Leading article

The changing face of treatment for hiatus hernia and gastro-oesophageal reflux

It is paradoxical that recently the number of operations for gastro-oesophageal reflux and hiatus hernia has increased dramatically even though extremely effective medication for these conditions is now available in many, if not all, Western countries.^{1a} The traditional indications for antireflux surgery still exist but they have been impacted upon by cultural factors, cost, and associated serious disease; so why do more people require surgery?

The most common indication for surgery used to be the failure of medical treatment in severely symptomatic disease; however, so effective are proton pump inhibitors (PPIs) at controlling the major symptom of reflux—namely, heartburn, that this is a less common reason for performing surgery today. Indeed, the failure of a patient to get some degree of symptomatic relief from an adequate dosage of PPIs should alert the surgeon to other problems—for example, bile reflux, irritable colon, functional dyspepsia, or gallstones. Yet, successful medical treatment is often indefinite in duration and many patients do not wish to be on medication for the rest of their lives; such patients are often considered for surgery. Lifelong medication is also costly, and surgery may be the cheaper option in the long term.¹

Stricture formation used to be another common indication for surgery, but PPI treatment has proved so successful that this is now rarely seen. Many patients are elderly and their predominant problem is dysphagia, which is usually effectively treated with PPIs and dilatation. A further indication for surgery—that is, regurgitation or high volume reflux, is now seen more often. It is possible that the successful treatment of heartburn through the use of PPIs has decreased awareness of reflux and the patient has thus allowed more fluid to regurgitate; as a consequence more patients are presenting with volume regurgitation as their main problem.

Surgery as a result of patient and/or physician directed choice has also become more common since the introduction of laparoscopic surgery because patients no longer face long and painful incisions with prolonged hospital stays and time off work. There are reports of antireflux surgery performed as a day case procedure, with most patients out of hospital in two or three days and back at work within a few weeks of the operation.^{2,3}

A new, more controversial indication is the relation between reflux, columnar lined oesophagus, and adenocarcinoma. There is an argument that fundoplication should be considered at an earlier stage in the management of patients with reflux, so that the complications of Barrett's oesophagus and its evolution into an adenocarcinoma of

the distal oesophagus can be prevented. This hypothesis is based on evidence that the development of Barrett's oesophagus is caused by the influence of duodeno-oesophageal reflux, which is not effectively controlled by antisecretory medication. Although earlier fundoplication has obvious appeal to surgeons, this hypothesis is, as yet, unsupported; in our opinion, the possible prevention of Barrett's oesophagus and adenocarcinoma of the oesophagus is not yet an acceptable indication for surgery.

The reduction in morbidity resulting from laparoscopic antireflux surgery has been most noticeable in the treatment of giant hiatus hernias (intrathoracic stomach). These hernias can strangulate, cause anaemia or overt bleeding, and other symptoms such as chest pain or breathlessness after meals. Previously, surgery for giant hiatus hernias has been controversial because many patients with this condition are very old. However, because the majority of such hernias can be treated with a relatively straightforward laparoscopic procedure,^{4,5} a greater number of patients with this condition are now being referred for surgery before the hernia grows too large.

Laparoscopy for antireflux surgery was first reported in 1991.⁶ The development phase allowed instrumentation and techniques to be refined, operating times to be shortened, and learning curve problems to be recognised and overcome; laparoscopic surgery for reflux has since become commonplace. In some centres, follow up extends for up to five years, and prospectively evaluated single centre experiences of more than 300 procedures have been reported.^{7,8} The published results of laparoscopic antireflux surgery, irrespective of the type of fundoplication, confirm the efficiency of the laparoscopic approach.^{3,7,8} Furthermore, in comparison with an open approach, laparoscopy controls reflux symptoms well, and medium term outcomes have not been compromised.^{9,10} Moreover, the overall incidence of perioperative complications has been reduced, and the length of hospital stay shortened to two or three days. These outcomes have also been confirmed in randomised trials of open versus laparoscopic Nissen fundoplication.^{11,12}

