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SURGERY FOR OBESITY AND RELATED DISEASES

Original article

Management of gastric fold herniation after laparoscopic adjustable gastric banded plication: a single-center experience

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Abstract

Background: Laparoscopic adjustable gastric banded plication (LAGBP) is a novel bariatric procedure, and little is known about its potential complications.

Objectives: Herein, we report on complications of LAGBP and discuss the clinical features and diagnostic and therapeutic strategies in such situations, with emphasis on gastric fold herniation (GFH).

Setting: University Hospital.

Methods: Prospectively collected data of 223 patients who underwent LAGBP for morbid obesity between August 2009 and December 2014 were retrospectively analyzed. Follow-up at 1 year was 75%.

Results: Eight patients (3.5%) required readmission due to major complications, including 1 trocar site hernia, 1 band leak, 1 gastric stenosis, and 5 GFHs. GFHs occurred mostly in the first postoperative month (4/5, 80%) and at the fundus (5/5, 100%); 4 GFHs occurred in the initial 70 patients. Seven laparoscopic reoperations were required for managing GFH. The gastric band was removed in 3 patients (of 5; 60%). Two patients developed residual intra-abdominal abscess and were treated successfully by image-guided drainage. In March 2012, we reversed the order of our surgical techniques for the subsequent 153 patients and performed greater curvature plication first, followed by band placement. Only one GFH occurred after this change in surgical order (1/153 versus 4/70; $P < .05$).

Conclusions: High clinical suspicion assisted by radiological investigations and early surgical intervention is the key for managing GFH after LAGBP. Though GFH complications were rare, we significantly reduced its occurrence by altering the surgical order in LAGBP to plication followed by banding. (Surg Obes Relat Dis ▮▮▮▮;▮:▮▮▮–▮▮▮.)

Keywords: Bariatric surgery; Gastric fold herniation; Laparoscopic adjustable gastric banding; Laparoscopic adjustable gastric banded plication; Laparoscopic greater curvature plication

Obesity is a global epidemic usually associated with significant co-morbidities such as diabetes mellitus, hyperlipidemia, or hypertension [1]. Surgical intervention has been an effective solution for morbid obesity, achieving sustainable weight loss [2]. At present, laparoscopic Roux-en-Y

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gastric bypass, adjustable gastric banding (AGB), and sleeve gastrectomy are widely accepted bariatric procedures for morbid obesity and lead to moderate excess weight loss (EWL) [3–5]. Although Roux-en-Y gastric bypass and sleeve gastrectomy could achieve more EWL than AGB, these 2 procedures have several shortcomings, such as micronutrient deficiency after Roux-en-Y gastric bypass and irreversible anatomy after sleeve gastrectomy [6–8].

By maintaining the gastrointestinal continuity and being a relatively reversible procedure, laparoscopic adjustable gastric banded plication (LAGBP) compensates for the lacunae of current surgical options [9–12]. We added greater curvature plication for insufficient weight loss after initial laparoscopic adjustable gastric banding, and this was the prototype of LAGBP in our experience [10]. LAGBP can achieve moderate weight loss from the initial greater curvature plication, and further weight loss can be attained by adjusting the band during follow-up period [9,10,12]. Moreover, LAGBP has a comparable weight loss effect with sleeve gastrectomy and can achieve 54.9%–56.3% and 65.8%–66.9% EWL at 12 and 24 postoperative months, respectively [12,13]. However, very little has been written about complications after LAGBP and their management [12–15]. Complications after its constituent procedures, laparoscopic greater curvature plication (LGCP) and laparoscopic adjustable gastric banding (LAGB), include band erosion, slippage, pouch enlargement, port breakage, gastrointestinal bleed, or gastric obstruction [4,5,16–21], and may also pertain to LAGBP. Of these complications, a rare but serious complication is gastric fold herniation (GFH; Fig. 1). Here, we describe our experience in treating this complication after LAGBP. We reviewed its presenting symptoms, diagnostic investigations, and possible strategies to minimize this complication in the learning curve stage of LAGBP.

Methods

A retrospective review was performed on our prospectively collected database of patients undergoing LAGBP for morbid obesity at a single Asian institute from August 2009 to December 2014. Institutional review board approval (EMRP32101 N[RI]) was obtained to review the data and report the analysis. All procedures were performed by a single bariatric surgeon. Inclusion criteria followed the guidelines for bariatric surgeries, and included body mass index (BMI) exceeding 37 kg/m^2 or a BMI greater than 32 kg/m^2 with multiple co-morbidities. The patients excluded were those with malignancies, major psychiatric disorders, previous gastric surgery, liver cirrhosis with portal hypertension, and severe gastroesophageal reflux disease. A total of 223 consecutive patients, including 74 men and 149 women with an average age of 31.2 years (range 18–60), were enrolled in the study. The mean preoperative BMI was 38.3 kg/m^2 (range 32.1–63.7). Patient follow-up at 1 year was 75%, with a mean follow-up of 20.7 ± 15.2 months (range 2–67).

Surgical procedures in LAGBP and their standardization

Our surgical techniques were described previously in full detail [9,11,12]. Briefly, surgery for the initial 70 patients included placement of an adjustable gastric band using the standard pars flaccida technique [10], dissection of the greater omentum from antrum (3 cm from pylorus) to angle of His, calibration with a 38 Fr. orogastric tube, 2-layer

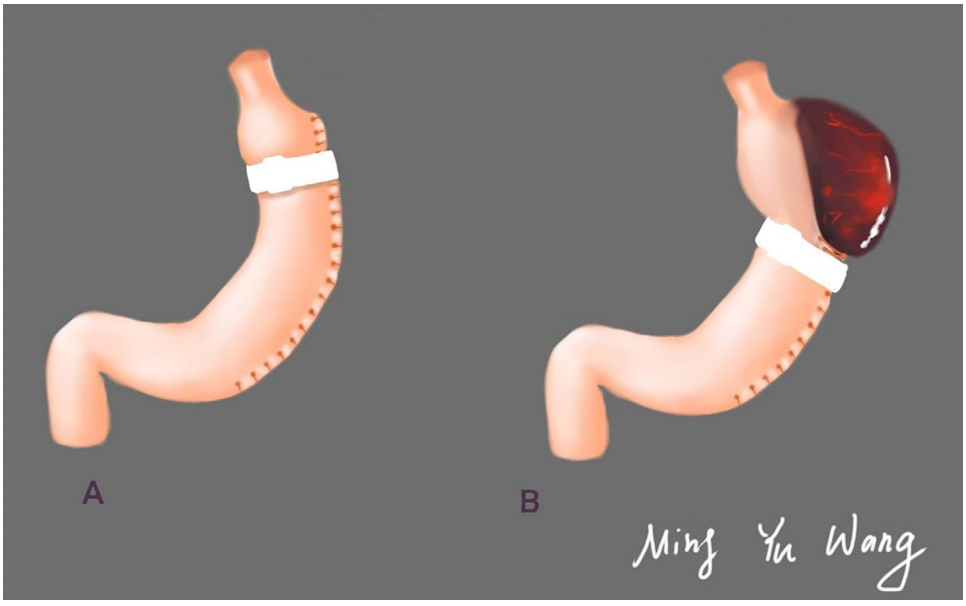

Fig. 1. (A) Technically-correct LAGBP. (B) Gastric fold herniation after LAGBP. LAGBP = laparoscopic adjustable gastric banded plication.