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Original article

Bariatric Surgery

OPEN ACCESS

BACKGROUND: Laparoscopic Sleeve Gastrectomy (LSG) and Laparoscopic Roux-en-Y Gastric Bypass (LRYGB) are an effective solution for obesity in the Mexican population.
OBJECTIVE: To determine weight loss after bariatric surgery in a private center at a twelve-month follow-up.
METHODS: Retrospective and descriptive analysis of patients admitted for bariatric surgery between January 2014 and December 2019 was performed. Total weight loss (%TWL) and excess weight loss (%EWL) were measured.
RESULTS: Thirty-eight patients underwent LSG, and two hundred ninety-nine patients underwent LRYGB. For LSG patients the mean %TWL achieved was 28.7 ± 7.8, the proportion of patients with successful weight loss (%TWL >10%) were 97% (n=37). The %EWL at the end of the period was 78.4 ± 23.6, the proportion of patients with successful excess weight loss (%EWL >50%) were 94% (n=36). For LRYGB the mean %TWL achieved was 30.6 ± 7.1, the proportion of patients with successful weight loss (%TWL >20%) were 95% (n=284). The %EWL at the end of the period was 78.3 ± 19.3, the proportion of patients with successful excess weight loss (%EWL >50%) were 93% (n=278).
CONCLUSIONS: Both, LGS and LRYGB are very effective weight loss procedures for our patients, showing favorable outcomes in terms of %TWL and %EWL at a 12-month follow-up. Both groups of patients showed excellent results, however further prospective studies with longer follow-up periods are needed to confirm our conclusions.

KEY WORDS: Gastric Bypass, Gastric Sleeve

Introduction

Obesity is a leading public health concern in México, being on the rise during the past 30 years, it has increased 42.2%. In the 2018 survey, 36.1% of adults had obesity (Body mass index, BMI ≥ 30kg/m2) with a higher prevalence in women than in men (1). High failure rate up to 95% of lifestyle interventions including diet, physical activity and behavior therapy have contributed to the need for a more effective approach, being this the bariatric surgery. (2)
Bariatric surgery has shown to be an effective and long-lasting solving key to reduce severe obesity and to control the associated diseases. (3) of the essentials in any bariatric program is the ability to have an adequate follow-up so that we can make early identification of complications such as ulcerations, internal hernias or nutritional deficiencies that can occur long term after the surgery, or in the first 12 months. Regardless of routine efforts by the bariatric team, constancy in bariatric outpatient aftercare continuity is poor. (4)
Despite a prolonged follow-up plan after bariatric surgery is associated with better long-term outcomes and better results in weight loss, usually, after the patient achieved his or her goal, they tend to abandon the assistance to the multidisciplinary bariatric group appointments. (5) Most of the patients only return lately to check up if they suffer any complication or weight regain. Due to this important obstacle, we decided to include only patients who completed a 12-month assistance.

Methods

The database included bariatric patients subdued to Laparoscopic Sleeve Gastrectomy (LSG) and Laparoscopic Roux-en-Y Gastric Bypass (LRYGB) surgeries performed from 2014 to 2019 in a single academic center in CDMX. Preoperative

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demographic characteristics [age, sex, body weight, body mass index (kg/m2)], surgical complications up to 12-month after surgery as well as postoperative follow-up data including total weight loss (%TWL) and excess weight loss (%EWL) were recorded. In the objective of determining weight loss, we based on the standardized described formulae whereas %TWL= [(weight loss/initial weight) x 100] and %EWL= [(weight loss/baseline excess weight) x 100]. Weight loss was represented by (preoperative weight – initial weight) and baseline excess weight was represented by (initial weight – ideal weight), being ideal weight a previously determined calculation of 23 x m2, this was calculated using and ideal body mass index (BMI), as the ideal BMI cut-off point has been demonstrated to be 23kg/m2 (6). Patients with less than 12 months of follow-up data and patients whose surgery was revisional were excluded from the analysis.

Surgical procedure

All the bariatric surgeries were performed as a primary bariatric procedure by the same experienced surgical team consisting of 3 bariatric surgeons, surgeries were completed in a private hospital using a 5-trocar laparoscopic approach with the lead surgeon standing in French position.

Laparoscopic Sleeve Gastrectomy (LSG) technique consisted in vascular division of the greater curvature of the stomach with a Harmonic scalpel starting 4cm proximal to the pylorus up to the gastroesophageal junction, exposing the left crus, 1cm away from the angle of His and completely dissecting the gastric fundus. The sleeve was calibrated with a 36-FR bougie inserted trans orally. Five to seven 45-mm endoscopic staples (the first being a green cartridge and the rest being blue) were fired to transect the excess stomach (80% approximately). The stapler line was reinforced with a running non-absorbable suture. The transected gastric specimen was retrieved through a port site which was extended approximately 1cm. A drainage tube was inserted into the abdominal cavity for all the patients.

