Clinical Topics

Gastrointestinal endoscopy: some perspectives

A KERR GRANT, H A J HARLEY

Abstract

Remarkable technological advances of fiberoptic endoscopy in the past two decades have produced important improvements in diagnosis and treatment of gastrointestinal and hepatobiliary disorders. These advances must be kept in perspective; continuing, critical assessment of their contribution to the management of patients is desirable. Endoscopy can have adverse effects on the total performance of departments of gastroenterology, on gastroenterology as a discipline, and even on the status of the medical profession in the community. Gastroenterologists need to show proficiency of performance and integrity of practice. Control may be achieved by certification, delineation of privileges, peer review, public accountability, and realistic financial returns for procedures. Records of a department of gastroenterology indicate that some control may be achieved by insistence on a consultation before decision on endoscopy. This may be a desirable alternative to endoscopy on demand. Undue emphasis on technology runs some risk of destroying the proper practice of consultant medicine.

"Technique: the very word is like a shriek of outraged Art. It is the idiot name given to effort by those who are too weak, too weary or too dull to play the game."—LEONARD BACON.

Recent decades have seen a great expansion of medical technology. It is reasonable to take stock periodically of the impact of these rapid advances on the practice of medicine and of their contribution to management of patients. It is prudent to assess carefully every new procedure and to ensure that its apparent advantages have been objectively compared with present, accepted methods of diagnosis and treatment. At times the rapidity of technical advances may outstrip their proper evaluation and adversely affect the practice of internal medicine, including gastroenterology. There is a danger of patients being processed down a production line, the only omission being adequate time spent in proper communication and in assessment of the total human being. Investigations and procedures should not be performed mainly because they are relatively safe and comfortable. This may sometimes be used as an argument for gastrointestinal endoscopy. Disciples of new techniques, and manufacturers of new endoscopes, can bring undue pressures to bear from vested interests.

Gastrointestinal endoscopy is a relatively recent technique. Bozzini¹ was the first gastrointestinal endoscopist to publish his findings in 1807. Subsequently there were many enthusiastic

practitioners of these procedures, but their value was limited by inadequate illumination, difficulty in traversing the tortuous reaches of the gastrointestinal tract, and comfort and safety of the patient. The advent of electricity, and the ingenuity and enthusiasm of experts such as Mikulicz-Radecki,² Morrell Mackenzie,³ and Nitze⁴ resulted in progress. This was limited until the early 1930s when Rudolf Schindler⁵ and Georg Wolf produced their infant—the Wolf-Schindler gastroscope—after a gestation period of nearly five years. This semi-flexible gastroscope allowed excellent viewing and relative safety and comfort. Various similar instruments were developed in following years, each with their modifications. In the era of semi-rigid gastroscopes the endoscopist still needed to seduce himself and his patient into believing that the stress to the former, and possible trauma to the latter, was a sufficient justification for the examination. This may, at times, have been an advantage, since the ease of fiberoptic endoscopy may encourage its performance without adequate indications and by the inexperienced. This concern was expressed by Kern⁶: "There is a reason to believe that . . . the practice of gastroenterology is not in balance; specifically, that the performance of procedures has become our major professional activity."

In recent years fiberoptic endoscopy has had a remarkable impact on the practice of gastroenterology. Diagnosis has become more precise. Therapeutic endoscopy has rapidly advanced in polypectomy, papillotomy, prosthesis insertion, and possibly in treating upper gastrointestinal bleeding. These advances have provided considerable benefits in patient morbidity, costs of hospital beds, and palliation. The explosion of gastrointestinal endoscopy can also have effects in the broader areas of medicine, and even in the community.

Impact on departments of gastroenterology

Obsession with the performance of endoscopic procedures can interfere with the total performance of departments of gastroenterology. Consultants and their trainees may spend most of their time in partly darkened rooms and lose the art of communication between themselves and their patients. The endoscopic work load, if uncontrolled, can swamp other important functions—for instance, proper opinions on diagnosis and treatment, performance of research, creative thinking, and educational activity. Some departments function solely by providing an endoscopy service. This practice has little to recommend it and can lessen the stature of gastroenterologists in the eyes of their colleagues in other areas of medicine. Suitable non-medical personnel could probably be taught to perform competent endoscopy by concentrated training over six months. If gastroenterologists wish the scene to develop in this way the community could be excused for regarding them as superfluous.

