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Percutaneous endoscopic gastrostomy

The end of the line for nasogastric feeding?

Too often in medicine the sheer enthusiasm generated by technological advance has overtaken proper clinical evaluation. Although the randomised controlled clinical trial is one of the glories of medical science, there is an increasing trend for radical new treatments to be adopted as standard without being subjected to such critical scrutiny.

The technique of percutaneous endoscopic gastrostomy was introduced in 1980 to provide enteral nutrition¹ and became commonplace in North America though less so in the United Kingdom. Although many uncontrolled series have reported its efficacy,^{2,4} we have had to wait until now for a controlled trial of the procedure (p 1406).⁵

Park and colleagues compared the success of an endoscopically sited percutaneous gastrostomy with a conventional nasogastric tube in establishing enteral nutrition in patients who had neurological swallowing disorders. Over four weeks, feeding was sustained in all the patients randomised to gastrostomy but in only one of 19 patients in whom nasogastric feeding was attempted. The dismal results for the nasogastric route will not surprise nurses and junior doctors familiar with the problem of tubes that are difficult to site, become displaced, or are pulled out or blocked. In this study these complications occurred in 16 patients in whom nasogastric tubes were used, and in two further instances patients simply refused to continue with this treatment.

Percutaneous endoscopic gastrostomy was developed as an alternative to surgically created gastrostomy, thus avoiding an operation under general anaesthesia in patients who are often frail and elderly. Operative gastrostomy may be hazardous even in skilled hands and has a substantially greater morbidity and mortality than the endoscopic procedure.⁶ Advantages of endoscopic gastrostomy include the need for just local anaesthesia, a short procedure time (20 minutes or so), the avoidance of using an operating theatre, and a reduced cost.

The technique of endoscopic gastrostomy should be within the competence of most accomplished gastrointestinal endoscopists, who, over the years, have become accustomed to carrying out ever more complex interventional procedures.⁷ Two operators are required. The first passes the endoscope by mouth into the stomach. The site for insertion of the gastrostomy tube is identified by transillumination from within as the stomach is closely applied to the anterior abdominal wall. The second operator passes a cannula through the skin into the stomach and guides a thread into the gastric lumen which is then grasped by the endoscopist using forceps and then drawn back through the mouth. The gastrostomy tube is tied to the thread and is then pulled

through the mouth, into the stomach, and back out through the abdominal wall, where it is secured in place. The tube should not be used for 12 hours. If water passes freely an enteric feeding regimen may be started 6-12 hours later.

Some patients are unsuitable for endoscopic gastrostomy. The procedure should be avoided in patients with portal hypertension and ascites, those predisposed to bleed or taking anticoagulants, and those with active gastric ulceration. Previous abdominal surgery may present formidable technical problems in inserting the tube. Apart from the possible complications of upper gastrointestinal endoscopy, the procedure is associated with certain special problems—the most serious of these being peritonitis. This usually presents within the first 24 hours but is uncommon. Antibiotic prophylaxis may lessen the risk, and peritonitis was seen in only 1% of patients in a recent large series.⁸ More commonly, superficial infection may surround the tube site, and the tube may become displaced. These complications occurred, respectively, in 6% and 4% of patients.⁸

The main indication for enteral nutrition is difficulty in swallowing in patients with neurological disease. Pulmonary aspiration is a serious hazard for those who are unable to protect their airway, yet it is precisely these patients in whom some form of nutrition must be established. Aspiration is well recognised with nasogastric feeding and may be reduced but certainly not abolished by percutaneous gastrostomy.^{9,10} Of the 19 patients with neurological dysphagia studied by Park *et al*, two developed aspiration pneumonia.⁵ In another study, however, none of 30 patients with a range of neurological lesions developed pneumonia during 6-12 months of feeding by gastrostomy.⁸

Most importantly, however, the clear superiority of gastrostomy feeding over the nasoenteral route is in allowing patients to receive sustained nutritional support. Successful tube insertion, which occurs in more than 95% of cases in large series, improves body composition and nutritional status with sustained weight gain being the rule during follow up of a year or more. Many patients who were malnourished when they were switched from nasogastric tube to gastrostomy experienced considerable improvements in body mass index within a month of receiving adequate nutrition.⁶

