

Re-Sleeve Gastrectomy for Chronic Leak with Gastro-Pleural Fistula Post-Sleeve Gastrectomy

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Abstract

Introduction: Laparoscopic sleeve gastrectomy has an acceptable rate of complications and the staple line fistula can occur in 0.5% and 5% of patients.

Case Presentation: We present a case of a patient with a chronic staple line fistula post sleeve gastrectomy who developed a left pleural fistula for which we performed a thoracoscopy in the first operative time and a one month after, a fistula resection type re-sleeve gastrectomy.

Discussions: A chronic inflammatory process under the left diaphragm will produce erosions. In contact with the diaphragm, these leaks can evolve into gastro bronchial fistulas (GBFs). Despite the endoscopic measures a significant number of proximal leaks (28.1%) become chronic and the surgical treatment is indicated.

Conclusion: Re-sleeve gastrectomy can be an option in case of chronic fistula as a second option if failure of the endoscopic drainage.

Keywords: Laparoscopic Sleeve Gastrectomy (LSG); Gastro Bronchial Fistulas (GBFs)

Introduction

Laparoscopic sleeve gastrectomy (LSG) proved its efficacy in term of weight loss and comorbidities reduction for the patients with morbid obesity. LSG is a surgical procedure considered to safe and effective but also technically easier than other procedures requiring anastomoses and laparoscopic sutures.

LSG have an acceptable rate of complications and the staple line fistula can occur in 0.5% and 5% of patients according to literature [1].

The sleeve fistulas have a high rate of morbidity and mortality, up to 30%. It can involve multiple organs like the colon, pleura or spleen with a big impact on the patient and his family [2]. The management of this complication is multidisciplinary.

We present a case of a patient with a chronic staple line fistula post sleeve gastrectomy who developed a right pleural fistula with abscess. The first operative step was the thoracoscopy and pleural drainage and the second step was fistula resection types re-sleeve gastrectomy.

Case Presentation

We present a patient operated by an LSG for a morbid obesity in mars 2016. The initial BMI was 40 kg/m² (95 kg and 154 cm). The weight loss at 1 year was to BMI 23.6 kg/m².

The patient presented in Emergency for abdominal pain and fever in December 2017. The abdominal CT scan revealed a peri-gastric collection (Figure 1). The patient was operated by laparoscopy who revealed a collection that was drained and a fistula on the upper side of the stapling line. The multidisciplinary team decision was to place a pigtail by endoscopy at the level of the fistula trajectory (Figure 2). The control abdominal CT scan revealed no abdominal collection and the patient was discharged one month postoperatively.



Figure 1

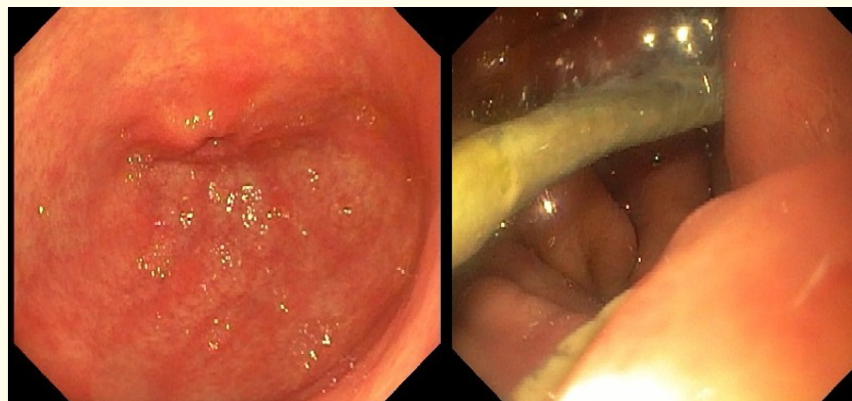


Figure 2

The patient arrived in Emergency in December 2018 for dyspnea and hematemesis. The CT scan and the oeso-gastrointestinal duodenal transit revealed the chronic post sleeve leak and a gastro-pleural fistula (Figure 3). The attitude was to perform in a first step a thoracoscopy with drainage of the pleural collection. One month after the thoracoscopy the abdominal operation was performed. Per-operatively the gastric pouch was distended and the fistula was resected in a re-sleeve gastrectomy fashion with a calibration on a Faucher tube 35 French. The stapling line was reinforced by a resorbable running suture and two drains were placed next to the stapling line and in left subphrenic space. The control oeso-gastrointestinal duodenal transit performed 12 days after and the abdominal CT scan, revealed no leak and no abdominal collection (Figure 4). The oral intake was resumed progressively and the patient was discharge at 1 month postoperatively.

