

CLINICAL @LERT

Should abnormal oesophageal motility in gastro-oesophageal reflux disease (GORD) influence decisions about fundoplication?

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Does abnormal oesophageal motility in gastro-oesophageal reflux disease affect the outcome of laparoscopic fundoplication?

Is it important to perform oesophageal function tests before surgery for gastro-oesophageal reflux disease (GORD)? For some years now, oesophageal manometry and a pH study have formed part of the “work up” of GORD patients being considered for fundoplication, supposedly (i) to ensure that the diagnosis of GORD is correct, (ii) to allow surgery to be “tailored”—a partial wrap fundoplication being performed in patients with especially poor oesophageal motility to minimise the risk of postoperative dysphagia,^{1–3} and (iii) to obtain preoperative data so that the success of treatment can be appraised from postoperative measurements in the same patient. As technology has advanced, the increasing complexity of manometry reports and 24 hour pH data have allowed impressively detailed documents from the oesophageal laboratory to be inserted into each patient’s case notes but also raise some questions about whether all of these numbers really contribute to clinical decisions about antireflux surgery.

This work by Fibbe *et al* from Hamburg is the latest and best designed of several studies published in the last few years that have shown preoperative oesophageal manometry to be of no value in predicting the occurrence of dysphagia after fundoplication.^{4–6} Moreover, postoperative dysphagia was not reduced by using a partial wrap instead of a complete wrap in patients with preoperative evidence of impaired peristalsis. Although there is some evidence that supports the appealing concept of tailoring a patient’s surgery to preoperative physiological findings,^{1,2,7} the results of Fibbe *et al* agree with a previous randomised trial⁶ that found no advantage in using preoperative manometry to guide the choice of wrap.

These observations are directly relevant to clinical practice but other findings reported by Fibbe *et al* offer additional food for thought and perhaps also point the way for further research. Noting that abnormal oesophageal body motility was unrelated to the presence of

Fibbe C, Layer P, Keller J, *et al*. Esophageal motility in reflux disease before and after fundoplication: a prospective randomized, clinical and manometric study. *Gastroenterology* 2001;121:5–14.

Background: The role of impaired oesophageal motility, which is found in up to 50% of patients with severe gastro-oesophageal reflux disease (GORD), is unclear. Some studies have suggested that fundoplication can correct the motility disturbance and that tailoring the type of fundoplication will improve the clinical outcome.

Aims: To determine whether (i) oesophageal dysmotility is associated with severity of GORD symptoms and outcome of fundoplication and (ii) whether a complete (Nissen) or partial (Toupet) fundoplication improves oesophageal dysmotility.

Study design and setting: Randomised controlled trial in single German teaching hospital.

Methods: A total of 200 patients (median age 56 years) with GORD who had undergone an endoscopy, oesophageal manometry, and 24 hour pH monitoring prior to surgery were stratified according to the presence or absence of oesophageal dysmotility and then randomised to either a Nissen or Toupet laparoscopic fundoplication. Four months after operation patients were reassessed and had repeat endoscopy, manometry, and pH testing performed by a single observer unaware of the surgical procedure.

Results: Preoperative dysmotility was associated with more severe reflux symptoms, more frequent resistance to medical treatment (64% v 49%; $p < 0.05$), and a greater decrease in oesophageal sphincter pressure compared with normal motility (9.5 v 12.4 mm Hg; $p < 0.005$). Nevertheless, postoperatively, clinical outcomes and reflux recurrence (21% v 14%) were similar in those with and without dysmotility. Oesophageal motility remained unchanged in 85% of patients, was normalised in 20 (10 Nissen/10 Toupet), and became abnormal in nine (eight Nissen/one Toupet).

Conclusions: Oesophageal dysmotility: (1) reflects more severe disease; (2) does not affect the postoperative outcome at four months; (3) is not corrected by either type of fundoplication; (4) may develop as a result of fundoplication; and (5) requires no tailoring of surgical management.

oesophagitis or GORD duration, consistent with the concept that it is a primary phenomenon, they suggest that at least some of the changes in oesophageal motility after fundoplication are a consequence of oesophageal outflow resistance. In patients with normal motility preoperatively, dysphagia and peristaltic failure followed the Nissen procedure more often than the Toupet. However, neither preoperative dysphagia nor postoperative new onset dysphagia was consistently associated with motor abnormality in the oesophageal body, inviting the conclusion that standard manometric techniques are inadequate to detect

the responsible dysfunction. This is an important message: Fibbe *et al* have provided unequivocal answers to the primary questions they have asked but have also demonstrated that straightforward manometry is incapable of resolving many of the questions that remain. Dysphagia in the context of GORD presumably occurs as a consequence of impaired bolus transit and we now need to spend more time studying transit than oesophageal contraction patterns alone. What of the lower sphincter/high pressure zone? An attempt to understand dysphagia in GORD, especially postoperatively, must look at the dynamics of

lower sphincter relaxation, intrabolus pressure just above the sphincter, and transit of the bolus through it.

In taking this subject further, we must also grapple with the problem of how to assess and categorise dysphagia in a way that begins to match the sophistication of the physiological measurements we can now make. Is the dysphagia intermittent or persistent? For liquids as well as solids? Do some patients report "no dysphagia" because self imposed dietary restrictions have kept it at bay? Do others experience dysphagia mainly because of the way they eat and swallow?⁸ There are other uncertainties too, obviously, but there are as many inadequacies and oversimplifications in our current assessments of dysphagia as there are limitations associated with standard oesophageal manometry.

It is self evident that the diagnosis of GORD should be certain before antireflux surgery is undertaken. In patients

being considered for operation, manometry and pH testing using currently available standard methods can contribute to confirmation of this diagnosis and will identify the rare diagnostic surprise, such as previously unrecognised achalasia or scleroderma, which may prompt a rethink about surgery. However, neither preoperative nor postoperative dysphagia in the GORD patient is being adequately explained by our current evaluations of oesophageal function. A better understanding of the mechanisms causing dysphagia is needed if we are to minimise and perhaps prevent its occurrence postoperatively.

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