

Case Report: Acute Intrathoracic Sleeve Migration with Partial Volvulus after Laparoscopic Sleeve Gastrectomy and Hiatal Hernia Repair

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Abstract

Laparoscopic sleeve gastrectomy (LSG) is the most commonly performed bariatric procedure in the United States and is widely accepted due to its technical ease and effectiveness. Concomitant hiatal hernia repair, if detected during an LSG, is recommended. Intrathoracic sleeve migration (ITSM), a sliding hiatal hernia that develops after LSG, is a rare complication of this procedure. This report presents an early case of ITSM due to intermittent retching, resulting in postoperative incarceration of the proximal sleeve. The patient is a 28-year-old female who underwent concomitant LSG and hiatal hernia repair and was readmitted for acute entrapment of the proximal portion of the sleeve. The patient underwent re-operation with reduction of the proximal sleeve, and omentopexy was performed for stabilization. Intraoperative esophagogastroduodenoscopy was performed to ensure the detorsion and patency of the sleeve before the surgery. No additional hiatal hernia repair was attempted. ITSM with incarceration is an interesting phenomenon that is underrecognized and underreported. It can present postoperatively with reflux symptoms and poor oral tolerance. Failure to make an accurate diagnosis and intervene can result in prolonged hospitalization and poor patient outcomes.

Keywords: *postoperative sleeve gastrectomy complications, hiatal hernia repair, bariatric surgery, bowel volvulus, sleeve gastrectomy.*

Introduction

Obesity rates in the United States continue to rise, with estimates suggesting that 65% of the population will be obese by 2025. Laparoscopic sleeve gastrectomy (LSG) is a commonly performed surgical procedure for the treatment of morbid obesity. It offers advantages such as minimal complications and low morbidity. However, complications can still occur, including intrathoracic sleeve migration (ITSM) and acute incarcerated hiatal hernia. These complications, although rare, require prompt diagnosis and surgical intervention. The decision to repair a hiatal hernia during LSG remains a debated topic, but there is a growing consensus to assess and repair it if present. This report presents a case of acute incarcerated hiatal hernia with partial volvulus due to ITSM in a patient who underwent concomitant hiatal hernia repair with LSG. [1-11]

Case Description

A 28-year-old female patient with morbid obesity (BMI 47.8 kg/m²) underwent LSG and primary hiatal hernia repair. On postoperative day 4, the patient presented to the emergency room with symptoms of difficulty swallowing and inability to keep fluids down. Diagnostic imaging revealed an incarcerated proximal sleeve in a previous intrathoracic hernia. Intraoperatively, the proximal sleeve was detorsed, reduced back into the abdominal cavity, and confirmed for patency using esophagogastroduodenoscopy (EGD). The previous hiatal hernia had reduced in size, and no further intervention was required.

Discussion

LSG is commonly associated with hiatal hernias and repairing them at the time of surgery is a topic of debate. Reflux symptoms and hiatal hernias are prevalent in patients undergoing LSG, and failure to repair hiatal hernias can lead to complications such as reflux, poor oral tolerance, and intrathoracic migration of the sleeve. The consensus is leaning toward repairing hiatal hernias if detected during LSG. Various surgical techniques can be employed to stabilize the stomach, such as hiatoplasty, cardiopexy, or modified fundoplication.

Intrathoracic migration of the sleeve is a rare complication that can occur due to several factors, including inadequate repair techniques and persistent retching. Prompt diagnosis through imaging techniques such as upper GI series or CT scan is crucial. Surgical intervention is necessary to prevent gastric ischemia and other complications associated with ITSM. [1-11]



Figure 1: Upper GI series with oral gastrografin. **A)** 1 minute interval
B) 10 minutes interval.



Figure 2: Computed tomography of the abdomen of incarcerated proximal sleeve (arrow points at the staples). **A)** axial view **B)** coronal view.

Conclusion

Intrathoracic migration of the proximal sleeve after laparoscopic sleeve gastrectomy is a rare complication, but it should be considered in patients presenting with poor oral tolerance and symptoms of reflux postoperatively. Adequate repair of hiatal hernia during the initial surgery is important to prevent sleeve migration. Prompt diagnosis with upper gastrointestinal series or CT scan and timely surgical intervention are crucial to prevent complications such as gastric ischemia. Various surgical techniques can be employed to stabilize the stomach and prevent sleeve migration, but further research is needed to determine the optimal approach. In this case, detorsion and reduction of the sleeve with omentopexy resulted in a successful outcome without the need for additional intervention on the hiatal hernia. Close monitoring and appropriate management of postoperative complications are essential for ensuring the safety and long-term success of laparoscopic sleeve gastrectomy procedures.

Conflict of Interest

The authors declare no conflict of interest.

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