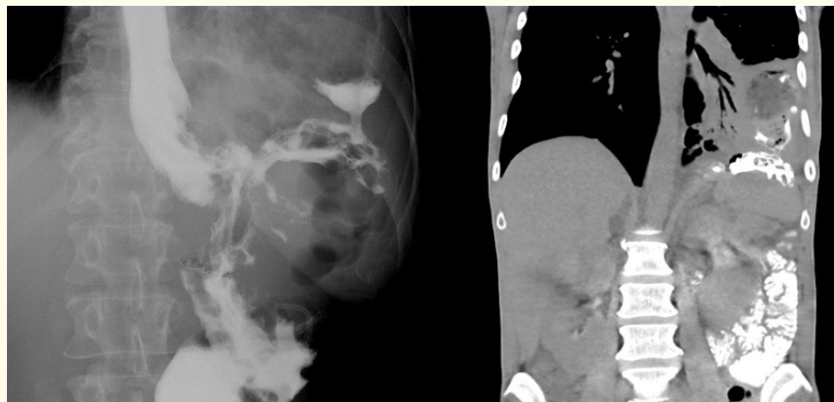


Figure 3



Figure 4

Discussions

LSG can be associated with significant postoperative complications. The most frequent include staple line gastric bleeding, staple line gastric leaks and gastric strictures. The gastric leak can be the source of major morbidity, long length of stay, high costs, and mortality risk and it can be the most challenging complication in term of management [3]. Leaks occur when the gastric contents pas through the staple line because of its insufficient closure or rupture. The factors at risk for a leak are the high pressure inside the gastric tube and healing problems in the angle of His. When the leak becomes chronic, the trajectory became epithelialized and the fistula became mature. The fistula may not close spontaneously and may become refractory tot conventional clinical treatment [4]. Gastric fistula following bariatric surgery overall has an incidence of 0.9 - 2.6%, reaching 10% in revision operations, and is most often located at the level of the angle of His [5].

A chronic inflammatory process under the left diaphragm will produce erosions. The fact that a patient has a ‘controlled’ leak in the gastro esophageal area, without signs of sepsis or peritonitis, can evolve in a severe case [4]. In contact with the diaphragm, these leaks, when they become chronic, can evolve into gastro bronchial fistulas (GBFs) with an incidence of 0.2% [6].

The reported cases of GPF were mostly related to trauma, chronic gastrointestinal herniation in the thoracic cavity as in diaphragmatic and hiatus hernia and malignancy (ovarian carcinoma, Ewing’s sarcoma and renal cell carcinoma [7].

The presentation of GPF is usually insidious with patients being clinically stable. The clinical presentation is variable and some patients might present in an unstable clinical condition. A gastric leak can present from the beginning as peritonitis, abscesses, sepsis, organ failure with a quick evolution to death [3]. For those patients the symptoms might include shortness of breath, chest pain, cough, recurrent respiratory infections, fever or abdominal pain [8].

Initial recognition should include use of thoraco-abdominal CT scan, upper GI radiologic evaluation and EGD to identify not only the leak but the anatomy of the sleeve [9].

The leaks are classified as acute (< 7 days), early (1 - 6 weeks), late (> 6 weeks), and chronic (> 12 weeks) after the primary procedure. A leak may progress to a fistula the chronic stage, after 12 weeks [10]. For the acute leak (within 7 days) the attitude is to perform the oversewn of the fistula orifice or just to perform the drainage of the eventual collections. For the early leak (within 1 - 6 weeks) the drainage can be an option but also the endoscopy closure by hemoclip or glue. For the late leak (after 6 weeks) the endoscopy by hemoclip or glue can work but also the stent. If failure than the surgical reconstruction can be the best option. The chronic leak (after 12 weeks) can be reserved for the endoscopic stent or surgery [11].

For less severe cases, a conservative approach by management with wide-spectrum antibiotics, CT-guided percutaneous drainage of any sub phrenic collection, endoscopic covered stent of gastric fistula, and nasojejunoscopy feeding can be a solution [5]. For those patients the interventional radiological drainage can be a solution.

The endoscopic approaches consist in washout and drainage of the peri-gastric collections by the pigtail drains, diversion using a stent or closure with glue or clips. Patients, who fail all these measures, need a definitive surgical intervention with more aggressive and radical treatment [12]. The anastomotic healing rate with placement of a covered stent was reported to 22% and the stent migration rate in 45% [13].

Despite the endoscopic measures a significant number of proximal leaks (28.1%) become chronic [14]. The surgical procedures performed for chronic fistula after sleeve gastrectomy was Roux-en-Y over the fistula gastrojejunal lateral anastomosis, Roux-en-Y gastric bypass and gastrectomy with esojejunal anastomosis [15,16]. Still, the total gastrectomy has been demonstrated is an aggressive technique as the mean hospital stay of patients 4.5 months (1 - 10 months) [10]. The placement of a Roux limb on the defect can have an immediate success rate of 54.5% [10].

The fistula resection by a re-sleeve gastrectomy is not described in the literature as an option of treatment.

After the thoracoscopy and the thoracic drainage we waited 1 month before the abdominal operation, until the thoracic status became stable. Our initial operative project was to perform a Roux-en-Y over the fistula gastrojejunal side-to-side anastomosis. Per-operatively the gastric pouch was distended and a gastric resection into a healthy tissue was considered. We considered that the possibility to perform these type or resection implies fewer risks that a Roux-en-Y montage with two anatomoses or a "V" shapes resection of the fistula with gastro-gastric anastomosis. The pigtail was removed and a Faucher tube 35French was introduced by the anesthesiologist for calibration. A re-sleeve gastrectomy was performed. A running suture with a resorbable wire was performed to all the length of the stapling line to reduce the tension on the stapling. A standard naso-gastric tube was left in place for ten days. An oeso-gastrointestinal duodenal transit was performed that revealed no leak. The oral intake was resumed progressively. The patient was discharged one month after the abdominal operation.

Conclusion

Re-sleeve gastrectomy can be an option in case of chronic fistula as a second option after the failure of the endoscopic drainage in case of gastric distension if the new stapling can be performed into a healthy tissue. The thoracoscopy with drainage for a gastropleural fistula can provide a good treatment option.

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