Reducing the risk of trocar site hernias

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Secondary tracheo-oesophageal puncture using an endotracheal tube

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BACKGROUND

Trocar site hernias (TSHs) can affect the outcome of laparoscopic surgery in 0.2–3.1% of cases.^{1–3} Factors influencing the development of TSHs include: the number and diameters of trocars; a peritoneal defect greater than the trocar size; midline insertion; the type of trocar tip; manipulation of the trocar site; methods of entry and closure; operative time; infection at the trocar site.^{3,4}

TSHs may have an early or late onset.² In early onset TSHs, viscera herniate through the peritoneal defect in the first few days after surgery. In late onset TSHs, the peritoneum remains intact and viscera herniate with the peritoneum. TSHs are usually asymptomatic. Occasionally, they can present with bowel obstruction that necessitates emergency surgery.

TECHNIQUE

We propose a simple and non-time consuming technique to repair fascial defects whenever they are indicated. Under direct reverse vision of the defect with a 30° laparoscopic camera, the measurement (using as a reference the size of the grasper branch [5mm]) can be undertaken readily. Alternatively, the size of the fascial defect can be measured directly using a sterile ruler. We suggest repair of fascial defects ≥ 8 mm independent of the trocar size used. Smaller defects have a very low prevalence of TSH and can be left in situ. We are aware that with our method of measurement we may repair more defects than is absolutely necessary.

DISCUSSION

Closure of the fascia for wounds >10 mm in diameter is essential.^{4,5} However, if the wounds are ≤ 10 mm in diameter, the decision regarding repair is controversial.¹ In fact, trocars that cause aponeurotic defects <10 mm in diameter rarely result in herniation or bowel obstruction.¹

References

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BACKGROUND

We describe a novel technique using an endotracheal tube to perform tracheo-oesophageal puncture in difficult patients.

TECHNIQUE

The endotracheal tube is sized according to the patient's oesophageal diameter. A 10mm window is cut in the anterior wall in the distal fifth of the endotracheal tube (Fig 1). The oesophagus is then cannulated with the endotracheal tube so that the prefashioned window lies against the posterior wall of the tracheal stoma at the site for the tracheo-oesophageal fistula, aided by inserting a fibreoptic nasendoscope. The Blom-Singer® valve (Forth Medical, Newbury, UK) is then inserted at the site for the puncture as guided by the light from the fibreoptic nasendoscope (Fig 2). In cases where this is technically difficult, a 12G Jacques catheter can be passed through the puncture site and through the oral cavity, and fixed to the other end, allowing maturation of the fistula.

Figure 1 Prefashioned window on anterior endotracheal tube wall