Against this must be set the contribution of an endoscopy service to the community. Holdstock *et al*⁷ found that open-access endoscopy was of doubtful value. As their study pro-

Gastroenterology Unit, Queen Elizabeth Hospital, Woodville, South Australia 5011

A KERR GRANT, MB, FRACP, senior director
H A J HARLEY, MB, BS, senior registrar

gressed, the waiting list for endoscopy became longer, destroying its comparative value with radiology in this area; there was little diminution in requests for the latter, and little apparent influence on patient management. Beavis *et al*⁸ made a careful assessment of the contribution of a one-visit upper gastrointestinal investigative clinic. Only five of 205 patients did not have an endoscopy after a consultation. Although a high proportion of positive findings was recorded, many were of minimal or no significance. Possibly the demonstration of definite organic disease might have been achieved more selectively. Beavis *et al* had indicated earlier that clinical assessment before endoscopy will lead to the diagnosis of other non-gastroduodenal disease.⁹ There may be a place for prospectively comparing all aspects of the value of a one-visit clinic with that of consultation followed by endoscopy at a later date. Salter¹⁰ believes that there should be a pragmatic approach to the use of all investigations, including endoscopy; the latter should be kept to a minimum to establish a working diagnosis and the effecting of a plan of management.

Our gastroenterology unit started functioning in 1964. The staff of the hospital accepted the principle that no specialised gastrointestinal investigation would be performed without a prior consultation to determine if the investigation was justified. This principle is still accepted. The figures for consultations and initial upper gastrointestinal endoscopies since 1966 are indicated in fig 1. These include patients with upper gastrointestinal bleeding. Figure 2 gives the relative percentages of endoscopies to consultations. The pattern of disease referred to the unit

since 1966 has not changed appreciably. A rise in both consultations and endoscopies occurred during 1972 when a fiberoptic duodenoscope first became available. The percentage performance of endoscopy in the last four years has, however, declined, which would suggest that critical assessment is an important factor in the performance of the unit.

Costs of endoscopy services

Expense should not interfere with the delivery of expert medical care, but such altruistic arguments are not always convincing to those who hold the purse strings. There have been attempts to assess costs,^{11 12} but cost effectiveness is difficult to determine, especially in relation to individual patients. In hospital environments increasingly tight controls on expenditure can create lines of division between individual departments if requests for slices of the financial cake are not justified or kept within reason. Excessive requests for medical and paramedical staff, new equipment, and replacement items may often be argued from an attitude of almost righteous self-interest. The costs of an upper and lower gastrointestinal endoscopy service have been estimated in our unit over a four-year period from 1 July 1977. The approximate annual figures were 1230 upper gastrointestinal endoscopies (plus endoscopic retrograde cholangiopancreatography and 290 colonoscopies and polypectomies). The salary expenses of staff related to endoscopy service time total A\$41 920 (senior staff A\$17 170, trainee staff A\$7850, procedural staff A\$15 200, and secretarial staff A\$1700). The total expenditure comes to A\$85 020 (salaries A\$41 920, new equipment A\$12 400, repairs equipment A\$6700, minor equipment A\$1500, drugs etc A\$8000, and day beds A\$14 500). Eight day beds are used for procedures other than endoscopy. Repairs to, and purchases of, equipment are inversely related and have been averaged over the four years. The annual expenditure of A\$85 020 is an appreciable fraction of the total allocation of finance to the unit (A\$280 000). The cost per endoscopy of A\$56.00 is reasonable, however, since it includes training and more complicated therapeutic procedures.

