Figure 1 Insertion of needle into bowel lumen.

operative leakage.¹ The following technique can be performed intra-operatively to assess the integrity of small and large bowel anastomoses.

TECHNIQUE

Non-crushing bowel clamps are placed 10 cm proximal and distal to the anastomosis. A 21-G (green) hypodermic needle, attached to a 20-ml syringe filled with air, is inserted approximately 5 cm proximal to the anastomosis in a 'step-wise' manner through the layers of the bowel wall until the lumen is entered (Fig. 1). The air is then expelled into the lumen and passed across the anastomosis by gently squeezing the distended bowel proximally and distally in turn. Air leakage at the anastomotic site is clearly apparent both visually and audibly and is indicative of incomplete integrity.

DISCUSSION

Whilst the integrity of distal anastomoses may be checked by distending the rectum with saline² or by performing a 'Jacuzzi' test,³ this is impractical more proximally. Small bowel and colonic anastomoses may be tested by 'milking' intraluminal contents across them. However, this may cause disruption by placing unnecessary tension on the anastomosis, and by potentially compromising its local blood supply. The syringe test can be performed anywhere along the intestine and avoids excessive iatrogenic trauma directly at the anastomotic site. The introduction of the needle in a 'step-wise' manner through the bowel wall creates a 'self-sealing flap' that prevents luminal leakage and contamination of the operative field after removal, as previously described during decompression of obstructed, distended bowel.⁴

References

1. Beard JD, Nicholson ML, Sayers RD, Lloyd D, Everson NW. Intraoperative air testing of colorectal anastomoses: a prospective,

randomised trial. *Br J Surg* 1990; **77**: 1095–7.

2. Dixon AR, Holmes JT. Colorectal anastomotic integrity after anterior resection: is there a role for intraoperative testing? *J R Coll Surg Edinb* 1991; **36**: 35–6.
3. Davies AH, Bartolo DC, Richards AE, Johnson CD, Mortensen NJ. Intraoperative air testing: an audit on rectal anastomosis. *Ann R Coll Surg Engl* 1988; **70**: 345–7.
4. Lowdon AGR. Deflation of distended bowel at operation. *Lancet* 1951; **1**: 1103–4.

Open surgical insertion of gastric feeding tube under local anaesthesia

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BACKGROUND

General anaesthesia is high-risk in patients with complete oesophageal outlet obstruction preventing conventional percutaneous endoscopic gastrostomy (PEG) or radiologically inserted gastrostomy (RIG) insertions. We describe using local anaesthesia and an open surgical technique. This technique is well-tolerated by patients

TECHNIQUE

The local anaesthetic mixture is 30 ml bupivacaine 0.5% with adrenaline and 20 ml 1% lidocaine made up to 100 ml with saline. Sedation with 2.5–5 ml midazolam is helpful. The patient has a 4-cm transverse incision over the midline superior to the trans-pyloric plane. The peritoneal cavity is entered and the bed tilted head-up to lower the stomach. The stomach wall is anaesthetised locally and held in 'Babcocks' tissue holding forceps. Using a 'Seldinger' technique, a needle and wire is inserted through the anterior abdominal wall and into the stomach. The needle is removed and the guide wire pulled into the abdominal cavity. A 5-mm laparoscopic port is passed through the anterior abdominal wall to act as a dilator. The wire is passed back out through the port and the port removed. A lubricated gastric feeding tube (Corflo – Dual GT gastrostomy tube; Merck Pharmaceuticals, UK) passes over the wire into the peritoneal cavity. The guide wire is removed. The gastrotomy is opened slightly to allow the gastrostomy tube to enter the stomach easily and the balloon inflated.

DISCUSSION

To reduce patient discomfort, minimal diathermy is used and minimal traction is applied to the stomach wall. A large volume of diluted local anaesthetic mix is essential.