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Original article

Critical appraisal of salvage banding for weight loss failure after gastric bypass

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Abstract

Background: Placement of an adjustable gastric band (AGB) over the gastric pouch after RYGB failure has had varied results. The aim of this study was to evaluate safety and outcomes of AGB after RYGB failure.

Methods: Twenty-eight patients who underwent laparoscopic placement of an AGB around the gastric pouch as a revisional procedure for inadequate weight loss or recidivism after RYGB between 2008–2011 were identified.

Results: Twenty-four (86%) patients had a dilated gastric pouch and/or stoma. The mean operative and adhesiolysis times were 137.9 ± 52.3 minutes and 83 ± 51 minutes, respectively. History of a previous open RYGB was associated with a longer adhesiolysis time ($P = .03$). Three (11%) major intraoperative and 5 (18%) early postoperative complications occurred. Late complications (all requiring band removal) were observed in 6 (21%) patients and included ineffectiveness (n = 2), dysphagia/esophageal dilation (n = 2), band erosion (n = 1), and peritonitis (n = 1). In all 4 patients with a normal-sized pouch and stoma at the time of band placement, the band was removed. After a mean follow-up of 38.3 ± 14.8 months, the mean body mass index (BMI) change and median excess weight loss (EWL) after salvage banding were –3.6 ± 4.5 kg/m^2 and 12.7%, respectively. In the subset of patients with a dilated pouch/stoma, BMI less than 42 kg/m^2 at the time of band placement was associated with a significantly higher EWL (41.4% ± 37.0%) compared with a baseline BMI >42 kg/m^2 (12.1% ± 7.2%, $P = .03$).

Conclusions: Salvage banding is technically challenging due to dense adhesions, carries significant morbidity, and is associated with only 13% additional EWL. However, this approach may still be an option in carefully selected patients, such as those with previous laparoscopic RYGB who have a dilated pouch and/or stoma and lower BMI. (Surg Obes Relat Dis 2015;11:607–611.)

Keywords: Gastric bypass; Gastric band; Revision; Revisional; Bariatric; Conversion; Weight loss; Pouch; Stoma

Bariatric surgery is the most effective therapy for morbid obesity, a disease associated with significant morbidity and mortality. The primary goals of bariatric surgery are to achieve sustained weight loss, ameliorate obesity-related co-morbidities, improve quality of life, and achieve long-term survival [1–3].

Among the different techniques, Roux-en-Y gastric bypass (RYGB) is currently the most commonly performed bariatric surgical procedure for the treatment of morbid obesity in the United States, with resulting excess weight

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loss (EWL) ranging from 50%–80% [4]. The long-term results after RYGB are promising; however, a subset of patients fails to achieve sufficient weight loss or suffers from recidivism in the long-term [1]. It is estimated that up to 20% of patients fail to sustain weight loss beyond 2 to 3 years after surgery. The exact etiology for RYGB failure is unknown, but lifestyle (eating behavior, physical activity) and anatomic concerns are possible contributors. Potential anatomic causes of therapeutic failure are enlargement of the gastric pouch and dilation of the gastrojejunal anastomosis, both of which can lead to impaired restriction [5].

In an attempt to counteract pouch and anastomotic dilation, some authors have suggested placing an adjustable gastric band (AGB) around the gastric pouch after RYGB failure. In total, approximately 100 patients with failed RYGB treated by salvage banding have been reported with differing results with respect to postoperative weight loss and procedure-related complications [5–10]. The aim of this study was to evaluate the feasibility, safety, and outcomes of salvage AGB after RYGB therapeutic failure.

