

# Conservative management of leakage after laparoscopic sleeve gastrectomy

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## ABSTRACT

Laparoscopic sleeve gastrectomy (LSG) is a common surgical procedure for the treatment of morbid obesity. Severe complications may result with significant morbidity and mortality. Staple-line leakage is a rare, but important, complication. Here we present the case of a patient with staple-line leakage after LSG who was treated conservatively. The patient was a 36-year-old female with a body mass index of 43. LSG was performed. The postoperative course was uneventful and the patient was discharged on postoperative day 3. She presented with fever and back pain on postoperative day 5. An intermediate, type 2 staple-line leak was confirmed with computed tomography (CT). The patient was treated conservatively. The patient was well 1 year after the initial treatment and a follow-up CT confirmed complete resolution. Leakage and related morbidity and mortality after LSG may be a challenge for the patient and the surgeon. Early diagnosis and aggressive treatment is essential to overcome potential serious consequences. In some selected patients, a conservative approach with close observation may help to manage leakage after LSG.

**Keywords:** Laparoscopic sleeve gastrectomy; leakage; morbid obesity.

## Introduction

Laparoscopic sleeve gastrectomy (LSG) is a common surgical procedure for the treatment of morbid obesity.<sup>[1]</sup> Initially the procedure was defined as a part of duodenal switch and biliointerteric diversion, but was recognized as a sole procedure for.<sup>[2]</sup> LSG has lower rates of morbidity, however complications may be severe and result with mortality.<sup>[3]</sup> Leak is the most important complication after LSG with reported rates between 0.7–5%.<sup>[4]</sup> Prompt diagnosis and aggressive treatment are essential to minimize chronic gastric fistula, multiple organ failure and related

mortality rates.<sup>[5]</sup> Computed tomography is not only useful in the diagnosis but also may be useful treatment with drainage. The conservative approach can be done in the context of computerized tomography (CT) drainage, broad-spectrum antibiotics, total parenteral nutrition (TPN). In this case report a conservative management of stapler line leakage after LSG was presented.

## Case Report

A 36 years old woman with BMI 43 was treated with LSG. The patient was morbid obese for the last 17 years with



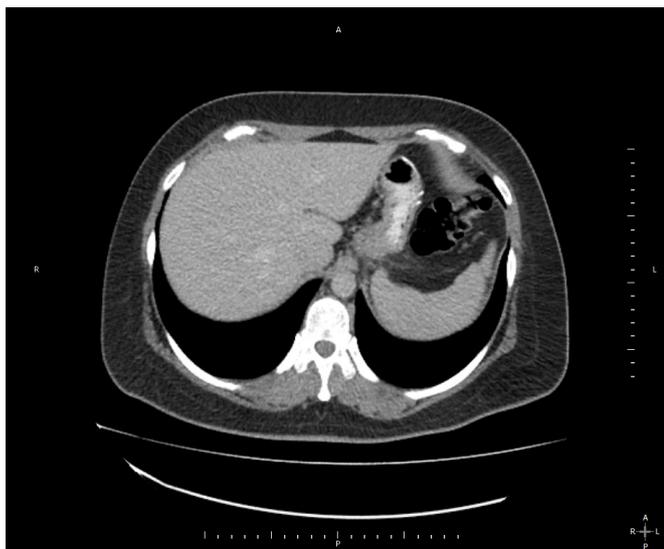
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Type 2 DM (was regulated with oral antidiabetics), and asthma. Intra-operative routine methylene blue test was negative. Nasogastric tube was withdrawn after methylene blue test. On postoperative day one methylene blue test was negative and oral water only was begun. On postoperative day two methylene blue test was repeated and was negative and the drain was removed. Patient was discharged on postoperative day three. On postoperative day five the patient was presented with back pain and fever. Leukocyte count and CRP were elevated. Abdominal examination was not relevant. Computed tomography has demonstrated free abdominal gas and contrast extravasations at level of fundus (Fig. 1). Percutaneous drainage was not feasible due to the localization. Oral intake was restricted



**Figure 1.** Contrast extravasation at the level of fundus, contrast enhanced computed tomography.



**Figure 2.** Complete resolution after one year follow, contrast enhanced computed tomography.

and TPN was begun with parenteral meropenem. After a course of 14 days of conservative treatment the patient did well, CT demonstrated regression of the collection. Thus oral intake was begun and patient tolerance was well. Patient was discharged and CT control after one year was clear (Fig. 2). Control BMI was 32.8 and excess weight loss was 57.7% and DM was resolved.

## Discussion

LSG may be considered more doable than gastric bypass.<sup>[6]</sup> However, surgical technique is important to minimize surgical complications. Meticulous dissection and tissue handling, tissue stapler coherence, and adequate homeostasis are cornerstones of surgical technique. Inadequate healing of stapler line, decreased blood flow, infection, ischemia, and inadequate oxygenisation are risk factors for leakage. Classical ischemic leakage occurs 5–7 days after surgery.<sup>[7]</sup> Extra luminal gastric leakage, fistula, peritonitis, abscess, sepsis, organ failure and mortality may occur. Leakage may be asymptomatic with radiologic findings or may manifest with septic shock and multiorgan failure leading to death. Subclinical leakages are defined as type 1 and clinical leakages are type 2. Csendes et al.<sup>[8]</sup> defined postoperative leakages early if occurred on one to three days, intermediate if occurred in four to seven days and late for those manifested after eight days. Our case was an intermediate leakage that occurred on postoperative day five. Type 2 leakage was observed with fever, back pain, and leukocyte and CRP elevations. Diagnosis was confirmed with CT and conservative management was begun and patient response was well. However it is important to remember that for those patients no needs further treatment after three months surgery should be considered. Early leakages may require abdominal lavage, drainage and suture management of stapler line leakages.<sup>[9]</sup> Intermediate and late leakages may also need such surgical approaches.<sup>[10]</sup>

Endoscopic interventions may have significant place in the management of leakage after LSG. Endoscopic stenting, fibrin glue, clips or nasojejunal feeding catheter placements are important procedure to help the patient.<sup>[11]</sup>

## Conclusion

As a conclusion, leakage and related morbidity and mortality after LSG may be a challenge for the patient and surgeon. Early diagnosis and aggressive treatment is essential to overcome potential consequences. In some selected

patients conservative approach with close observation may help to manage the leakage after LSG.

### Disclosures

**Informed Consent:** Written informed consent was obtained from the patient for the publication of the case report and the accompanying images.

**Peer-review:** Externally peer-reviewed.

**Conflict of Interest:** None declared.

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