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Original article

Simultaneous laparoscopic paraesophageal hernia repair and sleeve gastrectomy in the morbidly obese

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Abstract

Background: Morbid obesity is associated with increased rates of hiatal and paraesophageal hernias. Although laparoscopic sleeve gastrectomy is gaining popularity as the procedure of choice for morbid obesity, there is little data regarding the management of paraesophageal hernias found intraoperatively. The aim of this study was to evaluate the feasibility and benefits of a combined sleeve gastrectomy and paraesophageal hernia repair in morbidly obese patients.

Methods: From May 2011 to February 2013, 23 patients underwent laparoscopic sleeve gastrectomy combined with the repair of a paraesophageal hernia. Only 4 patients had a large hiatal hernia documented preoperatively on esophagogastroduodenoscopy (EGD). The body mass index (BMI), operative time, length of stay, and complications were evaluated.

Results: The average operative time was 165 minutes (115–240 minutes) and length of stay was 2.83 days (2–6 days). All patients were female except for one, with an average age of 53.4 years and a BMI of 41.9 kg/m^2. There were no complications during the procedures. Mean follow-up was 6.16 months (1–19 months), and mean excess weight loss was 39%. The average cost of admission for a combined procedure ($10,056), was slightly higher than a laparoscopic sleeve gastrectomy ($8905) or laparoscopic paraesophageal hernia repair ($8954) done separately.

Conclusions: Laparoscopic sleeve gastrectomy combined with a paraesophageal hernia repair is well-tolerated and feasible in morbidly obese patients. Surgeons should be aware that preoperative EGD is not effective at diagnosing large hiatal or paraesophageal hernias. Surgeons with the skill set to repair paraesophageal hernias should do a combined procedure because it is well-tolerated, feasible, and can reduce the cost of multiple hospital admissions. (Surg Obes Relat Dis 2014;10:257-261.)

Keywords: Laparoscopic sleeve gastrectomy; bariatric surgery; paraesophageal hernia; paraesophageal hernia repair; hiatal hernia; hiatal hernia repair; obesity; Roux-en-Y gastric bypass; adjustable gastric band

Obesity has become a global epidemic. Current studies project that the vast majority of American adults will become overweight or obese by the year 2048 [1]. Hypertension, heart disease, diabetes, and gastroesophageal reflux disease (GERD) are a few of the many co-morbidities associated with morbid obesity. This places a continued financial strain on healthcare costs, particularly in patients who are unable to lose weight through diet, exercise, or pharmacologic treatment [1]. Laparoscopic bariatric surgery, including Roux-en-Y gastric bypass, adjustable gastric banding, and sleeve gastrectomy, is currently the most effective treatment for morbid obesity and related co-morbidities [2].

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Laparoscopic sleeve gastrectomy is considered technically less complex, compared with Roux-en-Y gastric bypass, contributing to its increased popularity [2]. Current literature shows laparoscopic sleeve gastrectomy to be well-tolerated and effective, resulting in weight loss similar to Roux-en-Y gastric bypass [3–4]. As of 2012, the American Society for Metabolic and Bariatric Surgery recognizes sleeve gastrectomy as an acceptable primary stand-alone bariatric procedure [5]. This has led to a dramatic increase in laparoscopic sleeve gastrectomy procedures. Nguyen et al. analyzed 60,738 bariatric surgery procedures for morbid obesity and found that laparoscopic sleeve gastrectomy procedures increased from .9% to 36.3% when comparing the fourth quarter of 2008 with the third quarter of 2012 [6]. This trend was accompanied by a decrease in laparoscopic adjustable gastric banding (from 23.8% to 4.1%) and in laparoscopic gastric bypass (from 66.8% to 56.4%) [6].

Obesity has been shown to be a significant independent risk factor for the development of GERD and hiatal hernia, as well as for recurrence after repair [7–8]. Preoperative esophagogastroduodenoscopy (EGD) for the detection of hiatal and paraesophageal hernias is not always accurate [9–10].

Surgeons without the skill set to repair a large paraesophageal hernia found intraoperatively may elect to abort the procedure and refer elsewhere. In instances of a small hiatal hernia, they may elect to simply do an insufficient repair. There is limited data regarding the management of paraesophageal hernias in patients undergoing laparoscopic sleeve gastrectomy. The aim of our study is to evaluate the safety and feasibility of laparoscopic sleeve gastrectomy with a concomitant paraesophageal hernia repair.

Methods

All patients undergoing laparoscopic sleeve gastrectomy combined with a paraesophageal hernia repair from May, 2011 to February, 2013 were included in the study. These procedures were all completed laparoscopically by 2 surgeons. Patients with type I hiatal hernias (sliding) were excluded from this study. The age, gender, body mass index (BMI), length of surgery, length of stay, and complications were evaluated. All preoperative upper endoscopy were performed by a gastroenterologist, and the presence of a hiatal hernia was evaluated. This data was compared to all laparoscopic sleeve gastrectomies and laparoscopic paraesophageal hernia repairs done separately at our institution from 2011–2012. The total cost of admission for all 3 groups was evaluated. Percent excess weight loss was calculated using the Metropolitan Life Insurance weight-height tables. This study is exempt from further Institutional Review board review.

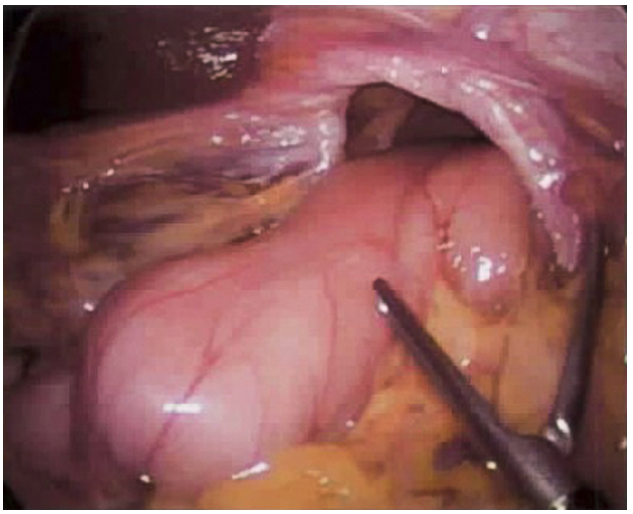

Fig. 1. Type 3 paraesophageal hernia.

Procedure

Laparoscopic repair of the paraesophageal hernia (Fig. 1) was done with complete hernia sac excision (Fig. 2), followed by posterior crural closure after insertion of a 36 French bougie (Fig. 3). There was approximately 1 cm of laxity around the bougie. A biologic mesh was placed in patients who were felt to have attenuated tissues (Fig. 4). All sleeve gastrectomies were performed using glycolide copolymer staple-line reinforcement (GORE SEAMGUARD Bioabsorbable Staple Line Reinforcement, W. L. Gore & Associates, Inc, Flagstaff, AZ) (Fig. 5). An upper gastrointestinal series was done on postoperative day 1 on all patients (Fig. 6)

Results

There were a total of 23 cases of a simultaneous laparoscopic repair of a paraesophageal hernia and sleeve gastrectomy. All patients had a type III paraesophageal hernia. All patients were female except for one, with an average age of 53.4 years (37–66 years) and an average BMI of 41.9 kg/m^2 . The average operative time was 165

Fig. 2. Complete hernia sac excision.