



Sleeve-Jejunal Bypass as an Alternative Procedure for Managing Leakage After Laparoscopic Sleeve Gastrectomy: a Case Report

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Introduction

Laparoscopic sleeve gastrectomy (LSG) is considered a simpler and safer operation compared to mal-absorptive operations that include an enteric anastomosis. Leakage along the staple line at the gastroesophageal junction (GEJ) is difficult to treat and known as an LSG complication with an approximately reported incidence of 1.06% [1].

Patients with an unstable hemodynamic status or persistent leakage symptoms are considered candidates for surgical interventions, including conversion to Roux-en-Y gastric bypass (RYGB [2].

The present report involves a case of leakage with post-LSG peritonitis managed by conversional sleeve-jejunal bypass.

Case Presentation

A 40-year-old man with a BMI of 42 kg/m² and negative medical history underwent LSG, and was discharged a day after operation without any problems reported in the teaching hospital. On the third postoperative day, he presented to the

emergency department with fever, tachypnea, and abdominal pain. Upon admission to the emergency department, his vital signs measured included a blood pressure of 140/70 mmHg, a pulse rate of 114/min, a respiratory rate of 30/min, and a body temperature of 38 °C associated with abdominal tenderness in physical examinations. Given his hemodynamic instability following the initial resuscitation, the patient was considered a candidate for emergency diagnostic laparoscopy.

Operative findings obtained through an air-leak test included GEJ leakage, which was found to have a generalized peritonitis with debris in abdominal cavity. After performing copious irrigation, an approximately 150-cm jejunal loop from the Treitz ligament was anastomosed to the distal portion of the gastric tube 3 cm away from the pylorus with a 30-mm purple cartridge (Fig. 1).

Two external drains were ultimately inserted into the abdominal cavity, one close to the leakage site and another close to anastomosis. The total surgical duration was 40 min. After the operation, the patient was transferred to the intensive care unit, and the conservative management prescribed included parenteral nutrition, intravascular imipenem (1 g/Bd) + metronidazole (500 mg/TDS) + vancomycin (1 g/day) and concentrated (Tracutal Ampul daily/Glucose vial 50% qid/intralipid 500 ml every other day/Aminofusion 10% 500 ml daily). The following day, the patient was transferred to the surgical ward. The patient underwent a CT scan on the 14th postoperative day. The CT scan findings included an appropriate passage of the contrast agent to the jejunum among the anastomosis site with an appropriate drains position (Fig. 2).

The patient's vital signs were stable during hospitalization, and drains excretion decreased from 300 to 50 ml before discharge. Two weeks after the surgery, the patient went on a liquid diet and soft regular diet, and the drain was removed upon his discharge on the 21st postoperative day. The 3-month follow-up with abdominal CT suggested no symptoms of leakage or abscess formation (Fig. 3).

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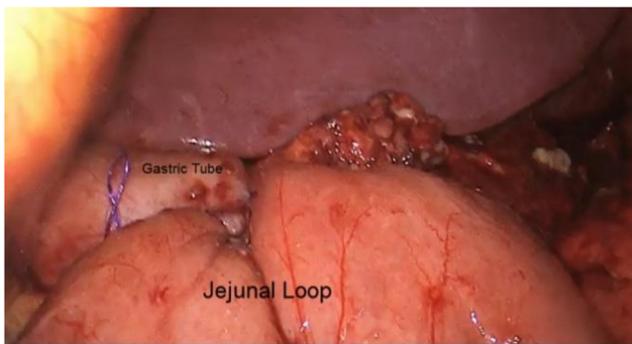


