

Laparoscopic Adjustable Gastric Band Removal for Persisted Gastroesophageal Reflux Disease

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Abstract

Adjustable gastric band (AGB) is one of multiple bariatric surgical treatments. Its application has been decreasing due to medium and long term complications. Gastroesophageal reflux disease (GERD) is considered a late complication of AGB, although in the short term this procedure produces improvement of GERD symptoms. A case of a female with GER for 5 year after AGB procedure refractory to medical treatment is presented. She achieved relief of GERD symptoms after laparoscopic gastric band removal.

Keywords: Laparoscopic Adjustable Gastric Banding; Gastroesophageal Reflux Disease; Barrett's Esophagus; Sliding Hiatal Hernia

Abbreviations

BMI: Body Mass Index; GERD: Gastroesophageal Reflux Disease

Introduction

Bariatric surgery is now also called metabolic surgery since it not only reduces the body weight of patients, also improves comorbidities associated with obesity such as type 2 diabetes mellitus, obstructive sleep apnea syndrome, hypertension, asthma, dyslipidemia [2,3].

Within bariatric surgery, the most widely used procedures worldwide are the laparoscopic adjustable gastric band (AGB), laparoscopic gastric sleeve (vertical gastrectomy) and laparoscopic Roux-en-Y gastric bypass [4].

AGB is a restrictive surgery and it is the least invasive laparoscopic surgery, potentially reversible and functional in 30 to 39% of patients for 10 years [5-7]. It is also effective and safe as surgical treatment in patients with morbid obesity with gastroesophageal reflux disease or hiatal hernia type I (sliding) in the short term, because it produces a significant weight loss and improvement of reflux symptoms [1].

It is postulated that the suppression of gastroesophageal reflux by the gastric band is due to weight loss, reduction of intragastric pressure and anatomical increase of the gastroesophageal sphincter and reconstitution of the angle of His, but the improvement of reflux symptoms and esophagitis appear to be in the short term, since there have been new cases or worsening of gastroesophageal reflux, as a late complication related to gastric band [1,2,8-11].

Case Report

A 50-year-old female patient with a history of AGB and diaphragmatic hiatus repair in 2013, as obesity and sliding hiatal hernia treatment.

Prior to bariatric and hiatus surgery, the patient had a 35.1 kg/m² (size 161 cm, weight 91 Kg). Achieved a decrease to 49 Kg of body weight (BMI = 18.9 kg/m²) in the first 2 postsurgical years and maintained between 49 - 50 Kg in the following 3 years.

After gastric banding insufflation (2 cm³), August 2018, the patient had postprandial vomiting and moderate dehydration, therefore gastric band fluid was removed and rehydration with intravenous crystalloid solutions was achieved.

After that, she persisted with regurgitation, epigastric and retrosternal pain, and gastric fullness after fluid intake, accompanied by nausea of 14 days of evolution. On September 03, 2018 endoscopy was performed. The upper endoscopy showed: Hiatal hernia type II (paraesophageal) complicated with esophagitis (Grade III Savary Miller classification) and chronic gastritis predominantly in gastric fundus (Figure 1). She was treated at first with diet (restriction of spicy food, in small portions), prokinetic (cinitapride 1 mg granulated orally diluted in ½ glass of water every 8 hours), and proton pump inhibitor (pantoprazole 40 mg 1 tablet orally every 24 hours). After 14 days treatment she had partial symptoms improvement.

