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The importance of patient selection in bariatric surgery: One not fit for all. Case report of a preventable double severe complication after Laparoscopic gastric banding positioning

Francesco Saverio Lucido^{a,*}, Giuseppe Scognamiglio^b, Alessandro Salvucci^b, Claudio Gambardella^{a,c}, Luigi Bruscianno^a, Gianmattia del Genio^a, Francesco Pizza^d, Domenico Parmeggiani^a, Simona Parisi^a, Mariachiara Lanza Volpe^a

^a Division of General, Mini-invasive and Obesity Surgery, Master of Coloproctology and Master of Pelvi-Perineal Rehabilitation, University of Study of Campania “Luigi Vanvitelli”, Naples, Italy

^b General and Bariatric Surgery Unit, Camilliani Hospital, Casoria, Italy

^c Department of Cardiothoracic Sciences, University of Campania “Luigi Vanvitelli”, School of Medicine, Naples, Italy

^d Division of Surgery, Hospital “A. Rizzoli”, Lacco Ameno, Naples, Italy

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ABSTRACT

INTRODUCTION: Laparoscopic adjustable gastric banding (LAGB) is a minimal invasive, effective and reversible procedure, even if it is burdened by life threatening complications.

PRESENTATION OF THE CASE: A 39 years-old female patient was admitted to our emergency department for abdominal pain and ileus and underwent an explorative laparoscopy. The LAGB was wrapped around the proximal portion of the stomach determining the erosion and ischemia of the great curvature region. It was removed and a large gastric resection of the great curvature was performed. Subsequently, a gastric leak with pleural abscess occurred with the beginning of the oral diet. It was successfully treated with fasting, intravenous antibiotics and a thoracic tube.

DISCUSSION: LAGB is a restrictive procedure that compartmentalizes the upper stomach by placing a tight adjustable band around it. However severe and multiple complications can also occur. Slippage is one of the most frequent and dangerous complication. Partial gastric resection (comparable to sleeve gastrectomy) or total/subtotal gastrectomy on the limit of the scarring tissue is use requested in the latter case, with a high risk of postoperative leak. A strict postoperative follow-up is mandatory in order to early recognize any severe complications.

CONCLUSION: Strict follow-up in this special subset of patients, the bariatric ones, is mandatory in order to early identify and correct any postoperative complications, avoiding severe sequelae.

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1. Introduction

Obesity is nowadays considered a worldwide epidemic condition and bariatric surgery is one of the most effective available treatment, in addition to lifestyle changes [1]. Before 2010 laparoscopic adjustable gastric banding (LAGB) was the most popular bariatric procedure in Europe, United States and Australia thanks to its acknowledged strengths: minimal invasiveness, effectiveness and reversibility [2–5]. Furthermore, regulation of the stoma size makes LAGB a valid tool according to patient's features. Several papers reported an impressive improvement of the anthropometric outcomes (i.e. weight, Body mass index and percentage of excess

weight loss) in patients underwent LAGB [6]. Co-morbidities as hypertension, type II diabetes mellitus and dyslipidemia have been completely solved after weight loss provided by LAGB [6].

Nevertheless, its adoption is widely decreased for the occurrence of several complications, such as gastric prolapse, band erosion and slippage, esophageal and gastric pouch dilatation, port malfunction, gastroesophageal reflux disease [7–9].

We reported the case of a band slippage with gastric dilatation pouch and a secondary gastric leak with pleural abscess, occurred three years after LAGB placement. The work has been reported in line with the SCARE and PROCESS criteria [10,11].

2. Case presentation

A 39 years-old female patient with body mass index (BMI) of 40 kg/m² underwent LAGB procedure in 2006 for morbid obesity at the General and Bariatric Surgery Unit of Camilliani Hospi-

* Corresponding author at: Division of General, Mininvasive and Obesity Surgery, University of Study of Campania “Luigi Vanvitelli”, via Luigi Pansini n° 5, Naples, 80131, Italy.

E-mail address: francescosaverio.lucido@unicampania.it (F.S. Lucido).



Fig. 1. Gastrografin swallow X-ray of the upper digestive tract later surgery.

tal (Casoria, Naples, Italy). She no presented other co-morbidities or allergies but was regular smoker (20 cigarettes a day for 25 years). Her familiar medical history included morbid obesity. The LAGB model used was not reported in the medical record. After one month from surgery, she did not attend any scheduled outpatient control. The patient was admitted two years after LAGB placement to our emergency department for abdominal pain and ileus. The patients revealed that from 6 months she suffered of frequent abdominal discomfort, but she never referred to our center. Abdominal examination revealed generalized abdominal distension and signs of peritonitis. On physical examination, the patient was hypotensive, tachycardic and hyper-pyretic. A septic shock was diagnosed. Abdominal computed tomography (CT) was performed and revealed a gastric band slippage with large dilation of gastric pouch. A great part of the stomach was herniated proximally through the band. The patient underwent an explorative laparoscopy.

The LAGB was wrapped around the proximal portion of the stomach and the pouch eroded a large area on the great curvature, with necrotic degeneration of the stomach wall.

