Recurrent laryngeal nerve palsy due to displacement of a gastric band

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ABSTRACT

The left recurrent laryngeal nerve is at increased risk of compression by oesophageal pathology due to its long course through the neck and thorax. Here we report a case of left vocal cord palsy secondary to displacement of a gastric band, resulting in oesophageal dilatation and neuropraxia of the left recurrent laryngeal nerve. Vocal cord function partially improved following removal of the gastric band.

KEYWORDS

Bariatric surgery – Recurrent laryngeal nerve – Vocal cords

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The long and tortuous course of the recurrent laryngeal nerves (RLN) puts them at risk of compression and damage by thoracic, mediastinal and cervical pathology. This may result in a hoarse voice, dysphagia and aspiration, and, in bilateral cases, airway compromise.

Obesity is a growing public health problem in the United Kingdom, and bariatric surgery is now recognised as a cost-effective treatment for morbid obesity. In 2013–14, 6380 patients underwent bariatric surgical procedures in the National Health Service, of which 513 had placement of a gastric band.¹

We present a case of left vocal cord palsy secondary to displacement of a gastric band.

Case presentation

A 54-year-old woman was referred to our head and neck clinic with persistent hoarseness for 6 months, along with a 3-week history of vomiting after meals. She had undergone laparoscopic gastric banding (LGB) for morbid obesity 5 years previously. This was an uncomplicated procedure and resulted in a successful weight loss from 156 kg (BMI 62.5 kg/m²) to 72 kg (BMI 28.8 kg/m²). There was no voice change in the first 4.5 years postoperatively.

On clinical examination of the head and neck, the only positive finding was left vocal cord paralysis on flexible nasolaryngoscopy. Figure 1 shows the cord resting in the paramedian position. A computed tomography (CT) scan from her skull base to diaphragm was arranged, as no obvious cause for vocal cord paralysis was identified. This showed significant dilatation of the oesophagus from the level of the thyroid to the lower oesophagus (Figure 2). A barium swallow study revealed displacement of the gastric band into an abnormal

orientation around the gastric antrum (Figure 3), with consequent severe gastric outlet obstruction and oesophageal dilatation. The patient was therefore admitted as an emergency case and the general surgical team removed the gastric band laparoscopically.

The patient made a good recovery following band removal, and reported immediate resolution of post-prandial vomiting. At 2-week follow-up, her voice was already improving, and flexible nasolaryngoscopy revealed some movement of the left vocal cord on phonation. This suggested that the vocal

Figure 1 Nasolaryngoscopic view of the larynx, showing the left vocal cord lying in the paramedian position

Figure 2 CT scan showing significant dilatation of the oesophagus

Figure 3 Barium swallow demonstrating displacement of the gastric band with significant gastric outlet obstruction

cord paralysis was due to neuropraxia of the left RLN, caused by oesophageal dilatation.

The patient was referred for speech and language therapy and, considering the high recovery rates in RLN neuropraxia

from other causes (eg following thyroid surgery), we expect a full recovery of vocal cord function.

Discussion

LGB was first introduced in the 1990s in Europe and gained popularity as a safe and effective surgical intervention in morbidly obese patients. However, it has been performed less frequently in recent years due to concerns over poor long-term outcomes and high revision rates.²

One recognised complication of LGB is oesophageal dilatation due to food remnants accumulating above the band and distending the oesophagus. One study of preoperative and postoperative oesophagograms demonstrated oesophageal dilatation in 71% of patients, resulting in significant symptoms, such as dysphagia, reflux and vomiting.⁵ Due to the anatomical location of the RLNs in the tracheo-oesophageal grooves, they are at risk of compression by oesophageal distension and this has indeed been reported in cases of severe achalasia.⁴ The longer course of the left RLN means that it travels upwards at a more acute angle to the midline than the right RLN. It therefore lies in the tracheo-oesophageal groove for a greater distance than the right nerve, theoretically increasing the risk of compression by oesophageal pathology, or a foreign body.

To the best of our knowledge, we report the first case of RLN palsy following displacement of a gastric band in the English language literature. A case has been reported previously of RLN palsy following LGB but this was due to high band pressure causing oesophageal dilatation, rather than displacement.⁵

Conclusions

The current report highlights the importance of taking a thorough history in patients with vocal cord palsy, and considering oesophageal dilatation as a cause in those with a history of previous LGB. Although rare, this complication should be noted by general surgeons counselling patients for bariatric surgery due to its impact on communication and quality of life.

References

1. Hospital Episode Statistics, Admitted Patient Care, England – 2013–14 [NS]. Health and Social Care Information Centre. <http://www.hscic.gov.uk/catalogue/PUB16719> (cited October 2015).
2. Victorzon M, Tolonen P. Mean fourteen-year, 100% follow-up of laparoscopic adjustable gastric banding for morbid obesity. *Surg Obes Relat Dis* 2013; **9**: 753–757.
3. DeMaria EJ, Sugerman HJ, Meador JG et al. High failure rate after laparoscopic adjustable silicone gastric banding for treatment of morbid obesity. *Ann Surg* 2001; **233**: 809–818.
4. Chegar BE, Emko P. Bilateral vocal cord paralysis secondary to esophageal compression. *Am J Otolaryngol* 2004; **25**: 361–363.
5. Sale PJ, Shaw CK. Recurrent laryngeal nerve palsy secondary to laparoscopic gastric banding. *Otolaryngol Head Neck Surg* 2010; **142**: S39–40.