Fig. 1 Anastomosis site

Discussion

LSG serves as an effective and safe bariatric surgery. Leak is the most important post-LSG complication, and certain surgical strategies are used to minimize the risk of potentially life-threatening staple-line leak after LSG [3]. Patients with gastric leak normally present with abdominal pain, fever, tachycardia, and tachypnea. Gastric leak can emerge any time from 24 h to 7 months after surgeries. Aurora et al. [4] highlighted an increased risk in patients with a BMI > 50 kg/m², and used a bougie of a size below 40 Fr during the procedure. A detailed analysis of 11,800 LSGs obtained from the German Bariatric Surgery National Registry reported a significant decrease in the rate of staple line leak with a 10-min longer operation duration, the use of both suture and buttresses for staple line reinforcement, the avoidance of intraoperative leakage testing, and a lower mean age of the patients [5]. Several clinical strategies described for managing the leakage include conservative approaches, and are proposed for contained leaks, combining parenteral nutrition, broad-spectrum antibiotics, and CT-guided drainage. Moreover, a laparoscopic approach can enhance safety, especially in unstable hemodynamic conditions, and include lavage, drainage, and conversion to other bariatric procedures for decreasing interluminal pressure in the early stages of the leak. This laparoscopic strategy can also be used in patients with intermediate and late-identified leaks [2].

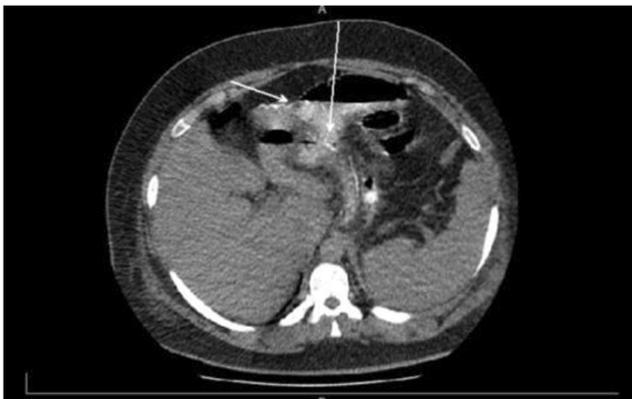


Fig. 2 A normal passage of the contrast agent (long arrow) with an appropriate drain position (small arrow)

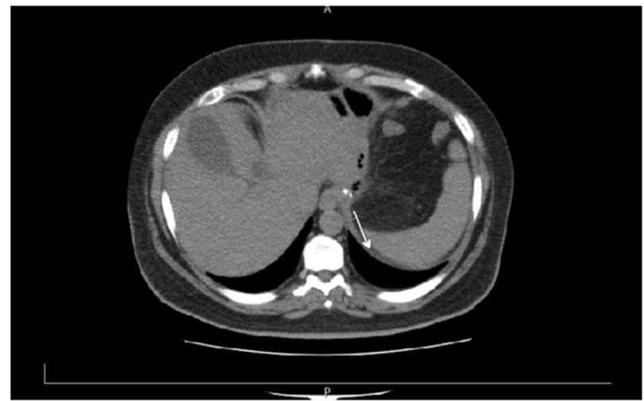


Fig. 3 Delayed CT scan on 90 POD shows no evidence of subdiaphragmatic abscess (arrow)

Conclusion

According to the discussed points, different treatment alternatives can be used to treat post-LSG complications. Laparoscopic management includes re-sleeve, suture repair only, or with conversion to Roux-en-Y gastric bypass [6].

Roux-en-Y bypass requires the creation of a gastric pouch and two different anastomosis sites and the closure of two mesenteric defects, which requires a longer surgical duration that may pose higher risks to unstable patients. Sleeve-jejunal bypass is recommended for creating a proximal gastric bypass between the sleeved stomach and the jejunum to decrease the gastric tube pressure and operation duration compared to Roux-en-Y gastric bypass and creation of only one anastomosis for controlling the leak. Although this technique is practically known as the sleeve plus procedure that can serve as a proper alternative based on the discussed points, it is recommended to be studied more, especially in terms of efficacy.

Compliance with Ethical Standards

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

Ethical Approval Statement All procedures performed in the study involving human participant were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Informed Consent Statement Informed consent was obtained from participant included in the study.

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