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Esophageal adenocarcinoma five years after laparoscopic sleeve gastrectomy. A case report

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ABSTRACT

INTRODUCTION: Laparoscopic sleeve gastrectomy has become the most popular bariatric procedure worldwide. However, postoperative gastroesophageal reflux disease appearance is a matter of concern. Only two cases of esophageal adenocarcinoma after gastric sleeve have been described, none of them with preoperative endoscopic evaluation.
PRESENTATION OF CASE: We report a case of a 48-year-old male with morbid obesity and normal preoperative endoscopy and esophagram who underwent a laparoscopic sleeve gastrectomy and developed an esophageal adenocarcinoma five years later.
DISCUSSION: Despite promising results in terms of weight loss and resolution of comorbidities, the onset or worsening of gastroesophageal reflux and its related complications, such as Barrett's esophagus or esophageal adenocarcinoma, is a matter of concern and need further study.
CONCLUSION: We present a case of an esophageal adenocarcinoma five years after a laparoscopic sleeve gastrectomy for morbid obesity. There is need to better determine the relationship between sleeve gastrectomy and gastroesophageal reflux disease in order to prevent its related complications, such as esophageal adenocarcinoma.

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1. Introduction

Obesity is one of the leading health problems worldwide and has already reached epidemic proportions. Obese patients are at increased risk of developing comorbidities such as gastroesophageal reflux disease (GERD), with a potential increase in reflux symptoms, esophagitis and esophageal adenocarcinoma [1].

Bariatric surgery is the most effective therapy available for morbid obesity, and provides long-term weigth loss as well as improvement or complete resolution of comorbidities [2].

Gastric bypass is considered the gold standard surgery for the treatment of refractary morbid obesity, due to its very good long terms results, with mean loses of 50–70% of excess bodyweight and a sound control of obesity related diseases [3].

During the last decade, Laparoscopic Sleeve Gastrectomy (LSG) has become more and more popular among surgeons and patients, and it is nowadays, perhaps, the preferred bariatric technique in many countries. Its results are also excellent in terms of weight loss and improvement of comorbidities, with the advantage of being a simpler operation from the technical standpoint.

However, there is one shortcoming of LSG in the long-term follow-up and this is the onset of de novo GERD. Available data about the relationship between sleeve gastrectomy and gastroesophageal reflux disease is both limited and contradictory. Several series have demonstrated significant increase on GERD and hiatal hernia post sleeve, and there is also an increase of revisional surgeries associated with this refractory reflux [4–6]. Many surgeons ponder LSG as a good operation even in GERD patients, and the rationale for this is that sleeve improves symptoms and reduces reflux in obese patients with preexisting GERD, that there is low incidence of Barrett's esophagus reported in obese patients, and that there are only a few reports of esophageal adenocarcinoma after sleeve gastrectomy published in the literature [7,8].

Now, fanning the flames of this controversy, we report a case of an esophageal adenocarcinoma five years after LSG, in a patient with preoperative normal studies. This work has been reported following the SCARE criteria [9].

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Fig. 1. Endoscopic image of the tumor in the lower esophagus.

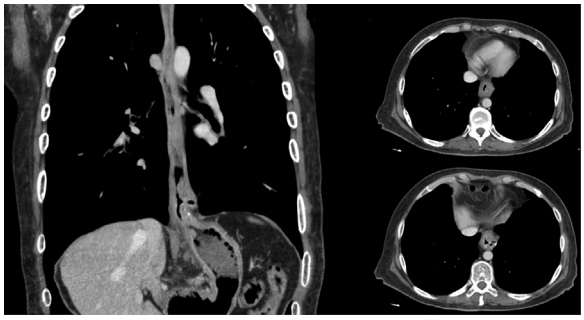

Fig. 2. Pneumo-computed tomography showing thickening of the esophageal wall and regional lymph nodes.

2. Presentation of case

48-Year-old man that underwent a laparoscopic sleeve gastrectomy for morbid obesity. Preoperative BMI was 48,5 kg/m^2 and he had a history of hypertension, dyslipidemia, insulin resistance and obstructive sleep apnea. He also had a 30 pack-year history of smoking and no previous GERD symptoms.

Our rutine preoperative evaluation included an upper gastrointestinal series and esophagogastroduodenoscopy (EGD), which showed absence of reflux or hiatal hernia, no esophagitis or Barrettís esophagus. Helicobacter pylori was negative.

