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# Conversion of laparoscopic sleeve gastrectomy into gastric bypass due to gastroesophageal reflux disease

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## Abstract:

Laparoscopic sleeve gastrectomy (LSG) is one of the most performed bariatric techniques today. It obtains important results in weight loss and resolution of comorbidities associated with obesity. However, it has been related to a higher postoperative incidence of gastroesophageal reflux disease (GERD)(1). It is important to rule out the existence of GERD in the preoperative study to select the appropriate surgical technique, as well as during follow-up after LSG. The development of GERD which doesn´t response to medical treatment may be an indication for conversion bariatric surgery (1). We present the case of a patient operated of LSG who required conversion surgery to Roux-en-Y gastric bypass (RYGB) due to GERD.

Keywords:

- Sleeve gastrectomy
- Gastric bypass
- Gerd
- Laparoscopic
- Hiatal hernia

## Introduction

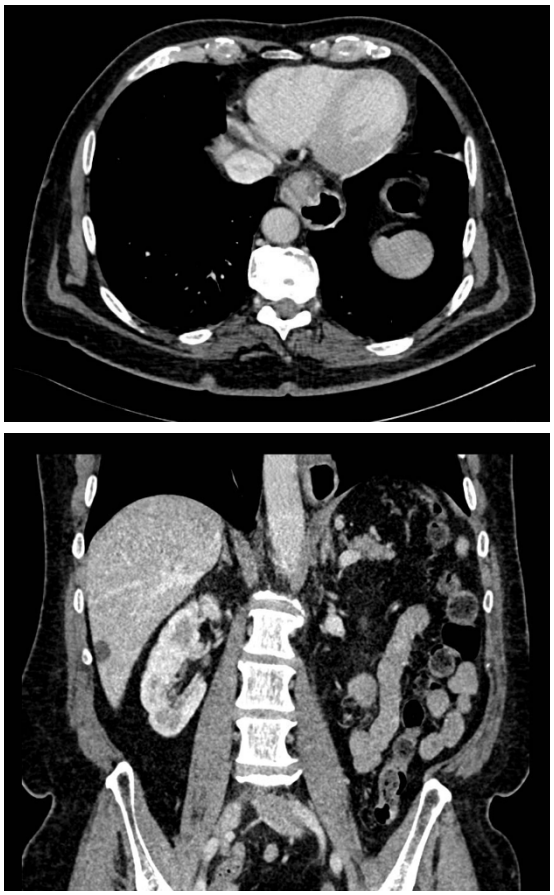
The objective of this review is to analyze sleeve gastrectomy and its association with postoperative gastroesophageal reflux.

We will also describe the importance of choosing the surgical technique to prevent this complication.

We analyze which is the most recommended technique to use in this case. We present a case of conversion to RYGB due to gastroesophageal reflux disease and its mid-term results.

## Case Report

A 65-year-old male diagnosed with Grade III Obesity (BMI 41.4), with a history of OSAS, hypertension, and dyslipidemia. He underwent LSG, with no incidents or complications, in 2011. After 4 years of follow-up, he begins with symptoms compatible with GERD. An upper gastrointestinal endoscopy was studied that revealed a Los Angeles grade D esophagitis, and a thoraco-abdominal CT scan that identified a slipped hiatal hernia (figures 1 and 2). After the diagnosis of esophagitis secondary to GERD that did not improve with intensive medical treatment, laparoscopic revision surgery was decided.



*Figures 1 and 2. Abdominal CT 09/21: sliding hiatal hernia.*

## Results

Conversion from LSG to BPG is performed with loose silk stitches on pillars. The postoperative period was uneventful and he was discharged on the third day with adequate oral tolerance.

At 1 and 6 months of follow-up, the patient remains asymptomatic and does not require proton pump inhibitors. In the barium transit, the disappearance of the hiatal hernia was observed and in the 24h phmetry, no pathological reflux was found.

## Discussion

Short-term studies often fail to detect de novo GERD or even show an improvement in GERD, probably due to the large initial weight loss caused by a decrease in intra-abdominal pressure (2).

Studies with longer follow-up have shown increased reflux after SG possibly due to weight regain or the development of de novo hiatal hernias caused by pressure within the gastric sleeve over years (2).

There are other mechanical causes such as torsion, gastrectomy stenosis and, on the other hand, there are also anatomical changes that may be responsible for the appearance of GER: changes in the manometric parameters of the LES due to a decrease in its pressure; decreased distensibility of the gastric reservoir, dismantling of the anti-reflux mechanism in Hiss angle dissection, and funnel-shaped gastrectomy (2).

An incidence of "de novo" reflux after SG is calculated between 10% and 20%. Between 2% and 12% of patients operated on for SG will require a second intervention due to severe GER. (1)

It is common for morbidly obese patients to present esophagogastric pathology such as gastritis or gastroesophageal reflux; that it is not always symptomatic and that it can affect the evolution after the intervention (3). Therefore, the role of endoscopy and barium transit in the preoperative period of bariatric surgery is somewhat controversial. Some clinical guidelines of scientific societies (European Association for Endoscopic Surgery; ASGE) do not establish with a strong level of evidence the performance of endoscopy and/or contrast radiological study in the preoperative management of LSG. There is no such controversy with bypass techniques, such as RYGB or DBP, where it is considered essential to rule out disease in the region of the digestive tract that will be excluded after surgery (4).

## Conclusions

The application of an adequate surgical technique is probably the most important modifiable factor in the prevention of this complication (3). RYGB is currently the most appropriate and widely accepted revisional surgery technique to treat patients with severe GERD after sleeve gastrectomy (3). It is advisable to correct the associated hiatal hernia, although it sometimes involves the most complex technical aspect of the operation. It is unknown whether preventive hiatoplasty would reduce the incidence of reinterventions. Fortunately, most cases of SG by laparoscopy with long-term follow-up show that reflux symptoms are transient and improve after one year (2).

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