Laparoscopic Roux-en-Y Gastric Bypass is Safe and Effective in Patients with a BMI ≥ 60

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Background: Laparoscopic Roux-en-Y gastric bypass (LRYGBP) has been shown to be safe and effective. There is little data on the outcomes in massively super-obese patients, with a body mass index (BMI) ≥60 kg/m² (super-super-obese). The goal of this study was to determine the safety and effectiveness of LRYGBP in these patients, and compare these results to patients with a BMI <60.

Methods: 213 consecutive patients undergoing LRYGBP by a single surgeon at a university hospital were included in the study. The patients were divided into 2 groups: BMI <60 kg/m² (n=167) and BMI ≥60 kg/m² (n=46). The 2 groups were compared with regard to perioperative complications, and postoperative weight loss.

Results: Both groups had statistically similar complication rates. There were major complications in 8 patients (5%) in the lower BMI group and in 3 patients (7%) in the higher BMI group. There were minor complications in 9 patients (5%) in the lower BMI group and in 4 patients (9%) in the higher BMI group. Mean percent excess weight loss (%EWL) was 64% at 1 year in the BMI < 60 group and 53% in the BMI ≥ 60 group.

Conclusion: LRYGBP can be performed safely and effectively in super-super-obese patients (BMI ≥60). Although these patients have less %EWL than lighter patients, they still end up with a good result. Therefore, LRYGBP should be considered a good surgical option even for patients with a BMI ≥60.

Key words: Morbid obesity, super obesity, gastric bypass, BMI, complications, weight loss

Introduction

Roux-en-Y gastric bypass is currently the most common procedure for morbid obesity in the United States. The laparoscopic approach has been shown to be safe and effective in multiple studies. However, almost all the patients in these studies have had a BMI <60. Few studies have evaluated the super-super-obese patient, defined as BMI ≥60 kg/m². There have been several case reports on the accomplishment of a laparoscopic Roux-en-Y gastric bypass (LRYGBP) in such patients, and there have been reports describing the short-term results. However, there has been little reported as to the effectiveness of the operation in the super-super-obese patient. In addition, some surgeons have suggested that in this subcategory of extremely heavy patients, a more radical operation such as the biliopancreatic diversion or the distal Roux-en-Y bypass should be performed. Others have recommended a less aggressive approach, such as laparoscopic adjustable gastric banding. Even others have advocated a staged approach. This study's goal was to determine both the safety and the efficacy of the LRYGBP in patients with a BMI ≥60.

Methods

The first 213 LRYGBPs performed by a single surgeon (JAT) at our institution were studied. Of note, this surgeon had prior experience at a different hospital, and as such, these patients were not part of his “learning curve”. All patients met the NIH Consensus
criteria for bariatric surgery. Preoperative evaluations and weights were obtained in the office. Evaluation included an abdominal ultrasound, an echocardiogram, and pulmonary function tests for patients with a BMI ≥50. Further testing and specialist consultations were obtained as needed. Patients were admitted to the hospital on the day of surgery. All patients were given intravenous antibiotics and subcutaneous heparin prior to the procedure.

Operative Technique

The operative technique has undergone minor modifications, but the overall technique has remained the same. The abdomen is entered using an Optiview port on the left side of the abdomen, and a total of five trocars are used. A 40-cm biliopancreatic limb is used, while the length of the Roux limb is determined by the patient’s BMI: 100 cm for BMI ≥35, 125 cm for BMI ≥50, and 150 cm for BMI ≥60. The Roux limb is then positioned in a retrocolic retrogastric fashion, and a linear gastric pouch of approximately 30 cc volume is created along the lesser curvature. The gastrojejunostomy is then made either with an endo-GIA stapler (Ethicon, Sommerville, NJ) and a reinforcing layer of sutures, or with a completely hand-sewn anastomosis. All mesenteric defects are then carefully repaired with suture.

Postoperative Management

Postoperatively, the patients were admitted to a surgical stepdown unit. They were maintained on subcutaneous heparin for deep venous thrombosis (DVT) prophylaxis. Sequential compression devices were kept in place as well. A Gastrografin® leak study was obtained on the first postoperative day. Following this, patients were started on a clear liquid diet, using a bariatric protocol. Patients were usually discharged by postoperative day 2 or 3. Follow-up visits were scheduled postoperatively at 1 week, 2 weeks, 1 month, 3 months, 6 months, and then semi-annually. Ongoing nutritional counseling was provided in the office, as well as in support groups.

Data Analysis

Patient demographics, co-morbidities, and weights were collected from the patients prior to their surgery and entered into a database prospectively. Postoperatively, the perioperative complications were entered into the database. As in other similar studies, these were classified into major or minor complications. Gastrointestinal leaks, pulmonary emboli, small bowel obstruction requiring operation, bleeding resulting in hemodynamic instability or transfusion, or any other complication resulting in a significantly prolonged hospital stay were considered to be major complications. All other adverse events were considered to be minor complications. Patients were weighed at each follow-up office visit, and this data was entered prospectively into the database.

For the purpose of this study, the patients were subsequently divided into two groups: morbidly obese (BMI <60), and super-super-obese (BMI ≥60). The two groups were compared retrospectively, in terms of their preoperative co-morbidities, perioperative complications, and weight lost postoperatively. The data was analyzed using Fisher’s exact test to compare the two groups, and Student’s t-test to compare the weight loss results.

At the conclusion of the study, those patients with at least 12 months of follow-up information were identified. We then contacted these patients by telephone, in order to obtain further information and to administer the BAROS questionnaire. Data was obtained regarding the resolution of co-morbidities and their quality of life. This was added to the complication and weight loss information recorded in the office, and a final score was calculated. We compared the results of both groups of patients using Fisher’s exact test.

Results

Patient Demographics

There were 167 patients in the BMI <60 group, and 46 patients in the BMI ≥60 group. The average age was 37 in the lighter group and 40 in the heavier group; this difference was not statistically significant. The average BMI was 48 and 67, respectively. The remaining characteristics and co-morbidities of each group are listed in Table 1. Excluding the BMI, the two groups were similar in most respects with the exception of three areas: there was an increased incidence of hypertension, sleep apnea, and psychiatric illness in the super-super-obese patients.