Long term nasogastric feeding may result in nasopharyngeal sepsis and erosion of the oesophageal wall,^{11,12} and it is unpleasant for patients. The implication of Park and colleagues' study is for those patients who, instead of a nasogastric tube, could benefit from a gastrostomy. Although most gastroenterologists should be able to learn the technique,

it is very far from being universally available. Its routine use for patients who cannot swallow should prevent the degrading spectacle of elderly, undernourished patients with their hands bandaged to the side of the bed—to prevent inadvertent removal of a nasogastric tube—in a usually fruitless attempt to support nutrition.

IAN FORGACS
Consultant Physician
ANDREW MACPHERSON
MRC Clinician Scientist
CHRISTOPHER TIBBS
Senior Registrar

Department of Gastroenterology,
King's College Hospital,
London SE22 8PT

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Implementing the patient's charter in outpatient services

Will require organisation, discipline, and perhaps more resources

Meeting the rights and standards of the patient's charter¹ will require radical changes in many parts of the health service, particularly in the conduct of outpatient practice in hospitals where the demand for outpatient services is high. "A clear explanation of any treatment proposed, including any risks and alternatives," takes time.^{2,3} "A specific appointment time within 30 minutes of which the patient will be seen" takes organisation and discipline. Each specialty clinic will have to develop rigid booking patterns to reflect these needs.

An average of 20 minutes has been suggested as the time it takes to see each new patient referred to general surgical outpatients clinics; 10 minutes should be allocated for each follow up appointment.⁴ This time is required to take a history from and examine the patient, explain any treatment, make notes, complete data entry sheets, and dictate letters to referring doctors. Specialties will vary in how long it takes to provide a consultation of the requisite quality. In specialties without senior experienced deputies consultant clinics should be booked for no more than 44 weeks of the year to allow for consultants' annual and study leave, thereby reducing the need to cancel or rearrange clinics at short notice.

Outpatient practice should be structured around the need for a consultant's opinion. The number of patients followed up should fall: over two million such patients were seen in general surgical outpatient clinics in 1989, and many of these appointments were probably of doubtful benefit to the patients⁵ and unnecessary because general practitioners are willing and able to do much of this work.^{6,7} By judicious use of indirect contact with patients by letter or telephone doctors can check the effects of their interventions without the patients having to attend the outpatient clinic and unnecessary use of scarce outpatient clinic time.⁸

Guidelines for referring patients from general practice can also lead to better use of clinic time.⁹ One such handbook for referral, the *Somerset Pink Book*,¹⁰ includes protocols for using open access endoscopy and diagnostic imaging facilities and advises general practitioners that certain patients may have a minor operation or special tests before or sometimes instead of an outpatient consultation.

Meeting the standards of the patient's charter will require not only time and organisation but also discipline. Generally, consultants are reluctant to refuse a request from another

doctor to see a patient urgently or to expedite an appointment. Such patients can be accommodated without disruption only if an appropriate number of appointment times are left free. This is at the expense of routine patients, for whom the time from referral to appointment invariably lengthens further. This may be why the patient's charter omits to put a limit on the time between referral and the first outpatient appointment—a limit of 13 weeks had been confidently expected—and leaves it to local health authorities to implement. To meet this requirement hospital units would need not only to reorganise the provision of outpatient services within existing resources but also to identify the need for extra consultant teams.

After the injection of government funds to deal with long waiting lists for inpatient surgery the next target may be the long waits for outpatient consultation. Hospital units will be expected to formulate schemes to reduce these times. Calculating the extra resources needed will be helped by guidelines specific to individual specialties, such as those of the Royal College of Surgeons, which recommend that one consultant surgeon with a standard support team can see 1000 new referrals from general practitioners each year.¹¹

Implementing the patient's charter may help to make explicit the gap between the level of service which is required by the purchasers and that which providers can offer. In specialties that are currently overwhelmed extra resources and consultants will be the only solution.

CHARLES COLLINS

Medical Director, Taunton and Somerset Hospital,
Taunton, Somerset TA1 5DA

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