Effects on the community and on health services

In many countries the financial returns for procedures are greater than for an in-depth consultation. This results partly from the development of medical and surgical specialties and the promotion of their importance by the media and other areas. These increased returns are partly justified by the expense of equipment and supporting services, but these are not in proportion. Material rewards can influence decisions on the justification for endoscopy, especially among the unscrupulous. A properly performed consultation requires more training, more intelligence, more experience, and more understanding than an endoscopy. The medical profession must not encourage the community to believe that the latter is of more value than the former. Such an attitude will bring the whole profession into disrepute, especially within the community and with health administrators. There is a growing awareness, at least in Australia, that the profession should be more sensitive to the importance of professional contact as opposed to technical contact.

Quality assurance

Several reports have indicated that the performance of gastrointestinal endoscopy should be properly controlled. The Committee on Applications and Costs of Modern Technology in Medical Practice (established by the Australian Government in 1977)¹³ stated: "It is preferable for the use of endoscopy to be confined to clinical situations in which most benefit will be obtained—that is, where the indications for endoscopy are well

FIG 1—Total number of consultations and first endoscopies: 1966-80.

FIG 2—Percentage of first endoscopies to consultations: 1966-80.

understood." The report of the British Society of Digestive Endoscopy¹⁴ indicated: "Endoscopy is not a specialty within its own right but must be regarded as an essential facet of gastroenterology." Gastroenterologists have a responsibility to ensure these principles within their own discipline and within the medical community. Failure to meet these obligations will lower the standing of the profession. The ease of performance of gastrointestinal endoscopy, without proper supervision of standards, must cause concern. In Australia, North America, Europe, and possibly now in the United Kingdom any person with a medical degree can pass an endoscope down, or up, the gastrointestinal tracts of unsuspecting patients. Delineation of hospital privileges may exert some control, but this is ineffective since endoscopy is an outpatient procedure. In many of these countries there is no requirement to show either competence or integrity of performance. The prospect of considerable financial returns can create an open invitation to unnecessary endoscopy. The community may well demand a tighter control. Certification of competence to perform gastrointestinal endoscopy provides part of the answer. It must be recognised, however, that even those certified can be influenced by financial reward. Control of standards may be difficult to police in a private health care system, and the profession has an obligation to ensure that its house is in order. Control of standards may be maintained only by a variety of measures—delineation of hospital privileges, peer review in a hospital environment, accountability in the private medical scene, and even administrative surveillance. Reduction of financial return for procedures may exert some control, as suggested by Kern.⁶ The first move should be certification of competence to perform gastrointestinal endoscopy. The Gastroenterological Society of Australia initiated this in 1979. It is essential that administrative authority supports this indication of responsibility, but there has been some surprising disinterest from these bodies. It is to be hoped that they will lend their support to the profession's attempts to ensure proper quality assurance.

Impact on gastroenterology as a discipline

The development of endoscopy in the late 1960s and 1970s created an understandable desire that endoscopists should have a stronger voice in the affairs of societies of gastroenterology. This has created lines of division in these organisations to their detriment, and a fragmentation of interests within an important discipline of internal medicine. The danger of these divisions was expressed by Brooks¹⁵: "The large size of our organisation (American Gastroenterological Association) and the perceived preoccupation of the AGA leadership with laboratory research and academic concerns has led some of our number to look to other societies for identification as gastroenterologists or to withdraw into passivity." Continued, frank communication is necessary if gastroenterologists wish to avoid the fragmentation that has occurred in medicine in general. The recent union between the British Society of Gastroenterology and the British Society of Digestive Endoscopy is commended. The Gastroenterological Society of Australia has probably avoided this danger by the formation of a subcommittee of gastrointestinal endoscopy, which is responsible to council of the society. This subcommittee has an important voice in matters of certification, standards, and education.