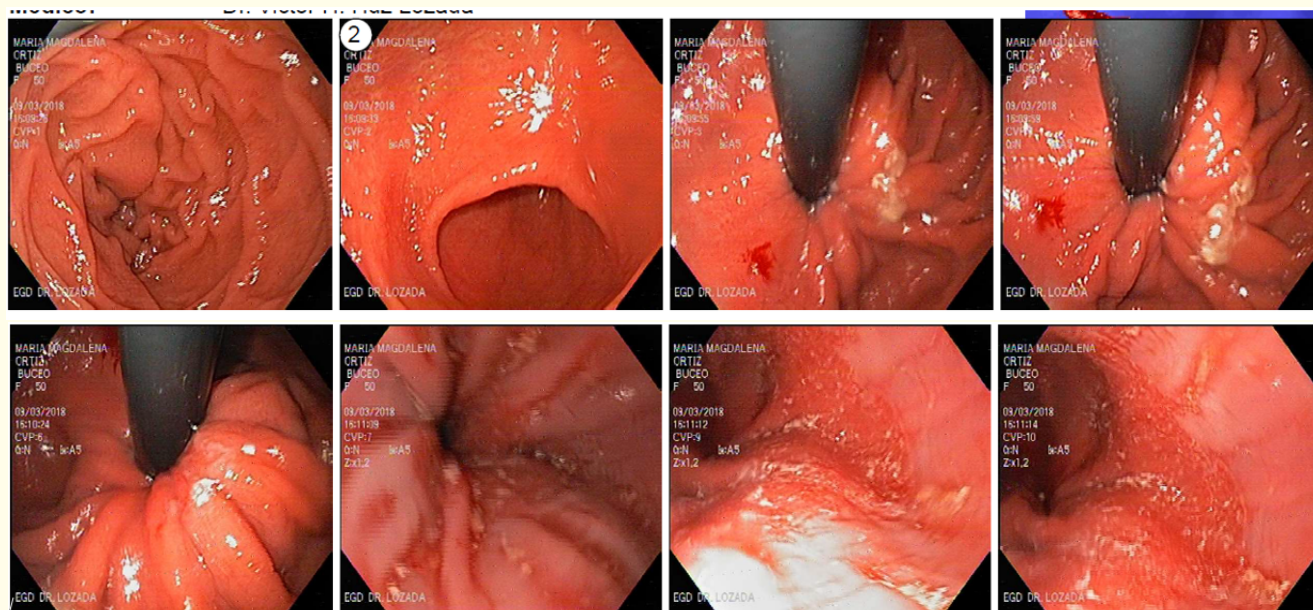


Figure 1: Upper endoscopy September 3th, 2018.

Since GERD symptoms persisted and a normal body weight was achieved, a laparoscopic gastric band removal, repair of diaphragmatic crura was offered (October, 2018). The surgery was carried out with surgical laparoscopic removal of gastric band, heavy adhesiolysis, diaphragmatic crura repair (Figure 2) and transoperative endoscopy (Figure 3), in the Hospital Multimédica, in Mexico. After two days, she was discharged after adequate postoperative evolution. In the follow-up, she was without GERD symptoms.

