An unusual case of a completely eroded gastric band and port tubing removed via endoscopy alone

G Kourounis, R Pearson, D McArthur, S Gibson

Department of General Surgery, Queen Elizabeth University Hospital, Glasgow, UK

ABSTRACT

Bariatric surgery is an established intervention providing significant health benefits to patients with obesity. As a result, the National Institute for Health and Care Excellence now recommends bariatric surgery for those that fulfil the eligibility criteria, while emphasising the need for multidisciplinary care before and after surgery. The UK National Bariatric Surgery Registry shows gastric band procedures to be the second most common bariatric procedure performed in the UK. Gastric band erosion is a known potential complication treated primarily by laparoscopic removal of band and repair of stomach. To our knowledge, we present the first case of a partially eroded gastric band with separate gastric fistulation of the port tubing. The band was removed via endoscopy without the need for a cutaneous exploration as the port had previously been removed at incisional hernia surgery. Owing to the fact that the tubing and band were both evident within the lumen of the stomach, complete band erosion was inferred and therefore endoscopic removal thought to be indicated. In actual fact, there was separate erosion of the band and tubing; more specifically, the gastric band clasp had not eroded fully and while endoscopic removal was still possible, it was challenging and required the band to be divided. This case highlights the importance of careful patient selection, involvement of multidisciplinary care prior and after surgery and close follow-up to facilitate timely identification and management of complications.

KEYWORDS

Gastric band – Complication – Gastric band erosion – Bariatric surgery – Endoscopy

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CORRESPONDENCE TO

Georgios Kourounis, E: g.kourounis@nhs.net

Case history

A 55-year-old woman was referred to the upper gastrointestinal general surgical clinic following oesophagogastrroduodenoscopy (OGD) by gastroenterology. The OGD was requested by her general practitioner to investigate her chronic iron deficiency anaemia refractory to medical treatment. The patient had denied any gastrointestinal symptoms prior to referral by her general practitioner and continued so throughout the rest of this case.

Her medical history includes hypertension, asthma, type 2 diabetes, multiple episode of deep vein thrombosis, chronic bilateral leg ulcers, arthritic knees, hypothyroidism and a body mass index of 52 (class III obesity). Her mobility is significantly limited by shortness of breath on walking short distances, as well as requiring a stick to mobilise independently. Her surgical history includes a laparoscopic gastric band placement a decade prior to referral, complicated by postoperative sepsis and incisional hernias. One year following placement she had an unsuccessful laparoscopic removal of the gastric band, with only the band reservoir removed. Unfortunately, additional records to clarify the details of her first procedure and postoperative course were sought but not obtained.

The first OGD was aborted by the endoscopist, who found gastric contents thought to be food (Fig 1). A second OGD one month later showed the same intragastric contents, which were at that point identified as an eroded gastric band (Fig 2) and port tubing (Fig 3). At this point, she was referred to our department for continuing management. A computed tomography (CT) of the abdomen and pelvis was subsequently performed and confirmed gastric band erosion with no associated collections. (Fig 4).

She was then listed for OGD and endoscopic removal of gastric band by the specialist upper gastrointestinal and bariatric specialist team. During this procedure after gastric band division, it was noted that while the band had eroded at the oesophagogastric junction in the usual position, the tubing entered the stomach via a separate fistula more distally (Fig 5). The band was split using a mechanical lithotripter (Olympus, BML-110A). A guidewire (Boston Scientific, Jagwire™ 0.035in × 450 cm) was passed through the band and retrieved with a rat tooth grasper (TeleMed, 7226). The wires were then attached to the mechanical lithotripter which was passed orally to the stomach under endoscopic guidance and the band was split. Manipulation with the snare (Boston Scientific, M00561310) at this point revealed that the band clasp was not eroded and the

Figure 1 First oesophagogastroduodenoscopy findings, initially thought to be food content.

separate tubing erosion was then noted. Trial removal of the band using the snare was conducted with both sides of the split band manipulated. The appropriate side (that with the clasp complex having partially eroded) was identified and the band and band tubing were removed orally without trauma (Fig 6). Following removal, reinspection showed fistulas with no evidence of trauma (Figs 5 and 7). The patient was observed overnight without manifestation of complications. The next day she was able to tolerate an oral diet and was successfully discharged home.

