

Intrathoracic migration of gastric sleeve: A rare complication in weight loss surgery. A case report

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Background:

We present the case of a 74-year-old man with a history of gastric sleeve 6 years ago, who was admitted to the emergency department for external causes; However, during his admission, a long history of symptoms corresponding to gastroesophageal reflux disease was evident, and said pathology was diagnosed with extension studies, along with the presence of a hiatal hernia. This report will discuss appropriate decision making in the context of a rare complication and its management in a third level hospital.

Keywords: Sleeve gastrectomy, bariatric surgery, hiatal hernia.

Mexico City, Mexico

Case Report

Bariatric Surgery



Gastric sleeve surgery is still the leading weight loss procedure in Mexico and globally (1,2). The advantages of such a procedure, include long term weight loss and reduction or remission of certain obesity related comorbidities (3). Whereas postoperative complications are unusual, the most common complications reported in literature are leakage of the staple line, stenosis of the gastric pouch, migration of the sleeve, wound infection, and nutritional deficits (4). In the context of gastric remnant migration, strategies have been proposed to prevent and reduce its incidence, such as an early diagnosis and repair of a hiatal hernia at the time of the weight loss procedure. However, even with this measure, recurrences may occur. We present a case of a 74-year-old male, with history of a laparoscopic gastric sleeve surgery performed 6 years ago with a complete intrathoracic migration of the gastric remnant who underwent a laparoscopic reduction of the hiatal hernia and hiatal repair, without the need for conversion to gastric bypass.

Case report

A 74-year-old male, with history of a laparoscopic gastric sleeve surgery performed 6 years ago, and with symptoms of gastroesophageal reflux disease (GERD) 2 months prior to hospital admission which were managed conservatively with proton pump inhibitors and prokinetics. Patient current condition began on the day of admission to the emergency department after falling from 10 stairs, arriving with

multiple bruises on both elbows, chest, abdomen, and both legs with onset of pain in the left hemithorax and elbow. He underwent rib fixation for a 6th left rib fracture and conservative treatment for left elbow bursitis. However, during his hospitalization, he developed sudden onset of abdominal pain in the upper right quadrant after food intake. Additionally, he experienced exacerbation of typical and atypical GERD symptoms, with heartburn being the most consistent complaint. Consequently, a referral to general surgery was made.

An abdominal CT scan (Figures 1A, 1B) was performed, revealing cholecystolithiasis, with gallbladder wall thickness of 6.6 mm and fat infiltration of the pancreas, along with complete intrathoracic migration of the previously known surgical gastric remnant. Subsequently, with an upper abdominal ultrasound the diagnosis of acute cholecystitis was made. Regarding GERD symptoms, an upper endoscopy was performed, revealing grade C reflux esophagitis and hiatal hernia of 2 cm.

The patient was scheduled for laparoscopic anti-reflux surgery with Gastric Sleeve conversion to Roux-en-Y Bypass and concomitant cholecystectomy. Laparoscopy a Parkland III gallbladder swill as a giant hiatal hernia of approximately 5 cm, along with previous known intrathoracic gastric remnant migration with moderate peri esophagitis (Images 2A and 2B). Adhesiolysis was performed followed by dissection and reduction of hernia sac and posterior repair of the hiatal defect with non-absorbable

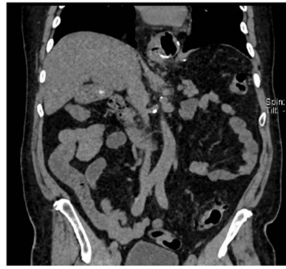


Figure 1A.

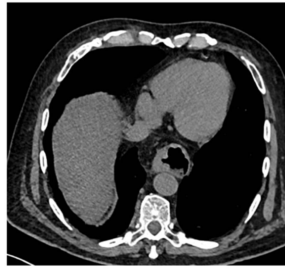


Figure 1B.

Figure 1. A. Coronal view of diaphragmatic hernia in abdominal computed tomographic scans shows diaphragmatic hernia in coronal view. B. Axial view.

interrupted suture. The gastric remnant was anchored to the right diaphragmatic crura (Figure 3).

Intraoperative upper endoscopy was performed to rule out stenosis and verify the adequate positioning of the gastric remnant. Cholecystectomy was performed using standard technique without any complications. Two drains were placed, one directed towards the gallbladder bed and a second drain towards the esophageal hiatus.

