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Case Report Open Access

Medium-Gastric Stenosis Post Sleeve Gastrectomy: A Case Report Endoscopic Dilatation for Stenosis after Sleeve Gastrectomy

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Abstract

We report the case of a 39-year-old male, BMI 39.2 kg/m^2 and 57.6% excess weight (EW) submitted to laparoscopic sleeve gastrectomy (LSG). One month after surgery the patient returned in poor general condition and food vomiting associated with abdominal pain. Gastrografin swallow study showed the presence of a medium-gastric stenosis of about 2 cm long. Endoscopy confirmed the presence of stenosis and during the same examination the dilatation was carried out by using a balloon. The treatment of the stenosis depends on its length, which must be measured with a gastrografin swallow and confirmed by the endoscopy.

Keywords: Sleeve gastrectomy; Medium stenosis; Complication; Endoscopic dilatation; Obesity surgery

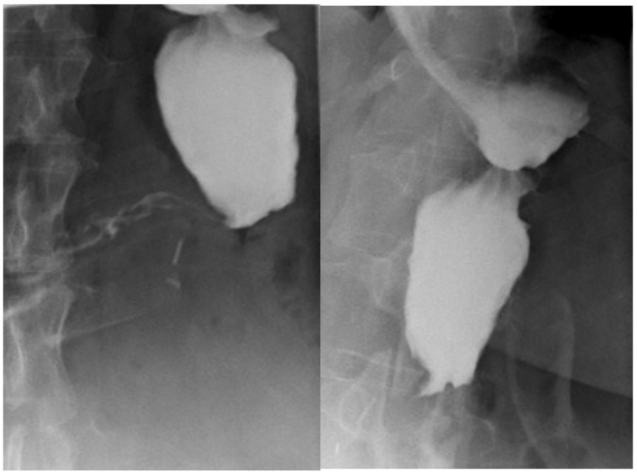
Introduction

Sleeve gastrectomy is a widespread operation for the treatment of morbid obesity (BIB). The first Laparoscopic Sleeve Gastrectomy (SLG) was performed by Gagner in 1999. Initially this procedure was reserved to patients with severe obesity (BMI> 50) as the first step to allow an initial weight loss and make them suitable to a second malabsorptive operation (duodenal-switch, gastric bypass), to reduce postoperative morbidity and mortality. Currently this procedure is proposed as a definitive operation, since it is associated to lower morbidity and mortality (1-5) compared with more complex procedures such as bypass and biliopancreatic diversion, with similar results in terms of weight loss and resolution of comorbidities (BIB). The stenosis of the remaining stomach has been reported as a complication associated with this procedure, and it occurs with an incidence of 0.7 to 4% (6,7); in literature, detailed data about this complication are lacking. Correct management of gastric stenosis after sleeve-gastrectomy is debated. Authors have suggested different approaches according to the stenosis lenght and site. We report the case of a patient operated for SLG who showed, one month after surgery, a medium-gastric stenosis treated with endoscopic dilatation.

Case Report

From January 2008 to May 2014, 201 patients (70 males and 131 females), mean age 46 ± years (range: 22-66), mean body mass index (BMI) 44.09 ± 1.2 kg/m^2 (range 34.7-65.5) were submitted to LSG at the Bariatric Surgery operative unit of the general hospital "Le Scotte" in Siena, Italy. Here we report the case of a 39-year-old male, BMI 39.2 kg/m^2 and 57.6% excess weight (EW). The patient had several comorbidities including medium grade hypertension, carbohydrate intolerance associated with hyperinsulinism and hypertriglyceridemia. Our surgical technique involves pneumoperitoneum by open-technique, in the midline about 5 cm above the umbilicus, where the first trocar is positioned. Four other trocars are then introduced under direct vision about 10 and 15 cm bilaterally to the first trocar. We proceed with the skeletonization of the great gastric curvature from 5-8 cm from the pylorus to the angle of His, with the view of the left diaphragmatic pillar. The section of the stomach occurs in the longitudinal direction on the guide of a 36-Fr calibrating bougie with linear stapler with three rows of dots (Echelon Endopath, Ethicon Endo-Surgery; Johnson & Johnson, Cincinnati, OH, USA). We perform then a reinforcement of the staple line with intro flecting manual laparoscopic running suture. Nasogastric tube is positioned at the end of the procedure, and a methylene blue die test is performed to assess the integrity of the staple-line. The resected stomach is extracted through the first trocar in a retrieval bag, and haemostasis at the trocar sites is checked. Abdominal drainage is positioned at the end of the procedure. Nasogastric tube is removed in the first post-operative day. On the third postoperative day we perform an upper gastrointestinal swallow with gastrografin followed by the beginning of feeding liquid. Patient was discharged with the program of outpatient controls. In the clinical case here reported, gastrografin swallow on the third postoperative day didn't show any particular abnormalities and the patient was discharged after a regular course. One month after surgery the patient returned in poor general condition complaining food vomiting and abdominal pain. The patient was submitted to an urgent gastrografin swallow, which showed the presence of a medium-gastric stenosis (Figures 1 and 2) of about 2 cm long. Endoscopy confirmed the presence severe stenosis. A single session of endoscopic dilatation was carried out. Progressive dilation of diameter >18 mm was performed (Figure 3). A nasogastric tube was positioned and an enteral nutrition conducted for 5 days. In the 6th post-procedural day patient received a liquid diet to gradually evolve to a solid diet in about a month. The gastrografin study performed after dilation showed a regular transit through the gastric tubule without signs of shrinkage (Figure 4). After discharge, a personalized diet has been provided to

the patient. At 48th month patient had no evidence of clinical recurrence. His BMI is 28 kg/m^2 and 20.1% excess weight (EW).