LAGB was removed and a large gastric resection of the great curvature (similar to sleeve gastrectomy) was laparoscopically performed. An abdominal drain was placed. The patient was admitted to intensive care for postoperative support. Seven days after surgery a gastrografin swallow X-ray of the upper digestive tract was performed (Fig. 1). The control was negative for leak and a regular oral diet was started. Nevertheless, at the assumption of oral diet, she presented fever, abdominal pain and presence of purulent material in the abdominal drain. Upper gastrointestinal x-ray and abdomen CT scan with gastrografin revealed gastric fistula on the gastric fundus. It was treated with fasting and intravenous antibiotics provided for twenty days. A further control with thorax and abdominal CT scans showed a small gastric leak with pleural abscess (Fig. 2). A thoracic drainage was then placed. Ten days later, a CT proved the leak healing and the patient was discharged two days after regular diet assumption and relief of any symptoms. Follow up after 12 months was uneventful, BMI was 26 kg/m² and the percentage of excess weight loss (%EWL) was 41%.

3. Discussion

LAGB has been considered a limited invasive bariatric procedure, largely appreciated by patients for the rapid anthropometric improvement, the minimal invasive technique and short hospitalization. It consists on a restrictive procedure that compartmentalizes the upper stomach by placing a tight adjustable band around it. However, large series reported poor long – term outcomes associated to severe and multiple complications. Slippage is one of the most frequent complication, occurring in about 24% of patients underwent LAGB [12].

Patient may complain vomiting, dysphagia and reflux. Severe abdominal pain should be carefully investigated to exclude a gastric ischemia. Diagnosis of LAGB Slippage is generally performed during the first three years of follow-up [13]. CT scan is sensitive in its identification and can be useful in its diagnosis [14]. The band must be removed for the risk of more severe complications (i.e. perforation, peritonitis, esophageal lesion). According to literature, the most important risk factor for slippage is the high pressure applied to the gastric wall [15]. Slippage generally causes a symmetric enlargement of the gastric pouch. The continuous pressure exerted by the band to the distended prolapsed stomach reduces the blood support to the gastric wall, causing a degenerative necrosis and perforation [16]. This life threatening situation requires partial gastric resection (comparable to sleeve gastrectomy) or total/subtotal gastrectomy [17,18].

In this case no follow up was performed after the LAGB placement for the poor patient's 'compliance'; she referred directly to our urgency department when the slippage determined a voluminous gastric pouch enlargement and an unbearable discomfort. The BMI was 27 kg/m². It is worth to comment that bariatric patients are a frail subset of patients, who need special and continuative care. A strict postoperative follow-up is mandatory in order to early recognize any complications avoiding severe and life-threatening sequelae. A careful preoperative psychiatric counseling is also of utmost importance, allowing to select motivated patients who are able to follow the physicians control and recommendations, leading to a safe postoperative course [19]. In the



Fig. 2. Abdominal CT with gastric leak with pleural abscess.

presented case, the patient revealed the frequent and worsening onset of abdominal pain and discomfort. Probably, if the patient has attended the outpatient visit alarming on her symptoms, a precocious diagnosis would be performed, preventing the double severe complications. We performed a wedge resection of the great gastric curvature, stapling on the limit of the scarring tissue, with a high risk of postoperative leak. The main concern, in fact, remains the choice to staple the stomach through a suffering tissue or realize a total gastrectomy, often determining biliary reflux and dumping syndrome. The wedge resection, conversely, could allow to preserve a tailored gastric pouch limiting postoperative nutritional defects and shortening the hospitalization. In our case a further complication occurred, the sutural leak that hesitated in a pleural abscess. Therefore, a thoracic tube was positioned and fasting, and an intravenous antimicrobial therapy were administered. After the successful management of the postoperative complication, follow-up at 12 months was uneventful and BMI resulted 26 kg/m² and the percentage of excess weight loss (%EWL) was 41%.

4. Conclusion

LGB was one of the most common bariatric procedures performed worldwide for its effectiveness and reversibility. Nevertheless, it is affected by rare but life-threatening complications. A strict postoperative follow-up is mandatory to early diagnose and treat severe and minor complications. The reported case showed as a band slippage with consequent gastric necrosis necessitating a gastric resection, hesitated in a further gastric leak causing a pleural abscess: a double life-threatening complications easy preventable in case of strict follow-up. Therefore, in such special subset of patients, the bariatric ones, is mandatory a careful preoperative patients' selection in order to address each subject to a specific suitable bariatric procedure, avoiding worrying postoperative events.

Declaration of Competing Interest

The authors report no declarations of interest.

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Ethical approval

N/A.

Consent

Written informed consent was obtained from the patient for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

Author contribution

LFS: Participated substantially in conception, design and execution of the study, and in the drafting and editing of the manuscript.

SG: Participated substantially in conception, design and execution of the study, and in the drafting and editing of the manuscript.

SA: Participated substantially in conception, design and execution of the study, and in the drafting and editing of the manuscript.

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