

Case 10908

Anterior slippage and lesser curve hernia as a late complication of laparoscopic adjustable gastric banding surgery

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Section: Abdominal Imaging

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Patient: 43 year(s), female

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Clinical History

A 43-year-old female patient, treated with laparoscopic adjustable gastric band for morbid obesity 4 years before, presented to the ER with persistent vomiting and food intolerance, lasting for 4 days.

Imaging Findings

An abdominal and pelvic CT was performed, after ingestion of positive oral contrast (gastrografin), which was poorly tolerated, and administration of IV iodinated contrast, in the portal venous phase of enhancement. Images showed distal positioning of the adjustable silicone gastric band due to anterior slippage and herniation of a portion of the lesser curve through the gastric band ring forming a small, postero-medial pouch, which did not opacify with oral contrast. Oral contrast did

not progress beyond the gastric antrum, due to complete obstruction (Fig. 1, 2). An upper endoscopy was performed, showing a blind-ending pouch due to obstruction of the gastric outlet (Fig. 3).

Discussion

Bariatric surgery is generally categorized into two main categories, restrictive and malabsorptive. In restrictive procedures, gastric volume is reduced substantially to promote early satiety. In malabsorptive procedures, the gastrointestinal tract is surgically altered to induce malabsorption and hence decrease caloric uptake. Procedures may also combine techniques [1].

Laparoscopic adjustable gastric banding surgery is a purely restrictive procedure in which the stomach is divided into two pouches by placement of an adjustable silicone gastric band 2 cm below the gastroesophageal junction, so that the proximal gastric pouch is left with a volume of approximately 15 mL [2].

Complications of laparoscopic adjustable gastric banding may be band-related or port related. Relatively common band-related complications include stomal stenosis (8-11%); band slippage (2-13%); pouch dilatation (3-8%); band erosion into the stomach (3%); and band misplacement (2.3%). Port-related complications include port-rotation and inversion (1-5%); tubing disconnection (1-5%), leak from port-tubing connection (1-5%) and infection (<1%) [1].

Band slippage can be caused by recurrent vomiting or faulty surgical technique and can be posterior or anterior. Posterior slippage is associated with upward herniation of the posterior stomach wall through the band. In anterior slippage, the higher pressure in the upper pouch pushes the band downward over the anterior aspect of the stomach. Both complications manifest as vomiting, regurgitation, and food intolerance, but the conditions have different radiologic findings. Eccentric upper gastric pouch dilatation occurs in both, but the pouch is usually posterior and inferior in posterior slippage, and anterior and superior in anterior slippage. [2] The latter was found in this patient (Fig. 1, 2).

Besides the anterior slippage, our patient also presented with herniation of a portion of the lesser curvature through the gastric band ring, a finding which, to our knowledge, has not been previously described in the literature as a complication of laparoscopic adjustable gastric banding. Both the hernia and the slippage might have contributed to the clinical setting of upper gastrointestinal obstruction. The adjustable gastric band was surgically removed with no complications and subsequently the symptoms resolved.

Final Diagnosis

Anterior slippage and lesser curve hernia of the stomach

Differential Diagnosis List

Stomal stenosis, Posterior slippage, Band erosion

Figures

Figure 1 Axial CT



Axial CT image of the upper abdomen post oral (gastrografin) and IV contrast, in the portal phase of enhancement. Blue arrow: oesophagogastric junction; Red arrow: herniated portion of the lesser curve.

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Area of Interest: Gastrointestinal tract;
Imaging Technique: CT;
Procedure: Computer Applications-General;
Special Focus: Hernia;



Axial CT image of the upper abdomen post oral (gastrografin) and IV contrast, in the portal phase of enhancement. Red arrow: herniated portion of the lesser curve.

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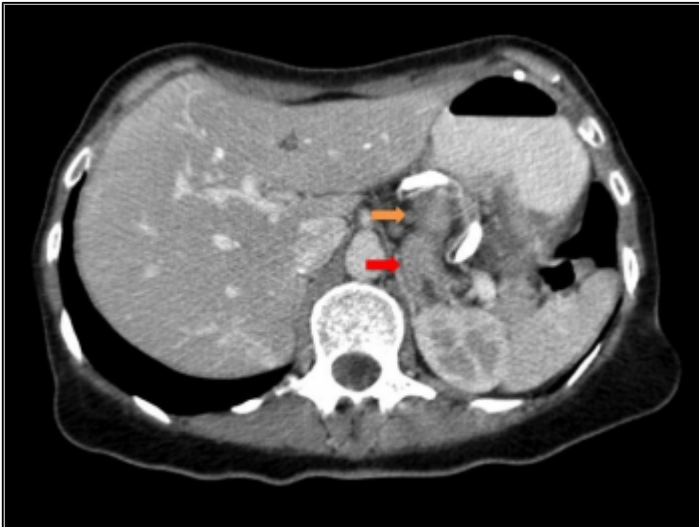
Area of Interest: Gastrointestinal tract;
Imaging Technique: CT;
Procedure: Computer Applications-General;
Special Focus: Hernia;



Axial CT image of the upper abdomen post oral (gastrografin) and IV contrast, in the portal phase of enhancement. Red arrow: herniated portion of the lesser curve; Orange arrow: gastric antrum.