Nevertheless, complications can occur following laparoscopic antireflux surgery. Mostly minor, such complications resolve rapidly and do not impact on the long term outcome of surgery. The risk of acute postoperative para-oesophageal hiatus herniation and acute dysphagia has been highlighted,^{13,14} but standardisation of surgical technique with routine hiatal repair, improved surgeon

Abbreviations used the paper: PPI, proton pump inhibitor.

awareness of potential complications, and better appreciation of laparoscopic anatomy have all contributed to a significant reduction in postoperative problems.³

The risk of postoperative dysphagia creates considerable anxiety for surgeons, gastroenterologists, and patients. It occurs almost universally in the early postoperative period, but only affects a minority of patients beyond the first year after operation, and in these patients dysphagia is usually mild.⁸⁻¹⁵ The long term incidence is about 5%, although this rate varies depending on whether the follow up data are collected by the operating surgeon or by an independent investigator. Additionally, the postoperative incidence of dysphagia should be compared with the incidence of dysphagia in patients with reflux who are awaiting surgery; the preoperative rate has been reported to be up to 40%.¹⁵⁻¹⁷

The literature concentrates on adverse outcomes rather than good results after surgery, making it easy to overlook the fact that more than 90% of patients who have surgery for reflux are happy with the outcome. Much of the debate over technique is centred around comparisons between uncontrolled case series. However, evidence from prospective randomised trials has recently become available. Although trials which compare Nissen with partial fundoplication performed by either open¹⁸ or laparoscopic techniques¹⁹ have shown no clear advantages for a posterior partial fundoplication, a recent trial has shown that the likelihood of adverse short term outcomes is reduced by performing an anterior partial fundoplication.¹⁶ Moreover, two further trials have not shown any advantages for division of the short gastric vessels during Nissen fundoplication.^{17, 20} The overall outcome of these studies suggests that much of this debate is overstated, with the most important determinant of a good outcome likely to be the experience of the surgeon performing the operation.³

Large hiatus hernias can cause chest pain because the stomach becomes trapped in the chest, and the more severe cases can be life threatening owing to compromise of the gastric blood supply. Even though patients presenting with this problem are, on average, 20 years older than patients presenting for reflux surgery and often have substantial co-morbidity, laparoscopic repair is usually feasible. Recent series of more than 50 patients undergoing laparoscopic repair for giant hiatus hernias have confirmed the safety and efficacy of this approach, and highlighted the need for early referral so that elective laparoscopic repair can be facilitated.^{4, 5}

Most surgeons assess oesophageal motility before performing an antireflux procedure. This is useful because some conditions—for example, achalasia, can be misdiagnosed as reflux. However, patients with deficient oesophageal peristalsis are suitable candidates for surgery and some surgeons will select a partial fundoplication technique for patients with poor motility, although poor oesophageal motility is thought by some physicians to be a contraindication for fundoplication.²¹ The partial approach is not supported by evidence from controlled trials, and two recent studies have shown that an excellent outcome can be achieved with laparoscopic Nissen fundoplication in patients with poor oesophageal motility.²²⁻²³

Most surgeons see medical and surgical treatment as having complementary roles, although some physicians see them as being in competition. Laparoscopic antireflux surgery should be considered in patients who need long term treatment, as surgery may be more cost effective than long term PPIs, particularly in younger patients. After surgery, symptom control is excellent, and side effects are usually infrequent. However, many patients taking PPIs develop recurrent symptoms²⁴ and need an increasing dose to remain symptom-free. Nevertheless, surgery may be inap-

propriate for patients whose symptoms are easily controlled by changes in their lifestyle, or by intermittent courses of antisecretory medication. Therefore, it is likely that patients with mild to moderate reflux will be medically treated, and surgery will be considered for those with more severe disease, or for younger patients who would otherwise need lifelong medication. All patients in this latter category should have the opportunity to discuss surgical treatment with a clinician interested in the laparoscopic management of reflux disease.

The treatment algorithms for reflux have now changed, with the development of reliable laparoscopic surgical techniques, as well as more potent medical treatments. Most patients with gastro-oesophageal reflux should now expect appropriate treatment to provide a good level of symptom control.

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