Laparoscopic Roux-en-Y gastric Bypass (LRYGB) with simplified technique consisted of creating a gastric pouch starting the vascular dissection at the level of the fourth gastric vessel and using 4 green 45-mm endoscopic staples, then we reinforced the pouch with absorbable suture and the reinforcement of the native stomach was performed with non-absorbable suture. The gastrojejunal anastomosis was created with a 45-mm white staple and with the closure of the defect with absorbable 2-0 suture. A biliopancreatic 60cm loop and an alimentary 150cm loop were the standard measurements of intestine for every patient. The jejunum-jejunum anastomosis was created with a white 45-mm staple and the closure of the defect with a non-absorbable suture. The mesenteric breach was closed with barbed suture. A drainage tube was inserted into the abdominal cavity for all the patients.

Perioperative management and follow-up

In both types of surgery (LSG and LRYGB) patients started with 30ml of water every 30 minutes the next day after surgery and continued with intravenous rehydration. On the second day liquid diet was administered (water, tea, juice and jelly), this diet persisted up to two weeks. LSG patients were discharged the second day after surgery and LRYGB patients until the third day. Patients first follow-up visit was 1 week after surgery, by this time the drainage tube and skin sutures were removed. Outpatient follow-up visits were monthly up to 12 months. Only a small number of patients decided to continue with the appointments after this period.

Statistical analysis

Statistical analysis was performed using SPSS 22.0. Data are expressed as the mean ± standard deviation for continuous variables or as the raw number with the percentage for the nominal variables.

Results

Demographic characteristics of patients

During the study period, from January 2014 to December 2019 there were performed 401 bariatric surgeries, of these 25 were revisional and 39 didn't have the 12-month follow-up required for the study and were taken out of the analysis leaving only 337 patients for data interpretation. LSG was performed in 38 (11.3%) patients and LRYGB was performed in 299 (88.7%) of the patients. In the whole group 223 (66.2%) were female and 114 (33.8%) were male. In the LSG group there where 30 (79%) females and 8 (21%) men, and in the LRYGB there were 193 (64.5%) females and 106 (35.5%) men. Mean preoperative age and BMI were 40.1 ± 12.7 and 38.7 ± 5.3. **(Table 1)**

Weight loss

Follow-up time was 12 months. After LSG the mean BW significantly declined to 71.9 ± 16.2, postoperative BMI was 26.5 ± 4.1. The mean %TWL achieved was 28.7 ± 7.8, the proportion of patients with successful weight loss (%TWL >10%) were 97% (n=37). The %EWL at the end of the period was 78.4

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± 23.6, the proportion of patients with successful excess weight loss (%EWL >50%) were 94% (n=36). **(Table 1)**

After LRYGB the mean BW significantly declined to 75.8 ± 14.2, postoperative BMI was 26.9 ± 4.0. The mean %TWL achieved was 30.6 ± 7.1, the proportion of patients with successful weight loss (%TWL >20%) were 95% (n=284). The %EWL at the end of the period was 78.3 ± 19.3, the proportion of patients with successful excess weight loss (%EWL >50%) were 93% (n=278). **(Table 1)**

	LSG (n=38)	LRYGB (n=299)
Age	32.2 ± 14.3	41.1 ± 10.8
M:F	8:30	106:193
Initial BMI	37.5 ± 5.6	38.9 ± 5.2
Final BMI	26.5 ± 4.1	26.9 ± 4.0
%TWL	28.7 ± 7.8	30.6 ± 7.1
%EWL	78.5 ± 23.6	78.3 ± 19.3

Table 1. Results of demographics, preoperative and postoperative characteristics in patients after bariatric surgery. Laparoscopic Sleeve Gastrectomy (LSG), Laparoscopic Roux en Y Gastric Bypass (LRYGB).

Discussion

Sedentarism, obesity gen factor, changes in the food structure and rapid accessibility to things online had influenced the rapid growth of obesity and its comorbidities. Even though there is an important factor with lifestyle and dietary changes (2), not all the patients can complete these regimens, this is when bariatric surgeries play an important role in improving the life and changing the health of the patients.

Bariatric surgeries like LSG and LRYGB have been recommended as an option for long term weight loss. (7,8). In the present study we conducted a retrospective medium-term (12-month) follow-up on our patients after bariatric surgery. Consistent with many previous studies (1,9,10), our results also suggested that LSG and LRYGB were effective in achieving important weight reduction at the goal time, which was 12 months, with a mean %EWL of 78.4 ± 23.6 for LSG and a mean %EWL of 78.3 ± 19.3 for LRYGB.

There are several limitations to our study. The first limitation is a small number of patients, this is since the study was performed in a private center. Secondly, patients usually gave up the follow-up rate after the twelve-month period, so that we couldn't obtain further information of the weight loss persistence or weight regain. As a third limitation to our study, this was retrospective and taken out of patient records which can influence in variation in weight loss terms.

Conclusion

Both, LGS and LRYGB are very effective weight loss procedures for our patients, showing favorable outcomes in terms of %TWL and %EWL at a 12-month follow-up. Both groups of patients showed excellent results, however further prospective studies with longer follow-up periods are needed to confirm our conclusions.

Conflicts of interests

The authors declare that they have no conflicts of interest.

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