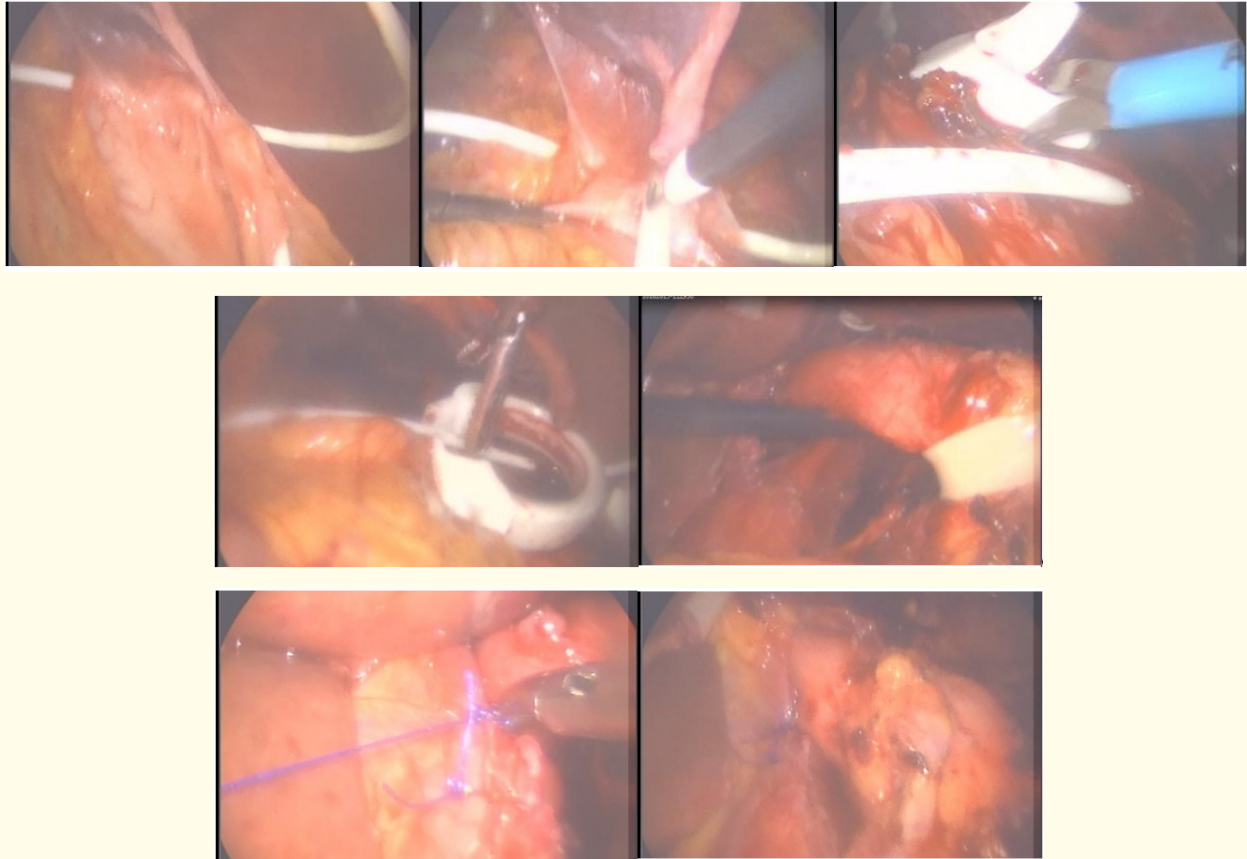


Figure 2: Laparoscopic gastric band removal and adhesiolysis.

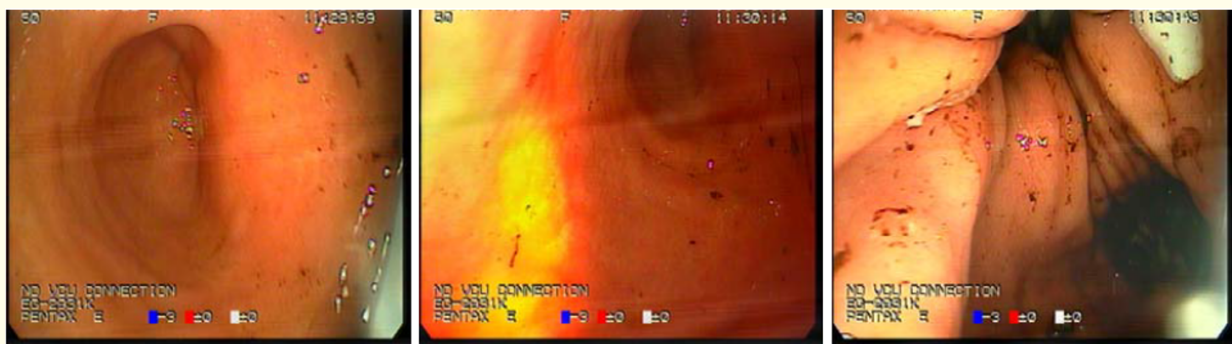


Figure 3: Transoperative upper endoscopy.

Discussion

The adjustable gastric band can present intraoperative complications. Complications in the early postoperative period occur within the first month, such as port infection. While late complications are more common (6 to 25% of cases); example of these complications are band slippage, gastric reservoir dilation, port dysfunction, gastroesophageal reflux disease, erosion of the band [1,12,13]; and have similar clinical presentations, nausea, postprandial vomiting, early satiety, dysphagia, abdominal pain, reflux, weight loss and fever [3].

We hypothesized that episodes of postprandial vomiting secondary to band insufflation in this patient, opened the diaphragmatic crura previously closed in 2013, leading a paraesophageal hernia and worsening gastroesophageal reflux [10,16].

GERD is reported in a third of the postoperative patients of the gastric band [1,3,8,14-16]. According to Shayani's study, gastroesophageal reflux and esophagitis occurred in 30% of patients with AGB. It has been reported that patients with hiatal hernia prior to the placement of the gastric band had greater symptoms of gastroesophageal reflux, for this reason it is recommended to repair the diaphragmatic crura [2,5,16].

The indications for gastric band removal include intolerance to the gastric band, acute or chronic slippage, band erosion and band infection [7]. In very symptomatic patients an immediate resolution is preferred, by endoscopy or surgery (repair, relocation or removal of gastric band) [5]. After gastric band removal a minority of patients are able to maintain their weight loss. Aarts suggest to perform an additional bariatric procedure (laparoscopic sleeve gastrectomy, laparoscopic Roux-en Y gastric bypass, redo laparoscopic adjustable gastric band) after removing the gastric band if it is technically feasible and safe [7,17,18].

Conclusion

In spite that the laparoscopic adjustable gastric band is the safest bariatric procedure there are multiple complications at the short and long term, that make this procedure a temporal treatment of obesity.

Despite several references to gastroesophageal reflux as a late complication of bariatric surgery including the adjustable gastric band, the pathophysiology of this complication is still unknown.

Patients undergoing bariatric procedure with sliding hiatal hernia should also treat the hiatal defect to reduce the risk of gastroesophageal complication.

The multidisciplinary follow up of the patient after gastric band removal is important to prevent weight gain and to plan additional bariatric procedure if it is necessary.

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