

Right Hepatic Lobe Herniation after Sleeve Gastrectomy: A Case Report

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Abstract

Sleeve gastrectomy is a vertical gastric resection with tubulation of the residual stomach. It is an irreversible procedure, which causes a marked reduction in appetite and early satiety, with consequent significant weight loss (>70% excess weight). As a surgical procedure, sleeve gastrectomy can present complications similar to those of other abdominal surgeries, such as bleeding or fistulization (a rare event). Other events are staple line leakage, hemorrhage/hematoma or a splenic injury. Late complications are gastric dilatation/stricture or the hiatal hernia. We evaluated a 53-year-old patient with a history of severe obesity, and we observed a rare complication of the surgery performed to treat the patient's obesity.

Keywords

Herniation, Right hepatic lobe, Obesity, Sleeve gastrectomy

Introduction

In the Western world, obesity is a very serious problem that is of great importance from both a health and social point of view and with significant economic implications on the costs of caring for these patients [1, 2]. The obesity epidemic has reached alarming proportions globally, making it one of the most pressing public health concerns. In fact, obesity leads to increased disease burden, decreased life expectancy, with a strong association between obesity and mortality [3, 4]. Women have a higher percentage of body fat content compared to men, so gender appears to be an important factor in the manifestation of obesity. Bariatric surgery is the preferred method to achieve significant weight loss in patients with severe obesity. However, there is no total agreement and no consensus regarding the best procedures (Roux-en-Y gastric bypass, sleeve gastrectomy, and endoscopic sleeve gastroplasty, sleeve gastrectomy single-anastomosis duodenoileostomy, and intra-gastric balloons) for this population [5]. Laparoscopic sleeve gastrectomy (LSG) gained popularity both as a first-stage approach and as a stand-alone procedure. The beneficial effects of LSG on lipid parameters and cardiometabolic risk in young adult women are known [6]. LSG seems to maintain its well-documented weight loss outcome at 5 or more years postoperatively, with the overall mean percentage excess weight loss at 5 or more years after LSG still remaining >50% [7]. So, the existing data supports the role of LSG in the treatment of morbid obesity. However, it must be said that in addition to the short, medium and long-term results of bariatric treatment through LSG, this procedure is not free from complications and side effects. We observed one of these in the evaluation of one of our patients.

Case Presentation

We evaluated a 53-year-old patient with a history of severe obesity, type 2 diabetes mellitus, right-sided kidney, fatty liver, chronic renal failure, with previous cerebral hemorrhage with right hemilateral sequelae, uterine fibroma. Reported partial independence in activities of daily living and walking possible with the aid of a cane prior to current hospitalization. She possesses a cane, wheelchair, and a disability certificate. As internists and specialists in physical and rehabilitation medicine, we were called to consult for this patient, who we found to be in poor general condition and with several disabilities affecting her quality of life. From the shared management, it was decided to admit her to the Internal Medicine Department - Obesity Medical Center, with a diagnosis of "pneumonia in an obese patient" and to operate once the pulmonary comorbidity had been resolved.

So, the patient had undergone this surgery in order to lose weight, to establish a motor program. On a chest computerized tomography (CT) scan, performed for elevated inflammation indices secondary to the treated pneumonia, we saw, at the limits of the abdominal examination volume, the presence of an anterolateral right hepatic lobe. This finding was clearly visible in both the coronal and axial plane (Figure 1) scan frames. We diagnosed a right hepatic lobe herniation as a consequence of intracorporeal anatomical changes following sleeve gastrectomy surgery.

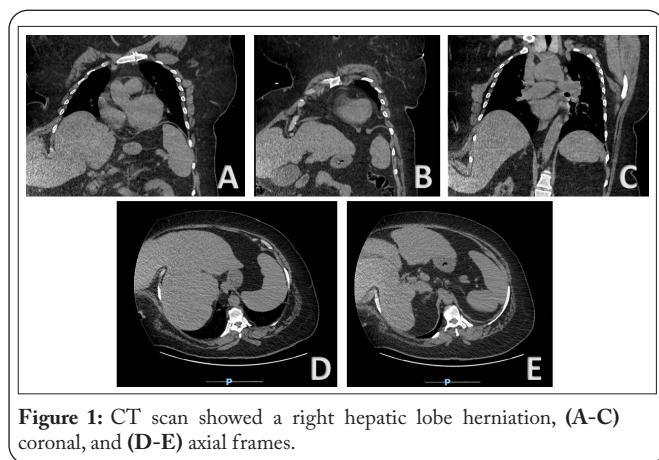


Figure 1: CT scan showed a right hepatic lobe herniation, (A-C) coronal, and (D-E) axial frames.