The surgery was uneventful and the patient had an excellent recovery. On post-operative day one a gastrograffin swallow study ruled out any leak or stricture.

Subsequent follow-up occurred at one, three, six, nine and twelve months postoperatively. At one year he had achieved an excess weight loss of 70%. On the following visit, 15 months after the operation, he complained of new onset of typical GERD symptoms. He was put on proton pump inhibitors (PPI) and a new EGD and barium swallow were requested, but he did not do the studies and was then lost to follow up.

He returned 4 years later (fifth postoperative year) referring dysphagia to solids and a 10 kg weight loss. A new endoscopy revealed a solid mass on the lower third of the esophagus (Fig. 1). Histopathological evaluation demonstrated a moderately differentiated adenocarcinoma of the esophagus. Staging was completed with a multislice computed tomography scan, using a distention technique with carbon dioxide, which confirmed the presence of a large tumor in the lower esophagus with evidence of regional lymph node involvement (Fig. 2). He started neoadjuvant chemoradiotherapy, with five courses of carboplatin and paclitaxel and 41.4 Gy of concomitant radiotherapy. During re-staging prior to surgery, a Positron Emission Tomography/Computed Tomography (PET/CT) showed two metabolically active liver images with Standardized Uptake Values (SUV) of 5.8 and 4.1, compatible with metastatic disease (Fig. 3). After multidisciplinary consultation, further chemotherapy was decided.

3. Discussion

Sleeve gastrectomy has become the most common bariatric procedure in the United States in 2015, accounting for 53.8% of the 196,000 surgeries performed, followed by gastric bypass (23,1%) and gastric banding (5,7%) [10]. The success and popularity of this technique is supported by the excellent short and medium term results in relation to weigth loss and resolution of comorbidities, with a very low rate of complications, without promoting changes in intestinal anatomy and nutrient absortion.

However, there is big concern about the impact of LSG on the physiology of the gastroesophageal junction and the antireflux barrier. Several mechanisms of impairment of cardial continence are attributed to sleeve, like lost of angle of His' flap valve, reduced lower esophageal sphincter (LES) pressure, cardial dilatation, damage of sling fibers, alteration of esophageal outflow secondary to increased intragastric pressure, etc.

The data published is confounding and inconsistent.

Some studies conclude that LSG improves the antireflux mechanism, and hence consider LSG a good option even in obese patients with GERD.

Rebecchi et al. analized a cohort of 71 morbid obese patients with LSG who were studied with GERD questionnaire, endoscopy, manometry and ph monitoring, before and two years after surgery. In those patients with GERD symptoms and pathologic ph monitoring (n = 28), these authors found improvement in both symptoms and ph monitoring. In the group without preoperative reflux, only 5% developed de novo GERD [7].

Chiu et al. published a systematic review of the effect of LSG on GERD and found that four publicatons showed an increase, while seven showed a decrease in GERD symptoms after LSG. But the quality of these studies did not allow to reach a consensus: no randomized controlled trials analized GERD after sleeve as a primary outcome, and there was lack of standarization in terms of surgical technique, severity of symptoms, and follow-up (follow-up was short in most of the studies) [11].

Likewise, several reports described the development or even worsening of GERD after LSG.

In a prospective randomized trial that compared LSG with gastric banding, Himpens et al. found development of de novo reflux symptoms in 21.5% of the LSG cohort at one-year follow-up [12].

DuPree et al. analyzed 4832 patients submitted for LSG from the Bariatric Outcomes Longitudinal Database (BOLD). They found that 84.1% of the LSG patients with preexisting GERD continued to have GERD symptoms after LSG, while only 15.9% showed GERD resolution; and 8.6% of the LSG patients with no previous GERD developed symptoms postoperatively [13].

Tai et al. found significant increase in GERD symptoms (12.1% vs. 47%), erosive esophagitis (16.7% vs 66.7%) and hiatal hernia (6.1% vs 27.3%) one year after LSG [4].

Braghetto et al. analized 231 patients without reflux symptoms, esophagitis or Barrett, who underwent a LSG. In the follow-up, GERD symptoms were found in 23.2%, erosive esophagitis in 15.5%, and Barrett's esophagus (intestinal metaplasia) in 1.2% [5].

The available data is not conclusive so as to consider GERD as a contraindication for LSG, but is robust enough to claim that gastric

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