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Original article

Laparoscopic sleeve gastrectomy after failed gastric banding: is it really effective? Six years of follow-up

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Abstract

Background: Laparoscopic sleeve gastrectomy (LSG) has become a valuable surgical option to rescue laparoscopic adjustable gastric banding (LAGB) failures.

Objectives: The aim of this study was to determine whether conversion to LSG after failed LAGB (CLSG) is a well-tolerated and effective rescue procedure compared with primary LSG (PLSG) in the long term.

Setting: University hospital, France.

Methods: A retrospective review of data concerning consecutive patients receiving a LSG between February 2008 and December 2014 was conducted. Mortality, postoperative complications, and weight loss outcomes were analyzed.

Results: Of 701 LSG, 601 (85.7%) were PLSG and 100 (14.3%) were CLSG. The mortality rate was 0%. Overall morbidity was comparable between the primary and conversion group (10% versus 6%, $P = .27$). The mean percentage of excess weight loss at 3, 36, and 72 months was 34.9%, 72.1%, and 57.2% after PLSG and 22.6%, 51.2% and 29.8% after CLSG ($P < .05$). The failure rate (mean percentage of excess weight loss <50%) was higher in the CLSG group during the first 5 postoperative years ($P < .001$) with more than two thirds of the CLSG considered as having failed at 60 months. Patients who underwent band ablation as a result of insufficient weight loss or weight regain presented the worst results after conversion to LSG.

Conclusion: In this study, the conversion of failed LAGB to LSG in 2 steps indicated a safety profile comparable to that of primary LSG but was significantly less effective from the early postoperative course (3 mo) up to 6 years postoperatively. CLSG may not be the best option because a third operation may be needed as a result of insufficient weight loss. (Surg Obes Relat Dis 2017;▮:00–00.) © 2017 American Society for Metabolic and Bariatric Surgery. All rights reserved.

Keywords: Gastric banding failure; Sleeve gastrectomy; Long-term results; Rescue procedure; 2-step procedure

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Laparoscopic adjustable gastric banding (LAGB) has been the most commonly performed bariatric procedure in France for many years [1,2]. Its popularity is due to the relative simplicity of the procedure, morbidity and mortality rate close to zero, and good early results in terms of weight loss [3,4]. However, several studies with long-term follow-up have reported poor weight loss outcomes and a high failure rate requiring band removal [5–7]. Different surgical options exist to deal with the failure of a gastric banding [8]. Band repositioning or rebanding do not seem to be convincing rescue procedures [9,10]. Currently, conversion to laparoscopic Roux-en-Y gastric bypass (LRYGB) is considered the procedure of choice that results in improved weight loss with acceptable morbidity [11,12]. Over the last decade, because of its widespread use, laparoscopic sleeve gastrectomy (LSG) has become another valid surgical option to salvage a gastric banding failure [13–16]. Although a number of studies have been published concerning conversion of failed LAGB to LSG, the majority present results a few months after surgery with low participation in follow-up. Long-term data are missing and no information about its real effectiveness is available. The aim of the present study was to analyze our experience with LSG to evaluate whether it is a well-tolerated and effective rescue procedure after failed LAGB and whether it gives comparable results to those of primary LSG during 7 years of follow-up.

Materials and methods

We retrospectively reviewed our prospectively collected data on consecutive morbidly obese patients receiving LSG from February 2008 to December 2014 (n = 701 patients). All operations were performed by 2 senior surgeons (C.B. and C.P.). Of the 701 operations, 601 (85.7%) were primary LSG (PLSG) and 100 (14.3%) were LSG performed as a conversion procedure after failed LAGB (CLSG). All the patients underwent a nutritional, psychological, and behavioral evaluation for at least 6 months before being considered valuable candidates for sleeve gastrectomy. An incorrect alimentary behavior that could have been at the origin of band failure was inspected and treated before the conversion.

For the present study, we included patients who had received CLSG whether the primary band removal was carried out in our hospital or not. Indications for band removal and conversion were insufficient weight loss or weight regain; band-related complications, including slippage, erosion, infection, and pouch dilation; intractable side effects such as dysphagia, vomiting, and gastroesophageal reflux; and psychological band intolerance. According to Reinhold's criteria [17], insufficient weight loss after gastric banding was defined as $<50\%$ excess weight loss (%EWL), in the absence of band dysfunction. Band-related complications were evaluated via a Gastrografin upper gastrointestinal contrast study and, if necessary, by endoscopy.

All data pertaining to each patient, including demographic data, clinical data, indications for revision, and interval between primary procedure and conversion, were collected. The outcome measures included conversion to open surgery, postoperative complications and mortality, hospital stay, and weight loss over time. Postoperative complications were divided into early complications (within the first 30 d after surgery) and late complications (occurring >1 mo after surgery). Weight loss results were expressed as the change in body mass index (BMI), %EWL and percentage of excess BMI loss (%EBL). The %EWL was calculated as follows:

$$[(\text{preoperative weight} - \text{follow-up weight})/ (\text{preoperative weight} - \text{ideal weight}) \times 100],$$

where ideal weight was considered as that equivalent to a BMI of 25 kg/m². The %EBL was calculated as follows:

$$[(\text{preoperative BMI} - \text{follow-up BMI})/\text{excess BMI}] \times 100,$$

where excess BMI was calculated as preoperative BMI − 25. In our study, success after LSG was defined as %EWL $>50\%$ at every follow-up beyond 1 year.

Surgical technique for revisional LSG and postoperative management

All surgical procedures were performed in 2 stages and laparoscopically using the same standardized technique. In the first stage, the band was removed and the gastrogastric nonabsorbable plication suture placed on the anterior aspect of the stomach was taken out to restore the normal anatomy of the stomach. The time between band removal and conversion into LSG (second stage) varied between 2 and 6 months in patients operated in our hospital and between 5 months and 10 years in patients who underwent their band removal in other hospitals. Conversional LSG was performed using a 4-port technique. If present, residual adhesions were dissected and any hiatal hernia was closed using sutures. The greater curvature of the stomach was dissected free using a harmonic scalpel (Ethicon Endosurgery Cincinnati, OH), starting opposite the crow's foot (approximately 6 cm proximal to the pylorus) until the angle of His. LSG was calibrated upon a 36F gastric bougie, pressed along the lesser curvature, and the stomach was transected with sequential firings of linear green and blue staplers (60-mm Echelon, Ethicon Endosurgery, Cincinnati, OH). The staple line was tested using methylene blue dye instilled through a nasogastric tube. A silicon drain was placed alongside the resected line.

To rule out leaks, all patients were checked using a methylene blue test and Gastrografin swallow on postoperative day 2 and, if no leakage was detected, an oral fluid diet was started. The patients were discharged on

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