




Roux-en-Y Gastro-jejunostomy for Complex Leak After the “Nissen” Variant of Sleeve Gastrectomy

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Abstract

Background Recently, improvised variants of sleeve gastrectomy SG were reported as alternative bariatric options in patients suffering from both morbid obesity and GERD, including mainly additional anterior or posterior fundoplication over a partially sleeved stomach.

Methods We present the case of a 29-year-old male patient with a body mass index (BMI) of 46.2 kg/m² underwent laparoscopic SG with concomitant posterior fundoplication: Nissen-SG (N-SG). At postoperative day (POD) 4, he presented with epigastric pain, nausea, and 40 °C fever. The abdomen was tender with signs of peritonitis. Explorative laparotomy displayed a massive gastric leak with generalized peritonitis. Peritoneal lavage was performed. The patient was transferred to our department for the management of persistent SGL.

Results Initial management comprised total parenteral nutrition and wide-spectrum intravenous antibiotics. Three weeks later, the patient underwent laparoscopic exploration. As shown in the video, at least two leaks were individualized, including one, anterior, catheterized by the pigtailed, and the other one, posterior, impossible to reach endoscopically (Fig. 1). A residual abscess, located between the left crus, the pancreas, and the upper edge of the spleen, was evacuated. Eventually, Roux-en-Y gastro-jejunostomy was performed.

Conclusion The adjunction of a posterior fundoplication may have contributed to the multiple and complex occurrence of SGL. Having an ill-vascularized redundant fundus may have increased ischemia of the GE junction. Moreover, it is more difficult to perform endoscopic treatment in a plicated and sleeved stomach as well.

Keywords Leak · N-Sleeve · Nissen sleeve gastrectomy · Roux-en-Y gastro-jejunostomy · Surgical technique

Introduction

Worldwide, laparoscopic sleeve gastrectomy (SG) is currently the preferred bariatric procedure, either by the patient or by the

surgeon [1, 2]. Patients with severe obesity have a higher risk of developing significant gastro-esophageal reflux disease (GERD) [3]. Moreover, as compared with other bariatric procedures, SG may be associated with a higher risk of GERD [4]. Consequently, validated options in candidates for SG suffering from GERD include the SG per se with or without reinforced hiatal closure or the Roux-en-Y gastric bypass (RYGB) [5]. Recently, improvised variants of SG were reported as alternative bariatric options in patients suffering from both morbid obesity and GERD, including mainly additional anterior or posterior fundoplication over a partially sleeved stomach [6, 7]. Leak remains the main complication following SG (SGL), with an incidence rate of 1 to 5%, a potential mortality rate between 0.1 and 5%, and a significant increase in cost [8, 9]. In this report, we discuss the case of a patient who had a SG with posterior fundoplication complicated by multiple SGL. After failure of numerous conservative

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attempts at leak control, the patient had eventually Roux-en-Y gastro-jejunostomy as a lavage procedure.

Case Video (Video + Figure)

A 29-year-old male patient with a body mass index (BMI) of 46.2 kg/m^2 underwent laparoscopic SG with concomitant posterior fundoplication: Nissen-SG (N-SG). At postoperative day (POD) 4, he presented with epigastric pain, nausea, and 40°C fever. The abdomen was tender with signs of peritonitis. Computerized tomography (CT) scan confirmed the presence of leak with extravasation of orally administered contrast. Laparoscopic lavage and external drainage were realized. At POD 22, the patient presented with diffuse abdominal pain and fever. Explorative laparotomy displayed massive gastric leak with generalized peritonitis. Peritoneal lavage was performed, after which closed, negative-pressure drainage was positioned in the left upper quadrant. Two days later, the patient had upper tract endoscopy that found at least two leak openings. Due to difficulties in catheterizing the orifices, a self-expandable metallic stent was inserted, while the external drainage was left inside. Eventually, the stent was retrieved due to major intolerance and replaced by 2 double pigtail drains in one orifice, the other one being judged impossible to reach. On POD 91, the patient was transferred to our department for the management of persistent SGL. Upon arrival, the patient suffered malnutrition and low-grade fever. Physical examination showed a total weight loss of 66 kg, the BMI being at 21.2 kg/m^2 . The patient had normal hemodynamic parameters and no tenderness upon abdominal clinical assessment. Biology tests revealed white blood count (WBC) at $15,800 \times 10^9/\text{L}$ (N , $4.00\text{--}11.0 \times 10^9/\text{L}$), C-reactive protein at 124 mg/L (N , $<5 \text{ mg/L}$), albumin at 2.6 g/dL (N , $3.5\text{--}5 \text{ g/dL}$), and pre-albumin at 6 mg/dL (N , $18\text{--}45 \text{ mg/dL}$). CT scan found a retro-gastric fluid collection. Initial management comprised total parenteral nutrition and wide-spectrum intravenous antibiotics. Three weeks later, the patient underwent laparoscopic exploration. At least two leaks were individualized, including one, anterior, catheterized by the pigtails, and the other one, posterior, impossible to reach endoscopically (Fig. 1). A residual abscess, located between the left crus, the pancreas, and the upper edge of the spleen, was evacuated. Eventually, Roux-en-Y gastro-jejunostomy was performed (Video). The postoperative course was smooth and the patient was discharged on POD 8.

