the enthusiasm of their colleagues in gynecology. It was seen as a diagnostic technique used by a few maverick gastroenterologists; indications waned with improvements in abdominal imaging. Some leaders in surgery even dismissed laparoscopic cholecystectomy as a passing fancy: a French weed growing wild in the community. What an enormous transition during the last 3 years; now almost all operations are performed laparoscopically without (as yet) much proof that this confers benefit.<sup>4</sup> Every academic institution has its laparoscopy center. Some medical endoscopists are amused by this sudden conversion to keyhole surgery, but their smiles will be short-lived. Thousands of surgeons are currently developing and refining laparoscopic skills. Having gained confidence and competence with these techniques, many will also wish to become fully proficient in flexible endoscopy. Gastroenterologists have been fairly relaxed about showing surgical residents the rudiments of simple endoscopy procedures. However, the new breed will be much more interested in the more complex,

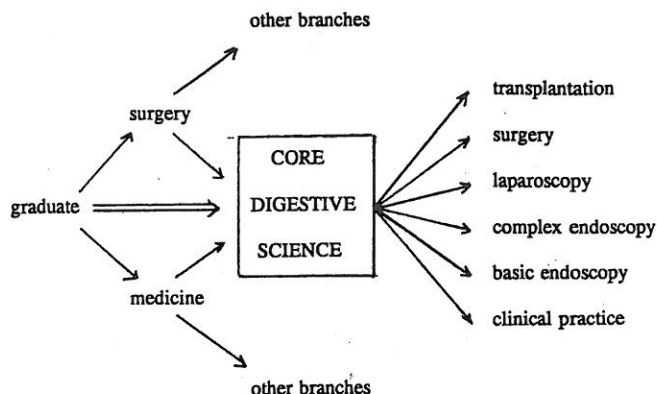
which no one can consult a specialist without referral through their designated family practitioner. In combination with a government-imposed shortage of specialists, this is an effective method of rationing. The primary physician is supposed to be the patient's advocate and map reader with enough specialist knowledge to choose the appropriate timing and type of referral. A Scottish family practitioner recently described this as a "confidence trick."<sup>6</sup> It remains the responsibility of specialists to ensure that our professional arrangements assist rather than hinder the delivery of modern care. Everything cries out for integrating these diverse and potentially competing interests into a new specialty: digestive diseases. This would have an important practical impact on patient care, teaching, and research.

Patients being referred for abdominal problems must now choose between doors marked "Surgery Clinic" and "Gastroenterology Clinic"; some will be quickly deflected to Radiology (hopefully, not too many to Pathology). Patients, payers, and family practitioners will be better served if there is only one door marked "Digestive Disease Center" that leads patients to the multidisciplinary team.

Communication, the key to mutual understanding and respect, is dependent on shared territory and language. Current practice arrangements often appear to be designed to have the opposite effect. In hospitals and training institutions, medicine and surgery are usually separated physically; often, surgery has moved recently into a new building, leaving "low tech" gastroenterology in the old facilities. Those designing clinics and hospitals for the next century have a tremendous responsibility not to perpetuate the old divisions through outdated physical structures. Without frequent contact and a common database, the separate specialists develop biased views of their colleagues' endeavors. Surgeons mainly see failures of endoscopy and vice versa. I have never seen a patient who has had an uncomplicated cholecystectomy;



**Figure 1.** Graduates are currently separated at birth and develop independently but eventually espouse overlapping techniques (endoscopy and laparoscopy).



**Figure 2.** Integrated training in digestive science before technical specialization.

surely they exist. The situation should improve (or at least the difficulties brought into sharper focus) when institutions recognize the need for joint medicosurgical facilities (in-patient wards and endoscopy suites and clinics). Managed care is now providing a boost to this process, but there is a more fundamental problem.

### Integrated Training

At present, medical school graduates destined for gastroenterology are separated at birth (internship) from their classmates who have surgical ambitions. For more than 5 years, they walk different floors, attend different clinics, and learn different languages. When launched into clinical practice, they may have little in common except a wish to focus on similar types of patients and procedures (Figure 1). This is a recipe for competition, not collaboration.

