Redundant laparoscopic adjustable gastric band tubing causing internal hernia and small bowel obstruction

Erika Fernandes, James Tan, Glenn Farrant, Karl Kodeda

A 42-year-old female farmer presented to a provincial hospital in New Zealand with severe colicky central abdominal pain. Her past medical history included insertion of a laparoscopic adjustable gastric band (LAGB) seven years prior. Associated symptoms concerning for small bowel obstruction (SBO) were present. Full blood count and biochemistry were unremarkable, excepting a mild leukocytosis of 12.1x10^9/L. Computer tomography (CT) scan revealed a SBO without a clear transition point and raising the possibility of a closed loop obstruction (Figure 1). CT demonstrated satisfactory position of the gastric band.

The patient underwent an urgent laparotomy, which revealed a small bowel obstruction secondary to herniation at the root of the mesentry through a redundant loop of gastric band tubing with congested mesentery and small bowel (Figure 2). The tubing required disconnection from the subcutaneous access port in order to relieve the obstruction (Figure 3). No bowel resection was required. The band was deflated, tubing reconnected and the device left in situ. The redundant tubing was simply placed back on top of the bowel. The post-operative recovery was uneventful, the patient discharged on post-operative day two and the limited follow-up to date of two months without complications or recurrence.

Although declining in popularity, laparoscopic adjustable gastric banding has been a commonly performed bariatric procedure. Compared to other forms of bariatric surgery it has very low 30-day morbidity and mortality rates, is minimally invasive, almost completely reversible and preserves the anatomy of the gastrointestinal tract. Despite its safety, it is not without risks. Early complications include gastric wall perforation secondary to technical error. Late complications include; port infection, tube disconnection, dislodgement of the access port, leak of reservoir, band erosion or slippage and skin ulceration at port site. These have been well described. Small bowel obstruction caused by band tubing is uncommon. Review of the English language literature reveals eight cases of SBO caused by an internal hernia secondary to band tubing. Two cases of caecal volvulus caused by tubing have also been published. All cases describe redundancy in the tubing as being the cause of the obstruction.

Strobos and Hamed et al also postulate that a lack of omental covering was also a contributing factor. Hamed et al elegantly summarise these cases and include details about the operative interventions used to prevent recurrence. Some groups sutured the tubing to the anterior abdominal wall; two removed the band entirely, two simply rerouted the tubing while others, including ourselves, took no additional measures after freeing the obstruction. We are the only group to describe disconnecting the tubing from the access port in order to relieve the obstruction. If, in a similar situation, the tubing for some reason cannot be disconnected and reconnected to the port, we suggest that the tubing is cut as close to the port as possible and, after repositioning, the cut end is sutured in the subcutaneous...
fat close to the port in order to facilitate future reconnection.

As LAGBs were once a popular procedure we will continue to see patients who have bands in situ present with symptoms of obstruction. Therefore, one should include internal herniation secondary to redundant band tubing in the differential diagnosis in a patient presenting with SBO and LAGB in situ. As we have demonstrated, this can occur many years after the band has been placed. The published cases demonstrate the varying approaches to intraoperative management in order to prevent recurrence. Where possible, patient preference on removal of the band entirely should be sought.

Figure 1: Coronal view computer tomography showing gastric band tubing at the root of the small bowel mesentry and dilated loops of small bowel.
Figure 2: Schematic representation of intraoperative findings: gastric band tubing tightly wrapped around the root of the small bowel mesentry and dilated loops of congested small bowel.
Figure 3: Intraoperative photo showing disconnection of the gastric band tubing from the subcutaneous access port.

Competing interests:
Nil.

Author information:
Erika Fernandes, Surgical Registrar, Department of General Surgery, Taranaki Base Hospital, New Plymouth; James Tan, Surgical Registrar, Department of General Surgery, Taranaki Base Hospital, New Plymouth; Glenn Farrant, General Surgeon, Department of General Surgery, Taranaki Base Hospital, New Plymouth; Karl Kodeda, General Surgeon Department of General Surgery, Taranaki Base Hospital, New Plymouth.

Corresponding author:
Dr Erika Fernandes, Starship Children’s Health, Department of Paediatric Surgery, Auckland. erikamfernandes@gmail.com

URL:

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