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Case Report

Complications of bariatric surgery three procedures and ten years later

Giovanna Osorno Carbonell*, Francisco de Jesus Cisneros Arias

Department of General surgery, IMSS, Torreon Coahuila, México

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***Correspondence:**
Dr. Giovanna Osorno Carbonell,
E-mail: giovis_94@hotmail.com

ABSTRACT

Two types of metabolic surgeries are currently most used: vertical tubular gastrectomy and Roux-en-Y gastric bypass. Complications can be early and late. There are 3 types of revision surgeries: corrective and reversal surgeries, to restore normal anatomy, and conversion surgeries, which consist of changing to another bariatric procedure for complications or inadequate response. We report the case of a 47-year-old female who, 10 years prior to her admission, underwent vertical gastrectomy, presenting symptoms refractory to PPI treatment one year after surgery, so conversion to gastric bypass was performed. Seven years later, she came to us due to stenosis of the gastrojejunal anastomosis as well as marginal ulcer. She underwent a total of 4 dilations in 6 months, with no improvement in symptoms. We decided to perform gastrojejunal anastomosis remodeling. She presents an adequate post-surgical evolution. It is essential to know the complications derived from bariatric surgery and the management options we have, as well as to carry out long-term follow-up, to guarantee not only the desired weight loss or improvement in comorbidities, but also an adequate quality of life in the patient.

Keywords: Bariatric surgery, Bypass, Complications, Conversion surgery, Anastomotic stenosis

INTRODUCTION

Metabolic surgery is currently on the rise, as our country ranks second in the world in obesity and is no exception. Approximately 33.3% of the population in Mexico is affected. According to a high-volume center in our country, 135 bariatric surgeries are performed annually.[1] Due to the increase in cases, associated complications have also been increasingly observed. There are four procedures currently used, classified according to their mechanism of action. Two techniques are strictly restrictive: the adjustable gastric band and the gastric sleeve. One is mixed (restrictive-malabsorptive) the Roux-en-Y gastric bypass. The remaining one is fundamentally malabsorptive: the biliopancreatic diversion, with a variant known as the duodenal switch.[2] Two types of surgeries are most commonly used: vertical sleeve gastrectomy and Roux-en-Y gastric bypass. The first involves creating a gastric pouch using mechanical sutures and removing the remaining stomach. The second procedure creates a gastric remnant with a capacity of no more than 60 cm^3, which is tubular and vertical along the lesser curvature. This remnant is isolated from the remaining stomach, detransition this segment, and then creating the Roux limb to form a gastrojejunal anastomosis with the gastric pouch and another from the alimentary limb to the biliopancreatic limb.[2,3] Complications arising from these procedures are varied. Early complications include anastomotic leak, with an incidence of 1-6% after bypass and 3-7% after gastric sleeve, as well as others like fistula formation and bleeding from the staple line. Late complications include anastomotic stenosis, affecting approximately 12% of patients after bypass, typically occurring around 50 days post-surgery, primarily involving the gastrojejunum anastomosis. Intestinal occlusion affects 5% of patients, while pulmonary complications such as pulmonary thromboembolism and deep vein thrombosis are also

observed. Nutritional and hepatobiliary complications, such as cholelithiasis, are significant. Gastrointestinal issues include gastric ulcers in approximately 15% of patients without a specific cause (Table 1).[4]

CASE REPORT

A 47-year-old female patient with a history of hypothyroidism and generalized anxiety disorder underwent several surgical procedures: two cesarean sections 22 years ago, a hysterectomy 5 years ago, a gastric sleeve 10 years ago, and a conversion to gastric bypass 7 years ago. Her medical history began 10 years ago with a BMI of 40, leading to vertical gastrectomy-type bariatric surgery, resulting in a weight loss of approximately 20 kilograms in 1 year. One-year post-surgery, she experienced episodes characterized by substernal pain, heartburn, and persistent gastroesophageal reflux. Due to symptoms refractory to proton pump inhibitor treatment, she underwent a conversion to gastric bypass without complications. However, 3 years ago, she began experiencing substernal pain accompanied by frequent postprandial fullness.

Table 1: Complications.