In the postoperative course, the patient progressed without complications, tolerating oral intake within 24 hours after the surgical procedure. Both drains exhibited serosanguineous output without evidence of active bleeding or perforation. Drains were removed and the patient was discharged within 48 hours postoperatively.

Discussion

The incidence of bariatric procedures worldwide has remained consistent over the years. Gastric sleeve surgery continues to be the most performed bariatric procedure globally, making it essential for surgeons to deal with such patients as well to familiarize with its complications. Gastric sleeve herniation and persistent GERD are associated with the presence of hiatal hernia, thus concurrent search and repair are recommended whenever gastric sleeve surgery is performed (5). Given the occurrence of these postoperative emergencies, some authors advocate for a routine postoperative protocol involving water-soluble contrast medium esophagogram for early identification of such cases (6).

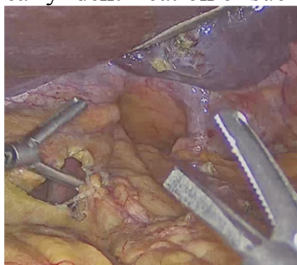


Figure 2A.

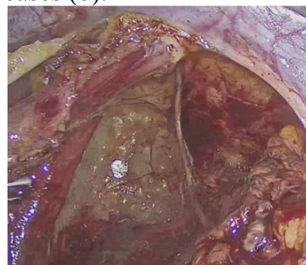


Figure 2B.

Figure 2. Laparoscopic view of hiatal hernia of 5 cm. B. Dissection of hernia sac.

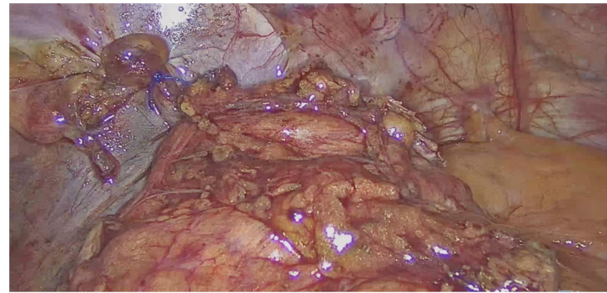


Figure 3. Laparoscopic view of repaired hiatal hernia and anchored gastric remnant.

The pathophysiology of this condition is not entirely clear, but associated risk factors have been proposed, including postoperative weight loss linked to visceral fat reduction, progressive enlargement of the esophageal hiatus, dissection of the phrenoesophageal membrane during surgery, and gastric fundus resection (7). There are few reported cases in literature, and most have been resolved with conversion from gastric sleeve to Roux-en-Y gastric bypass (8). However, patient-related factors must be considered, and a personalized approach should be employed due to the malabsorption complications associated with this conversion, as well as the operative risks involved in creating a bowel anastomosis (9).

Therefore, in this case, the decision was made against conversion to Roux-en-Y gastric bypass given that the patient already had an appropriate BMI following gastric sleeve surgery, before the gastric sleeve, the patient had a BMI of 41.1 (class 3 obesity), at the moment he has a BMI of 25.7 therefore, there is no indication to perform a conversion to bypass because it is within its appropriate weight, the age was another factor, and lastly an intraoperatively, the gastric remnant was observed to be in a suitable position after hernia reduction and hiatal repair. Thus, the least morbid approach was chosen to avoid subjecting the patient to new anastomoses and the risk of malabsorption.

Currently, the patient is progressing well, GERD-related symptoms have subsided, and there has been no need for reintervention or additional complementary studies. Therefore, based on this management experience, opting not to convert to Roux-en-Y gastric bypass can be considered a viable surgical treatment option.

Conclusion

Gastric sleeve surgery carries a risk of gastric remnant migration. Recognizing concomitant hiatal hernia is a key factor in reducing incidence in our patients. However, even with appropriate surgical and postoperative protocols, we may encounter this condition. Therefore, we must be prepared to address this complication when it arises. Revision surgery

involving reduction, hiatal hernia repair, and conversion to Roux-en-Y gastric bypass is a safe, viable, and effective option in treating intrathoracic migration of the gastric sleeve. However, in this clinical case, gastric migration reduction and hiatal plication yielded favorable results without the need for conversion to Roux-en-Y gastric bypass. It is a rare complication that as surgeons, we must be equipped to handle along with potential solutions.

Conflicts of interest

There is no conflict of interest in this case.

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