At a 3-month follow-up, the patient was free from GERD-related symptoms. The BMI was 24.4 kg/m^2 . Nutritional status was normalized. Control CT scan did not show any signs of leak. Upper digestive tract endoscopy did not show neither esophagitis nor bile in the stomach or the esophagus (Fig. 2).

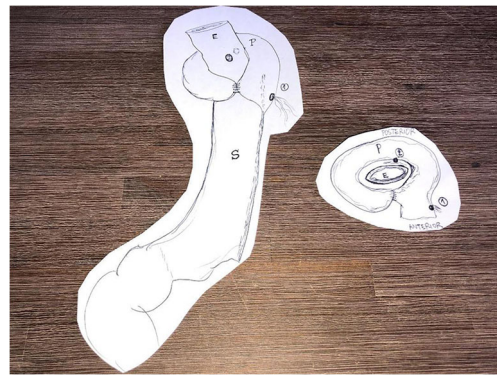


Fig. 1 Multiple post fundoplicated sleeve gastrectomy leak in a 29-year-old patient: Schematic representation of the anterior (1) and posterior (2) leaks, located next to the transection line of the sleeved stomach (S) and between the esophagus (E) and the fundoplication (P), respectively

Discussion

Over the past 5 years, endoscopic management of leaks complicating bariatric surgery evolved dramatically towards the use of intraluminal endoscopic devices. Our approach to SGL is based on conservative treatment initially unless the septic condition of the patient mandates explorative surgery. Besides antibiotics and artificial nutrition, either enteral or parenteral, our preferred approach is the use of one or more PTDs or nasocavity drainage if the fistula is more than 1 cm diameter. The adjunction of a posterior fundoplication may have contributed to the multiple and complex occurrence of SGL. Having an ill-vascularized redundant fundus may have increased ischemia of the GE junction. Moreover, it is more difficult to perform endoscopic treatment in a plicated and sleeved stomach as well. The major disadvantage of N-SG is a high major 30-day complication rate in some studies [10]. The high complication rate may be attributed to a higher complication in the learning curve of a new laparoscopic procedure [7].

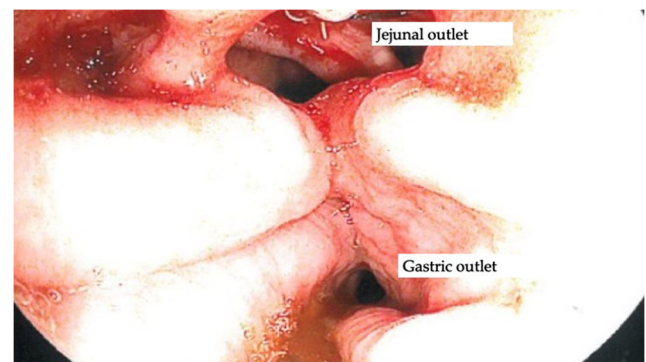


Fig. 2 Multiple post fundoplicated sleeve gastrectomy leak in a 29-year-old patient: Endoscopic view at the esophago-gastric junction showing the typical double barrel aspect including both the jejunal and the gastric outlet

Compliance with Ethical Standards

Conflict of Interest The authors declare that they have no conflicts of interest.

Statement of Informed Consent Informed consent was obtained from all individual participants included in the study.

Statement of Human and Animal Rights Informed consent was obtained from all individual participants included in the study.

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