Intraoperative	Perioperative	Late
	Anastomotic Leak (1%)	
	Gastrointestinal Bleeding (2.5%)	Anastomotic stenosis (3-12%)
	Trocar injury (0.1%)	Marginal ulcer (0.5-20%)
	DVT (0.1%)	Intestinal obstruction (2.5%)
Esplenic trauma (0.41%)	PET (1%)	Post incisional hernia (0.5-8%)
	Intestinal occlusion	Internal hernia (1-3%)
	Surgical site infection (3%)	Dumping syndrome (30%)
	Pneumonia (0.2%)	Cholecystitis (30%)
	Mortality due to cardiac event (0.2-1%)	

An endoscopy performed on 19th November 2022 revealed a 4 cm hiatal hernia, stomach with surgical effects from gastric sleeve and bypass, punctate gastrointestinal communication with 2 mm concentric stenosis, and ulcerated and inflammatory hemorrhagic areas, successfully treated with dilation. Following the endoscopy, she reported partial symptom improvement. Despite undergoing 4 dilations in 6 months, her symptoms persisted and worsened, prompting a decision for remodeling of the gastrojejunal anastomosis. The surgical procedure revealed a 4 cm hiatal hernia and approximately 4 mm stenosis of the gastrojejunal anastomosis. Plication of the diaphragmatic pillars and remodeling of the gastrojejunostomy were performed using an open technique, with resection of the stenotic segment and creation of a new anastomosis with a 60 mm linear stapler, reinforced with manual sutures. She had a favorable post-surgical recovery, discharged after 3 days tolerating a soft oral diet without gastroesophageal reflux or other symptoms. Follow-up after one month showed significant improvement in pre-surgical symptoms, tolerating both liquids and solids well. She reported occasional vomiting once, approximately one week after surgery, and no weight loss in the last month.

DISCUSSION

As bariatric procedures increase, more studies compare various techniques, emphasizing benefits and delving into complications. In the case presented, a complication from gastric sleeve surgery, persistent gastroesophageal reflux, worsened postoperatively despite PPI use, reported by the patient to be worse than before surgery. Therefore, gastric bypass conversion surgery was decided. The literature identifies 3 types of revision surgeries, corrective and reversal surgeries restore normal anatomy, while conversion surgeries change procedures due to complications or inadequate response.[5] Guan et al reported approximately 3.1% of patients needing GERD revision, favoring Roux Y bypass.[6,7] Our patient developed two main complications post-bypass: anastomotic stenosis and marginal ulcer. Endoscopic findings classified the stenosis as grade 3 (severe, allowing passage of a guide wire). Treatment includes pneumatic dilation, with subsequent sessions scheduled if initial dilation fails to achieve 15 mm. Ahmad et al found balloon dilations effective, with most patients requiring only one or two sessions within 30 months.[8,9]

Despite four dilations, our patient showed partial symptom improvement. The optimal number of dilations before considering surgical remodeling remains unclear, with stenoses after 90 days to one year posing higher risks of endoscopic treatment failure.[10] Larsen et al note that truly refractory strictures are rare and often due to jejunal torsion rather than fibrotic anastomotic strictures.[11] The decision for surgical remodeling depends on individual case specifics and surgeon discretion. In this case, our patient underwent four dilations without satisfactory symptom reduction, leading to gastrojejunal anastomosis remodeling and successful symptom remission post-surgery.

CONCLUSION

A thorough understanding of gastrointestinal anatomy and physiology is crucial for the effective management of bariatric surgery. This discipline allows us to anticipate and address complications such as persistent gastroesophageal reflux and anastomotic strictures, which can arise after procedures like gastric bypass. Research indicates that up to 3.1% of patients may require revision surgery due to these complications. Endoscopic dilation techniques and other corrective surgical interventions play a crucial role in managing these complications. Continuous surveillance and personalized treatment are essential to optimize postoperative outcomes and improve patients' quality of life. The current impact of bariatric surgery is influenced by advances in surgical techniques and the management of complications, underscoring the importance of comprehensive training in gastrointestinal anatomy for health professionals. This not only improves clinical outcomes but also promotes safer and more effective care in the treatment of morbid obesity and its health implications.

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