Figures 1 and 2: Medium gastric stenosis after SGL at one month after surgery.

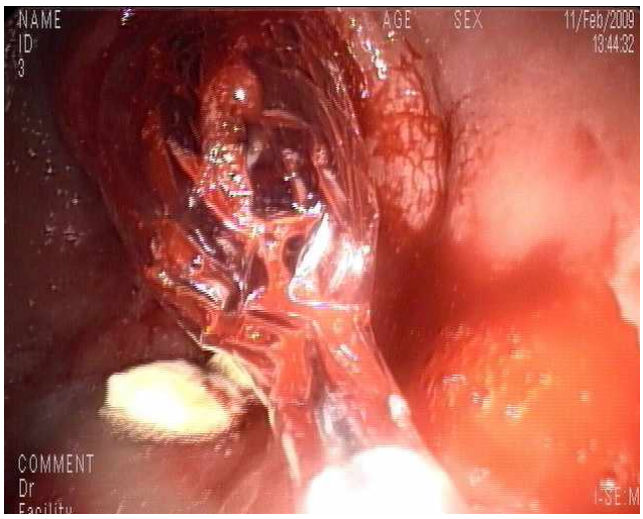


Figure 3: Endoscopic view of balloon dilation.

Discussion

Laparoscopic sleeve gastrectomy has become an established primary bariatric procedure. It is a very attractive procedure from a surgical point of view, due to its relative technical simplicity, short learning curve and low postoperative morbidity and mortality [1-5]. One of the possible complications is stenosis [6-8]. Stenosis can be caused by an incorrect positioning of the probe introduced orally, which is used as a guide for the section of the stomach trough a linear stapler. In fact it is necessary to push the probe beyond the angulus of the stomach to avoid excessive shrinkage at this level.

Figure 4: Radiological vision after endoscopic dilation.

In particular, the probe must be stopped at 4-5 cm from the pylorus, where begins the longitudinal section of the stomach and the dissociation of the stomach by the epiploon. In this way the stapler can be applied without an excessive angle towards the lesser gastric curve in order to avoid a too narrow passage. Moreover, the size of the probe plays a crucial role in deciding to get the right restriction [9]. According to some authors, another possible cause of stenosis is the over lock of the suture line [10]. This procedure is usually performed to prevent bleeding from the suture line and to minimize leakage complications [11]. An incorrect execution of oversewing could be the cause the stenosis of the stomach when it involves an asymmetry of the suture line. In our experience we have always reinforced the section line with a continuous suture for homeostasis and for a correct sealing; it also seems that the reinforcement may reduce the re-expansion of the remnant stomach with time. The treatment of the stenosis depends on its length, which must be measured with an Rx digestive with gastrografin and confirmed by the endoscopy. Short stenosis can be treated with endoscopic balloon dilation in single or multiple sessions [9]. When the stenosis is longer, this type of approach is usually insufficient and in this case the treatment of choice is the seromyotomy, a rather complex but effective procedure which is at risk of complications [12]. It involves the cutting of the tunica serosa and muscularis propria until the submucosa about 1 cm from the stenosis, as in treatment of esophageal achalasia. The main risk of this procedure is gastric perforation, which should be promptly recognized and treated by direct suture with absorbable material and omental patch. The treatment of a postoperative fistula is extremely hard and can be resolved with endoscopic placement of a stent [13], and if necessary, with the subsequent placement of a prosthesis until the complete closure of the fistula. In unsuccessful cases, an intestinal Roux-en-y can be placed as a "patch" [14], but in more complicated cases total gastrectomy is the only chance of cure [15]. Recently, some

authors have suggested laparoscopic median gastrectomy with resection of the stenotic segment [16].

In conclusion, gastric stenosis after SLG is a rare but serious complication which requires early recognition, specific treatment and sometimes complex procedures. The useful management of this complication remains debated and only few data are reported in literature. We believe that a multi disciplinar approach is essential for a preliminary study of the site and length of stenosis and obviously for a correct treatment. In terms of surgical technique, the application of the linear stapler side by side to the probe, in order to package an uniform "sleeve" without areas of constriction or dilation, which are the cause of “hourglass” stomach and of “batraciformi” pockets, is needed. To avoid this occurrences we believe it is useful to follow some technical rules: begin with the gastroepiploic dissection at 5-8 cm from the pylorus; if it is a definitive surgery, use an orogastric probe of 36 Fr, or 60 Fr if it is the first time of a duodenal switch; avoid excessive traction on the stomach in stapler positioning.

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