Upon observation, the patient appeared alert, oriented in all three axes, and cooperative. A bladder catheter, peripheral venous cannula, and nasal cannulas for oxygen therapy at 3 liters/min were present, in the presence of severe obesity. No swelling was noted upon abdominal palpation. Scars from trocar placement were present. The range of motion of the main articular fulcrums of the four limbs appeared compatible with her age, with reported pain during passive mobilization of the right lower limb. Segmental muscle strength of the main muscle groups of the upper limbs and the right lower limb was 3/5 and 4/5 in the left lower limb according to Medical Research Council. Manual grips and digital forceps were valid bilaterally. The patient independently reached the sitting position at the edge of the bed using strategies and maintained this position with reasonable trunk control. Negative pressure and percussive spinal pain occurred along the entire spine.

However, she reported moderate fatigue and dizziness. Biceps tendon reflexes (TR) were normal bilaterally elicitable. Patellar TR were hypoelicitable bilaterally. The plantar cutaneous reflex appeared to be elicited in flexion bilaterally. Superficial tactile sensation was apparently intact in the areas examined. The chest appeared hypoexpandable; cough was poor.

Management and Intervention

Given the patient's clinical and functional status, a Motor and Respiratory Rehabilitation Program was prescribed from a rehabilitation perspective, consisting of: therapeutic exercises involving active-assisted and active mobilization of the main joint fulcrums of the four limbs; training in postural transitions, gradually reaching a sitting position at the edge of the bed and subsequently an upright position, and maintaining this position for progressively increasing periods; therapeutic trunk stabilization exercises; therapeutic breathing-movement coordination exercises; inspiratory and expiratory training.

Therapy was started based on pregabalin, furosemide, allopurinol, acetylsalicylic acid, spironolactone, perindopril, pantoprazole, insulin degludec and aspart, levofloxacin, enoxaparin. After two weeks, if the clinical picture improved and vital signs remained stable, the patient could be discharged home.

Discussion

LSG is a vertical gastric resection with tubulation of the residual stomach [8]. The patient, in supine position, in French position and anti-Trendelenburg, was fixed to the operating table. Five 12 mm trocars were used with pneumoperitoneum induced by a Veress needle, maintained at 12 - 14 mmHg. The first trocar was inserted along the left midclavicular line about 3 - 4 fingers from the costal arch; two other trocars were introduced on the right and left flank, a fourth trocar in the epigastrium and a final trocar along the right midclavicular line a few centimeters below the contralateral. A 10 mm optic was introduced at the epigastric level for better control of the gastroesophageal junction. The left hepatic lobe was retracted, exposing the lesser gastric curvature and the gastroesophageal junction. The small branches of the gastroepiploic arch were sectioned with a bipolar dissector, opening the retrocavity of the epiploon, and the dissection was continued with a bipolar or ultrasonic dissector along the greater curvature of the stomach, very close to the gastric wall, up to the short gastric vessels, which were also sectioned, while caudally the dissection was extended up to about 5 - 6 cm from the pylorus. The stomach was then lifted to expose its posterior wall with lysis of the adhesions of the retrocavity. The angle of his was mobilized with exposure to the left diaphragmatic pillar. At this point the gastric tubule was created. It is an irreversible procedure, which causes a marked reduction in appetite and early satiety, with consequent significant weight loss (>70% excess weight) [9, 10]. Sleeve gastrectomy, like any abdominal surgical procedure, carries the risk of complications, including bleeding [11, 12] and, albeit rarely, fistulization [13]. Other potential adverse events include staple line leakage, hemorrhage or hematoma, and splenic injury [14, 15].

Late complications are a gastric dilatation/stricture or the hiatal hernia [16, 17]. Based on the results of some studies in literature, LSG led to a considerable rate of postoperative “de novo” gastroesophageal reflux disease (GERD) and, in addition, no improvement was found in patients with symptomatic GERD after LSG. Recent scientific paper on 4 randomized controlled trials showed that laparoscopic Roux-en-Y gastric bypass is associated with a higher proportion of surgical and endoscopic interventions at 5 years compared with laparoscopic vertical sleeve gastrectomy. More high-quality, long-term studies are required to further elucidate both surgical and nutritional long-term outcomes post these procedures [18]. The rate of all complications appears to be decreasing after the advent of robotic surgery (including bariatric surgery) [19].

Our reasoning in evaluating the examined clinical case report is that this finding should be ascribed to the sleeve gastrectomy procedure. Rapid and substantial weight loss following the procedure can lead to significant structural changes in the abdominal wall, heightening the risk of hernias, particularly through the trocar sites used during laparoscopic surgery. Despite this theoretical risk, such occurrences remain exceedingly rare. In a recent study the complication observed (in one case) on the liver was liver abscess [20].

Conclusion

To date, and based on the current body of evidence, this is the first case of anterolateral right hepatic lobe herniation reported in medical literature. As seen, the adoption of accelerated rehabilitation protocols, which include immediate mobilization and feeding, drastically reduces post-operative complications.

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None.

Conflict of Interest

None.

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