Essentially, there are six "levels" of clinical activity in digestive disease of increasing "invasiveness": clinical practice, basic endoscopy, complex endoscopy, laparoscopy, open surgery, and transplantation. However, practitioners with different skills all share (or should share) a common core knowledge of digestive diseases. Why not enter all graduates with ambitions in digestive diseases into a 2–3-year core curriculum encompassing traditional principles of medical and surgical science? During this period, they would realize their aptitudes, focus their ambitions, and choose their "level of invasive comfort" for more specialist training. No one will do everything, and few would concentrate only at one level; most will choose two or three adjacent skills (Figure 2). The fundamental question is whether certain groupings of activity need to be recognized and somewhat separated for purposes of training and credentialing. We all need labels. If we assume that the present demarcation line is misplaced and unstable (Figure 3A), there are only two possible alternatives. If surgery and medicine continue

to dominate academia rather than organ system-based structures, we are likely to see all complex endoscopy becoming "surgical" (Figure 3B). Within surgery, there may be some difference in emphasis; some surgeons will be more "endoscopic." Gastroenterologists will be emasculated. My preferred scenario is to break down the old medicosurgical barrier and work within a new framework of digestive disease. It seems more logical to recognize three types of specialists: medical gastroenterologists, "real" surgeons (performing resections and transplantation), and a new grouping that embraces all of the minimally invasive techniques of endoscopy, laparoscopy, and interventional radiology (Figure 3B). It is difficult to think of a snappy title for these new specialists. Digestive endotherapists or endosurgeons? Gastrointestinal minimally invasive therapists? Some people will be concerned about the concept of "half surgeons," but at least those performing complex endoscopy will have had more training in surgical principles than the current band of aggressive gastroenterologists (like myself). Many surgeons hold on to the dogma that a doctor should not start something that they cannot finish, e.g., if complications develop. This statement is made when gastroenterologists threaten to perform laparoscopic cholecystectomy, as some have done. However, that principle was sold long ago. Gastroenterologists doing dilatations, polypectomy, hemostasis, or sphincterotomy are not expected to be able to perform the rare laparotomy required for their complications. Cardiologists are not expected to open the chest when infarcts or tamponade result from their interventional procedures. These turf arguments will lose their sting when, effectively, all three groups are collegial members of a multidisciplinary team. Furthermore, the barriers between the groups should be relatively low, allowing fluidity of activity for special people and circumstances. The only real criteria for specialist activity are correct training and motivation. These arrangements would greatly facilitate efficient patient management and give a considerable boost to teaching and applied research.

