



Nissen-Sleeve For Bariatric Patients With Hiatus Hernia and/or GERD: Case Report

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Background

Sleeve gastrectomy and Roux-en-Y gastric bypass (LRYGB) are the most commonly performed bariatric procedures [1]. Roux-en-Y gastric bypass is the gold standard treatment for morbid obesity associated with hiatus hernia and/or Gastroesophageal Reflux Disease (GERD) [2], as sleeve gastrectomy is commonly associated with postoperative reflux. The incidence of developing reflux after sleeve gastrectomy can be up to 35% [3]. However, sometimes LRYGB is contraindicated due to the patient's medical history, smoking, or intake of medications. A new technique was introduced to sleeve gastrectomy by adding a Nissen antireflux mechanism [4] in bariatric patients associated with GERD.

Case presentation

A 60-year-old patient presented with morbid obesity with a BMI of 47 kg/m² (101 kg, 147 cm) with postprandial dyspnea and reflux symptoms. The medical history revealed hypertension and no history of previous operations other than laparoscopic cholecystectomy. Preoperative investigations were done in the form of a gastroduodenoscopy and a barium swallow which revealed an intrathoracic stomach. The patient took PPI 40 mg twice daily. After preparing the patient the surgery was initiated. The operation was done laparoscopically without conversion and under general anesthesia. We used 6 trocars and a laparoscopic liver retractor. We started dissecting the greater curvature of the stomach till 5 cm from the pylorus using Ultracision and dissection of the hiatal orifice; we reduced the hernia, extended the lower esophagus in the abdomen, and performed a dorsal hiatoplasty with a 3/0 Ethibond. We then performed a 360° fundoplication using a 35 bougie and fashioned the sleeve using an endo Gia Echelon 60 mm linear stapler. Finally, we secured the staple line with multi-fire clips to avoid bleeding along the staple line. The operation lasted 135 min.

In the first two postoperative days the patient was allowed to only drink water, after which we approved gradual introduction of soup into the diet starting from the third postoperative day. The patient received nutritional counseling postoperatively, stayed at the hospital for three days, and was then discharged without any complications. The patient was advised to take PPI 40 mg daily for 6 months and to inject low molecular weight heparin 4000 IE for four weeks. The first surgical follow-up after 3 months showed a BMI of 42 kg/m², a BMI of 39 kg/m² 6 months postoperatively [2], and a BMI of 36 kg/m² (21% TWL) (51% EWL) a full year after surgery. The patient did not have any reflux or respiratory symptoms, had stopped her PPI consumption and her anti-hypertensive medications.

Discussion

The most commonly performed bariatric procedure is sleeve gastrectomy [5]. While sleeve gastrectomy is less complex, it can cause early to late postoperative complications,



Figure 1. Barium swallow showing an intrathoracic stomach.

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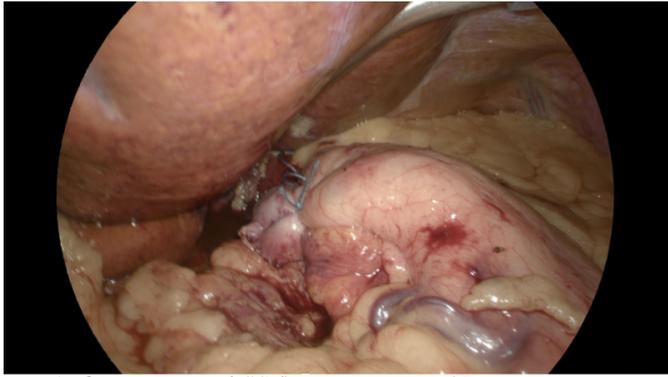


Figure 2. Performing a 360° floppy fundoplication



Figure 3. Stapling and fashioning a gastric sleeve using an endo Gia Echelon 60mm surgical stapler.

one of which is GERD. The mechanism of postoperative reflux could be attributed to the increase of the intraluminal pressure and postoperative gastric stasis even with good lower esophageal sphincter function (LES) [6]. Preoperative GERD can be exacerbated after sleeve gastrectomy or even contribute to the development of de novo GERD [7]. Genco et al. showed a significant increase of erosive esophagitis and even revealed newly diagnosed Barrett's esophagus after a sleeve gastrectomy [8].

The postoperative leak rate after a sleeve could be up to 7% with a mean average of 2.4% [9].

The LRYGB still remains the gold standard for obese patients suffering from perioperative GERD, Barrett esophagus and/or a big hiatus hernia [2]. However, LRYGB can also cause early and late postoperative complications – the late complications mainly being in the form of marginal ulcers especially in smokers [10], severe dumping syndrome, and iron and vitamin deficiencies.

Several studies prompted the effectiveness of securing an anti-reflux mechanism in the form of several types of Fundoplication added to the sleeve gastrectomy to prevent postoperative GERD [11-13].

Uccelli et al. studied 127 patients throughout 5 years of long-term follow-ups after sleeve gastrectomies with a Rossetti fundoplication, and demonstrated the resolution of GERD in more than 95% of the patients [14].

A systematic review and meta-analysis conducted by Aiolfi et. al. showed GERD resolution in the short term, while the incidence of postoperative leak, gastric perforation, and overall complications were 1.0%, 2.9%, and 10%, respectively [15].

Some authors reported gastric ischemic perforation after Nissen-Sleeve: early cases were caused by gastric ischemia and wrap perforation [16], while later cases occurred after several months postoperatively as a result of phytobezoars within the gastric plication resulting in ischemia and gastric perforation [17].

Conclusion

In our case, the one-year postoperative follow-up showed a positive short-term outcome for the bariatric patient after a Nissen-Sleeve with a big hiatus hernia regarding weight loss, resolution of preoperative complaints and remission of comorbidities.

In our opinion, Nissen-Sleeve is a safe and feasible procedure, which could be considered cautiously for treating patients with morbid obesity associated with hiatus hernia and/or GERD in cases when LRYGB is contraindicated or not desired by the patient [18]. Long-term studies, however, are needed to evaluate its efficacy, especially in regards to early and late postoperative complications in the long run.

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