GASTRODUODENAL INTUSSUSCEPTION AS A COMPLICATION OF LAPAROSCOPIC GASTRIC PLICATION.

Author(s): Simran Parmar, MD1; Brianna Brand, BSc2; Philip Mitchell, MD, FRCSC1; Estifanos Debru, MD, FRCSC1 1University of Calgary; 2University of Alberta
University of Calgary, Department of Upper GI and Bariatric Surgery, Alberta Canada

UNIVERSITY OF CALGARY

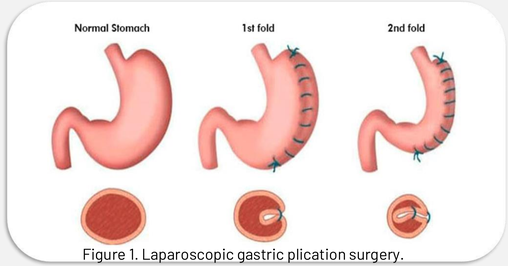


Figure 1. Laparoscopic gastric plication surgery.

Introduction

- Gastroduodenal intussusception is a rare clinical entity, particularly in the absence of a mass.
- This is a novel case report of a distended gastric fundus telescoping beyond the pylorus in the presence of gastrogastric fistulas with no clear lead point as a late complication of laparoscopic gastric plication (LGP) surgery.

Background

- Obesity is a rapidly growing health concern. Laparoscopic sleeve gastrectomy (LSG) has been the predominant bariatric procedure as of late, in which a subtotal vertical gastrectomy is performed. LSG is associated with low complication rates, the most common being gastric content leakage through the staple line.
- LGP is a bariatric surgical technique based on the anatomical principles of a LSG. LGP typically involves two-layer suture plication of the greater curve of the stomach (see Figure 1). LGP may be an alternative for patients as it achieves gastric restriction, without resection and avoids use of tissue staplers.
- However, recent large-scale studies have concluded that LSG is superior to LGP in weight loss outcomes, in post-operative complications and improved diabetes remission. Despite the growing consensus to support LSG, LGP is still performed.
- Complications associated with LGP include gastric outlet obstruction, failure and release of plication, gastric (micro) perforation, gastrogastric hernia, prolapse and fistula, bleeding and leak from suture line.


Figure 2. CT AP demonstrating gastroduodenal intussusception causing gastric outlet obstruction.

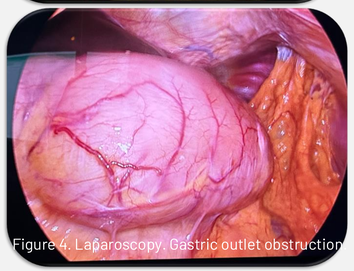
Case Report

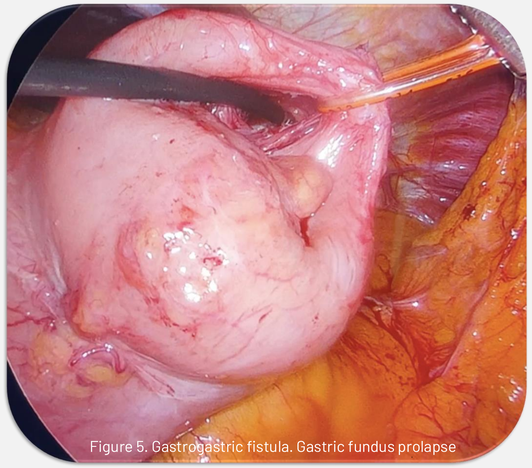
- We present the case of a sixty-one-year-old female who underwent LGP in San Diego for obesity fourteen years ago.
- She presented to the emergency department with acute nausea, vomiting and melena. Investigations revealed mild leukocytosis of 12 x10^9/L and hemoglobin of 84 g/L (previously 134 g/L).
- Diagnosis of gastric intussusception was made based on abdominal computed tomography and preoperative endoscopy (see Figure 2 & 3).
- The obstruction was not reducible by gastroscopy. Prior to taking the patient to the operating theater, they were resuscitated and the stomach decompressed via endoscopically inserted nasogastric tube.

Surgical Technique

- Diagnostic laparoscopy was performed, which demonstrated gastroduodenal intussusception as well as the presence of gastrogastric fistula along the greater curve plication line (see Figure 4 & 5).
- Intraoperative gastroscopy performed to assist with orientation and reduction.
- Despite great efforts, the intussuscepted stomach was not amenable to laparoscopic reduction due to distorted anatomy and edema, thus the decision was made to convert to an open procedure.
- Successful reduction of the intussuscepted fundus through the pylorus was performed by application of manual pressure on the duodenum distally.
- The fundus was grossly dilated and redundant.
- As a definitive management, sleeve gastrectomy was performed using a 44 Fr bougie. The stomach wall was thickened requiring multiple firings of black cartridges; Tri-Stapler with 4mm, 4.5mm, and 5mm staples (see Figure 6).

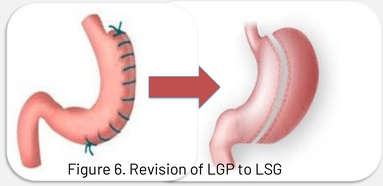

Figure 3. Endoscopic View of intussusception


Figure 4. Laparoscopy. Gastric outlet obstruction


Figure 5. Gastrogastric fistula. Gastric fundus prolapse

Results

- The patient tolerated the procedure well. She was discharged postoperative day two.
- She recovered well from the surgery with no acute or short-term complications.
- Pathology was negative for dysplasia.


Figure 6. Revision of LGP to LSG

Discussion

- Greater curve gastric plication is an alternative bariatric procedure that does not require gastric resection. However, this procedure is not without its own unique complications.

- This is a case of gastroduodenal intussusception without a mass, which is quite a rarity, with only a few case reports on this entity.
- No other reported case of the fundus prolapsing and intussusception was discovered during review of literature. This may be multifactorial perhaps due to fundic distension, plication failure and prolapse in conjunction with development of gastrogastric fistula.
- Surgical techniques described for addressing gastric intussusception include gastropexy, bariatric revisional surgery by means of sleeve gastrectomy or Roux-en-Y gastric bypass.
- This case demonstrates success revision of failed LGP into LSG.

- Clinicians should be aware of the potential for late complications when assessing patients who have had gastric plication such as obstruction, prolapse, plication failure, intussusception, fistula, hernia and leak.
- With the emergence of endoscopic plication techniques, it will be interesting to see how the risk of complications compares.

Contact Information: Simran Parmar PGY5. simranparmar7@gmail.com