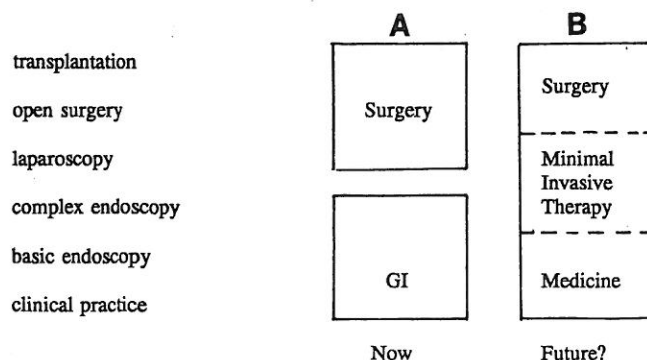


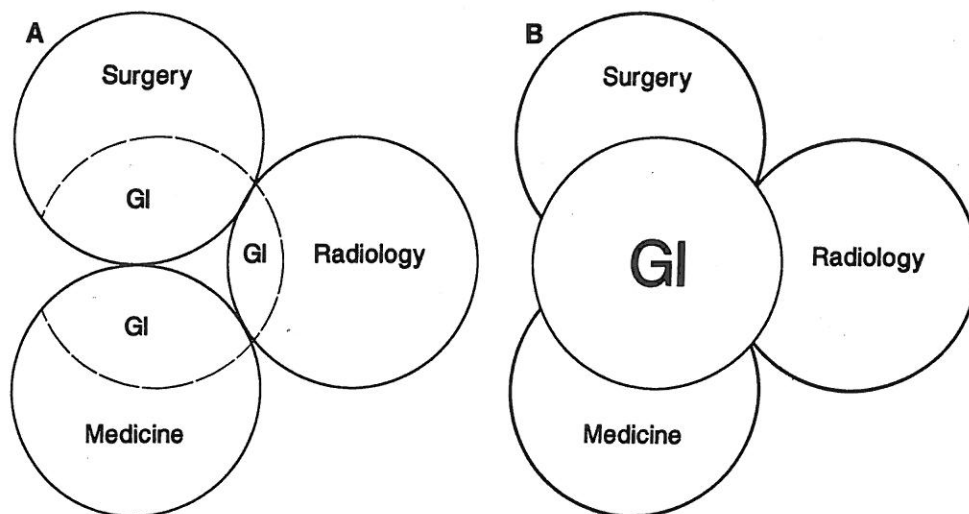
Figure 3. Divisions in digestive diseases.

The concept of multidisciplinary teamwork with mutual respect and support is very cozy but raises many other questions. The patient may now enter one door into a "Digestive Disease Center," but who do they see? Who does the actual doctoring? Who defines the triage system? Where effective collaboration has developed hitherto between different specialists in digestive disease, it has done so usually because of one dominant personality. If this leader is a forceful interventionist (endoscopist or surgeon), it may perpetuate imbalance in patient care. Perhaps the triage leader ("keeper of the algorithms") should be a noninvasive "medical" gastroenterologist who is able to review all of the options with the patient. The interventionists may resent such arrangements, which appear to relegate them to the position currently resented by radiologists: technicians summoned to perform at someone else's behest. However, it would also release them to spend more time doing what they do best.

Radiology has been mentioned several times; it is also a specialty at a crossroads. Will future interventional radiologists remain primarily as radiologists using their imaging and catheter skills in many different organ systems (e.g., vascular, renal, and gastrointestinal)? Or will some become more clinically orientated, focusing on one organ system such as the digestive tract? If so, they would join the band of "digestive endotherapists" with sufficient core clinical training to justify separate admitting privileges.

### Digestive Disease Societies

These problems are reflected in the plethora of digestive disease societies. Gastroenterologists and surgeons are represented in the United States by at least six professional organizations. Most of these have developed (e.g., Society for American Gastrointestinal Endoscopic Surgeons) because new constituencies could not find a comfortable forum. This fragmentation makes no sense for the 1990s. Indeed, when any important medicopolitical issue has arisen recently, the key societies have responded by forming ad hoc multisociety committees; the Gastroenterology Leadership Council has recently made a considerable impact. Logic inevitably points toward the development of an integrating Society for Digestive Diseases. This is not a new idea, but the time has come. A common digestive disease society has evolved in Britain, where the scene is different in many ways (fewer specialists, a salaried service, and less money). A separate Endoscopy Society was disbanded in 1981 and integrated within the parent British Society of Gastroenterology with certain specific privileges.<sup>7</sup> The difficulties in integrating the various societies in the United States cannot



**Figure 4.** Professional relationships. (A) The present; gastroenterology is fragmented between traditional academic disciplines. (B) The future? Gastroenterology as the main focus.

be overestimated; however, neither can the risks of failing to act. If we do not collaborate more effectively, digestive diseases will become a professional battleground and the most likely losers are the current medically trained endoscopists.

The fundamental question concerns professional allegiance. Do we see ourselves primarily as surgeons, interns, and radiologists with an interest in gastroenterology or as digestive disease specialists with varying training and skills (Figure 4)?

I have been fortunate in having enormous encouragement and support from distinguished gastroenterologists, surgeons, and radiologists throughout my career; it would not otherwise have survived. Not everyone has been so lucky; more importantly, I believe that many patients with digestive problems are not receiving appropriate care because of the rivalries perpetuated by outdated professional structures. New muscles have outgrown the old skeleton, and the body cannot function

optimally. We have a historic opportunity and responsibility to collaborate in designing a new framework for training and practice in digestive disease.

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