Figure 2 Second oesophagogastroduodenoscopy findings showing the eroded gastric band.

Figure 3 Second oesophagogastroduodenoscopy findings showing the eroded port tubing.

Discussion

Obesity is a growing global health problem affecting an increasing number of patients. In the UK, the prevalence of obesity nearly doubled between 1993 and 2015. Children are also affected, with 3 in 10 children in the England

Figure 4 Computed tomography prior to endoscopic removal confirming complete intraluminal erosion of gastric band and port tubing.

Figure 5 Distal fistula at site of portal tube erosion on final oesophagogastroduodenoscopy following band removal.

Figure 7 Gastric band erosion site showing no evidence of trauma on final oesophagogastroduodenoscopy following band removal.

found to be obese or overweight in 2016.¹ In 2015, the Scottish Health Survey found 67% of adults to be overweight or obese, with 28% of these being obese.² The established link between obesity and other serious chronic comorbidities such as type 2 diabetes, hypertension, cardiovascular disease, as well as psychological comorbidities is also a matter of concern in the management of these patients.³ The National Institute for Health and Care Excellence recommends bariatric surgery as a treatment option for obesity in a subset of patients and places emphasis on the need for these patients to show evidence that they will commit to long-term follow-up postoperatively within specialist intensive multidisciplinary obesity services (tier 3 services).³

Figure 6 Gastric band and tubing, with cut-through gastric band, following endoscopic removal.

The 2014 UK National Bariatric Surgery Registry report showed an increasing amount of performed bariatric procedures. Of the 32,075 procedures recorded between 2006 and 2014, 18,283 operations (57%) were recorded in the period between 2011 and 2013 alone. The resulting percentage of excess weight lost ranged between 55–70% for gastric bypass, followed by 55–60% for sleeve gastrectomy and 45–55% for gastric banding. The overall surgical complication rate was 2.9%, with an overall mortality rate following primary surgery of 0.07%.⁴ These results add to the increasing body of evidence suggesting the efficacy of bariatric surgery in weight reduction, improved management of comorbidities and decreased long-term mortality rates.^{4,5}

Our case presents a patient who underwent a gastric band procedure complicated by intragastric erosion. The reported rate of this complication ranges from 1% to 11% of cases.⁶ It can occur early or late, but is most common after two years.⁷ Pathogenesis is multifactorial and in the early stage may be the result iatrogenic gastric wall damage, microperforation following postoperative infection and adhesion formation.⁷ Late-stage pathogenesis may be secondary to foreign body rejection reaction or a pressure induced response.⁷ The standard treatment approach is laparoscopic removal of band and repair of stomach.⁶ The endoscopic removal of eroded gastric bands has been reported in one case series of 78 patients.⁶ Their procedure describes the removal of bands that were eroded by more than 50%, with a second post-endoscopy stage for transcutaneous exploration and removal of port and port tubing.⁶ To our knowledge, this is the first case of an eroded gastric band with separate erosion of tubing leading to diagnostic uncertainty. In addition, this is also the first description of an eroded gastric band that was treated entirely

endoscopically without the need for a cutaneous exploration for removal of port or tubing.

Conclusion

In conclusion, bariatric surgery is an established intervention promising significant health benefits to a large subset of patients with obesity. Despite the novelties in our case, we hope it highlights the importance of careful patient selection, with multidisciplinary care involvement before and after surgery. Complications are low and close follow-up can facilitate timely identification and management. Finally, endoscopic removal of eroded gastric bands can be safe when performed by experienced endoscopists.

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