Methods

Approval for this retrospective study was granted by the Cleveland Clinic Institutional Review Board. All morbidly obese patients with inadequate weight loss or recidivism after RYGB, who underwent salvage laparoscopic AGB placement over the gastric pouch at the Cleveland Clinic between 2008 and 2011, were identified. Revisional surgery after RYGB was considered in the following conditions: persistent morbid obesity based on the 1991 National Institutes of Health criteria (BMI >40 kg/m^2 or BMI >35 kg/m^2 with co-morbidities), less than 50% EWL, or significant weight regain associated with inability to maintain EWL 24 months after RYGB. Laparoscopic placement of AGB using the pars flaccida dissection technique was performed.

Endoscopic and radiologic assessments of the gastric pouch and stoma (gastrojejunostomy) were performed in the preoperative setting. Consistent with earlier reports, a dilated pouch was defined as length >6 cm and width >5 cm [11,12] and an enlarged stoma was defined as diameter of anastomosis >3 cm [13]. As previously reported, the gastric pouch and stoma dimensions were measured using an articulating measuring instrument that was introduced through the working channel of gastroscope [12]. The findings from the upper gastrointestinal contrast studies were obtained from the written radiology reports. Briefly, the pouch was maximally distended with contrast. The pouch was considered dilated when the vertical or horizontal diameter was >2 times the height of adjacent vertebral body [11,14,15]. Notably, there are no valid criteria for abnormal size, driven from a comparative study of good versus poor responders after RYGB, or standardized techniques to measure pouch or stoma size [11].

Data collected for this study included baseline patient demographic characteristics, perioperative parameters, and midterm follow-up outcomes. Patient demographic characteristics included age, sex, height, weight, body mass index (BMI), co-morbidities, and details of previous bariatric procedures. Operative data extracted included operative time, estimated blood loss, and intraoperative complications. Postoperative and follow-up outcomes assessed were length of hospital stay, short-term and medium-term complications, number of band adjustments, BMI at follow-up, and EWL achieved. The EWL was calculated based on an ideal BMI of 25.

Categorical variables were reported as frequencies (%). Continuous variables with normal and nonnormal distributions were reported as mean ± SD and median (interquartile range [IQR]), respectively. Statistical comparisons were performed using the χ^2 and Student's t tests, where applicable. Pearson's correlation coefficient was used to determine the strength of the relationship between 2 continuous variables. All analyses were intention to treat and were performed using SPSS software, version 17.0.

Results

A total of 28 patients underwent salvage banding for RYGB failure at the authors' institution during the 4-year study period. The cohort had a male-to-female ratio of 5:23, a mean age of 47.6 ± 10.3 years, and an average number of 5.0 ± 2.0 co-morbidities at the time of revision.

The primary RYGB was an open procedure in 22 patients (78.6%) and laparoscopic in 6 patients (21.4%). Three patients had another bariatric procedure before their RYGB. The mean BMI at the time of RYGB and at the time of band placement was 55.9 ± 9.9 kg/m^2 and 45.7 ± 8.1 kg/m^2, respectively, which corresponded to a median EWL of 36.1% (IQR, 25.6–42.4) (Table 1). The mean interval between the operations was 8.9 ± 4.8 years. At the time of the revision, 24 (86%) patients had a dilated gastric pouch and/or stoma.

All revisional procedures were started laparoscopically. The mean operative and adhesiolysis times were 137.9 ± 52.3 minutes (>2 hours in 71% of cases) and 83 ± 51 minutes, respectively. History of previous open RYGB was associated with longer adhesiolysis time (96.7 ± 51.7 minutes) compared with laparoscopic gastric bypass (46.2 ± 27.5 minutes, P value $= .03$). The mean estimated blood loss was 125.4 ± 188.6 mL (≥ 100 mL in 43% of cases). Intraoperative complications (all during extensive lysis of adhesions) occurred in 3 patients (11%) and included 1 capsular tear of the spleen, 1 bile leak from the left lobe of the liver, and 1 colonic perforation. The latter case was the only conversion to laparotomy in the series, and the band procedure was aborted due to high contamination risk.

Five early postoperative complications (within the first 90 days after surgery) were observed in 4 (14%) patients,