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Area of Interest: Gastrointestinal tract;
Imaging Technique: CT;
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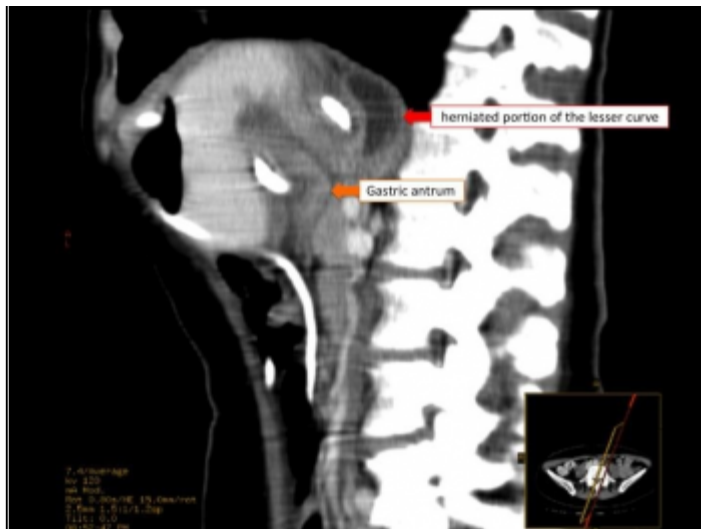
Axial CT image of the upper abdomen post oral (gastrografin) and IV contrast, in the portal phase of enhancement. Red arrow: herniated portion of the lesser curve; Orange arrow: gastric antrum.

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Area of Interest: Gastrointestinal tract;
Imaging Technique: CT;
Procedure: Computer Applications-General;
Special Focus: Hernia;

Figure 2 Sagittal oblique MPR CT



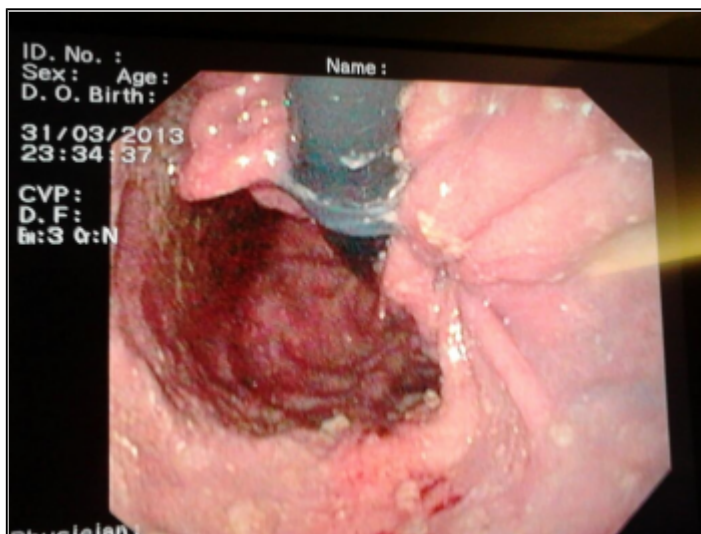


Sagittal oblique MPR CT image of the upper abdomen showing anterior slippage of the gastric band and a hernia - both the lesser curve hernia and the gastric antrum transverse the gastric band ring.

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Area of Interest: Gastrointestinal tract;
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Figure 3 Upper endoscopy



Upper endoscopy photograph. A blind-ending pouch was found with no exit tract to the duodenum. Depicted orifice corresponds to the oesophagogastric junction as the endoscope folded in on itself.

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Area of Interest: Gastrointestinal tract;
 Imaging Technique: Experimental;
 Procedure: Endoscopy;
 Special Focus: Hernia;

MeSH

Upper Gastrointestinal Tract [A03.556.875]

The segment of GASTROINTESTINAL TRACT that includes the ESOPHAGUS; the STOMACH; and the DUODENUM.

Hernia [C06.405.293]

Protrusion of a loop or knuckle of an organ or tissue through an abnormal opening.

References

[1] Chandler RC, Srinivas G, Chintapalli KN et al (2008) Imaging in Bariatric Surgery: A Guide to Postsurgical Anatomy and Common Complications AJR 190:122-135

[2] Blachar A, Blank A, Gavert N et al (2006) Laparoscopic Adjustable Gastric Banding Surgery for Morbid Obesity: Imaging of Normal Anatomic Features and Postoperative Gastrointestinal Complications. AJR 188:472-479

Citation

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