Conclusion

The practice of gastroenterology, as a discipline of internal medicine, demands a complete and exhaustive training in the art and science of consultant medicine. Gastroenterologists can be very competent as consultants without any expertise in gastrointestinal endoscopy. Nevertheless, the expanding technique of both upper and lower gastrointestinal endoscopy plays a most important part in the correct management of a wide

variety of gastrointestinal disorders. These advances must be kept in proper perspective in relation to the discipline of gastroenterology, and in relation to internal medicine. Neither material, professional, nor intellectual rewards should interfere with the proper practice of medicine. Gastroenterologists, as consultant physicians, have an obligation to demonstrate their professional integrity and responsibility. Medicine, as never before, is standing at the cross-roads between professionalism and technology. It will be disastrous if the latter is embraced to the destruction of the former.

This paper is a rewritten and abridged version of the Endoscopy Foundation Lecture delivered at the British Society of Gastroenterology meeting in Exeter, on 25 September 1981 by AKG, who expresses his sincere appreciation for the honour of being invited to deliver this lecture. We thank the board of the Queen Elizabeth Hospital for permission to publish this paper, and all members of the staff of the hospital for support over many years. Mrs Brenda Clark has been untiring in her typing of the manuscript.

References

- 1 Bozzini P. *Der lichtleiter. Verlage des Landes-Industries-Comptoirs*. Weimar: 1807.
- 2 Mikulicz-Redeck J von. Ueber gastrokopie. *Wien Medizin Presse* 1881; 22:1410.
- 3 Mackenzie M. Original communications on the use of the oesophagoscope in disease of the gullet. *Medical Times Gazette* 1881;2:60.
- 4 Nitze N. Eine neue beobachtungs und untersuchungs methode fuer harnrohre, harnblase und rectum. *Wien Med Wochenschr* 1879;29: 649-54.
- 5 Schindler R. Gastroscopy with a flexible gastroscope. *Am J Dig Dis* 1936; 2:656-63.
- 6 Kern F Jr. Gastroenterology—1976: good news and bad news. *Gastroenterology* 1976;71:537-41.
- 7 Holdstock G, Wiseman M, Loehry CA. Open-access endoscopy service for general practitioners. *Br Med J* 1979;i:457-9.
- 8 Beavis AK, La Brooy S, Misiewicz JJ. Evaluation of one-visit endoscopic clinic for patients with dyspepsia. *Br Med J* 1979;i:1387-9.
- 9 Beavis AK, La Brooy S, Misiewicz JJ. Open-access endoscopy service for general practitioners. *Br Med J* 1979;i:752.
- 10 Salter RN. Upper-gastrointestinal endoscopy in perspective. *Lancet* 1975; ii:863-4.
- 11 Holdsworth CD, Bardhan KD, Balmforth GV, Dixon RA, Sladen GE. Upper gastrointestinal endoscopy: its effects on patient management. *Br Med J* 1979;i:775-7.
- 12 British Society of Digestive Endoscopy. *Memorandum on future national needs for fibre-optic endoscopy of the gastrointestinal tract*. Hinckley, Leics: Samuel Walker Ltd, 1973:14-20.
- 13 Committee on Applications and Costs of Modern Technology in Medical Practice. *Report*. Canberra: Australian Government Publishing Service, 1978:165-6.
- 14 British Society of Digestive Endoscopy. *Memorandum on future national needs for fibre-optic endoscopy of the gastrointestinal tract*. Hinckley, Leics: Samuel Walker Ltd, 1973:6.
- 15 Brooks FP. A message from the president. *American Gastroenterological Association News* 1980;14:1-2.

(Accepted 8 July 1982)

Does a standard face mask protect the wearer against tuberculosis in the tuberculosis wards?

Tubercle bacilli can survive dessication in dust for long periods if protected from direct sunlight. Thus sputum from heavily infected patients, particularly those with drug-resistant infections, may contaminate bedding and be hazardous to staff on tuberculosis wards. The proper protection of staff requires that they should be tuberculin tested before employment, preferably by the Mantoux test with 100 tuberculin units, and given BCG at least six weeks before employment if tuberculin negative. Standard face masks cannot be relied on to provide adequate protection in such conditions but may be useful in reducing the risk of exposure to very infective patients both from coughing and droplet infection and from dust during such procedures as bed making.—JOHN MORRISON SMITH, honorary consultant physician, Birmingham.