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Surgeon-at-work

Stapleless laparoscopic sleeve gastrectomy. Preliminary report

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Abstract

Background: Laparoscopic sleeve gastrectomy (SG) as a single-stage procedure for the treatment of morbid obesity is becoming increasingly popular.

In undeveloped countries, the linear staples required to create the sleeve are not always available because of their high cost. As an alternative to the staples, the bipolar vessel sealer device could be used in bariatric surgery to divide and temporarily seal the stomach.

Settings: Universidad Central de Venezuela, Caracas, Venezuela.

Methods: Between May 2015 and July 2016, 9 patients with a mean body mass index of 38.2 kg/m² were submitted to a stapleless laparoscopic SG using the bipolar vessel sealer for the gastric division. The sleeve was performed over a 42 French bougie and closed with 2 layers of running sutures. Surgical time, morbidity, hospital stay, and excess weight loss were prospectively collected.

Results: Mean operative time and hospital stay were 117 min and 2.3 days. There was no major morbidity but 2 patients presented a basal atelectasis, which was solved by medical treatment without consequences. After a mean follow up of 6.8 months the mean excess weight loss was 78.4%.

Conclusion: The technique of stapleless laparoscopic SG presented in this report is a valid alternative when these devices are not available. Large series with long-term follow-up are necessary to make definitive conclusions. (Surg Obes Relat Dis 2016;■:00–00.) © 2016 American Society for Metabolic and Bariatric Surgery. All rights reserved.

Keywords:

XXX; XXX; XXX

Bariatric surgery is currently the most effective way to treat morbid obesity in terms of weight reduction, remission of co-morbid conditions, and decreased mortality rates during long-term follow-up [1].

Among the bariatric options, the laparoscopic sleeve gastrectomy (SG) has gained popularity during the past several years, and is currently the most frequently performed procedure in the USA/Canada and in the Asia/Pacific regions, and second to Roux en Y gastric bypass (RYGB) in the Europe and Latin/South America regions [2].

In developing countries like Venezuela, SG is often unavailable because of high cost.

As an alternative to the staples, the LigaSure Atlas™ (LSA) (Valleylab, Tyco, Boulder, CO, USA), has been used

in bariatric surgery to divide the stomach and the jejunum during the staplerless laparoscopic RYGB technique [3,4]. One great advantage of this surgical alternative is cost reduction for the procedure, which would benefit more patients especially in undeveloped countries [3].

In this study, we present a technique for the stapleless laparoscopic SG, and the initial outcomes in our first 9 patients.

Methods

Between May 2015 and July 2016, 9 obese patients were submitted to a stapleless laparoscopic SG using the LSA for the gastric division. The study was approved by the local



Fig. 1. Gastric division using the LigaSure Atlas™.

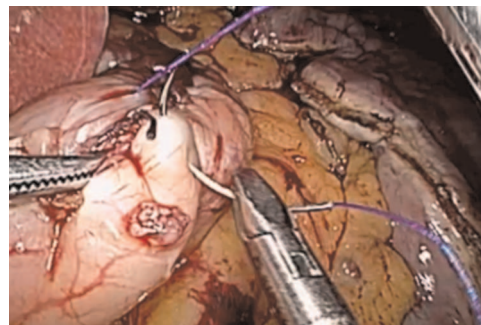


Fig. 3. Seromuscular running suture.

ethics committee and written informed consent was obtained from all patients.

Operative time, morbidity, length of stay, and percent excess weight loss were prospectively collected.

Surgical technique

Under general anesthesia, the patient was placed in lithotomy position with the surgeon positioned between the legs. A pneumoperitoneum was induced by means of a Veress needle and 5 ports were placed.

The vascular supply of the greater curvature of the stomach was divided using ultradissection starting at 5 cm from the pylorus until the His angle.

The gastric tube was created over a 42 French bougie using multiple sequential applications of the 10 mm LSA regulated for a high power, number 3 of the generator power-scale (Fig. 1).

Before the LSA application, the gastric wall was gripped close to the bougie using a 60 mm linear stapler with a fired load, to establish a landmark for the gastric section and also to compress the tissue.

After each 4 LSA applications, a full thickness running suture (Vicryl® 2-0) was used in the gastric tube to make sure that it was hermetically closed (Fig. 2). A second layer of seromuscular running suture (Prolene® 2-0) was applied from the His angle to the gastric antrum (Fig. 3). No intraoperative leak test was performed.

Finally a closed suction drain was placed in the left subdiaphragmatic space and the specimen was removed using a sterile bag.

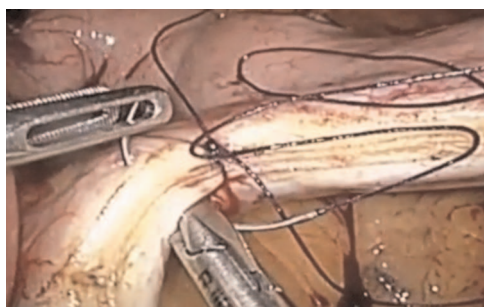


Fig. 2. Full thickness running suture.

Perioperative care

Patients received 3 g of Sultamicillin preoperatively and sequential compression devices were used.

Oral fluids were started after the first postoperative day, and patients were discharged when the tolerance was good.

After the operation, all patients received daily acid suppression medication with esomeprazole and multivitamin and mineral supplementation.

Results

Nine obese patients, 7 females and 1 male, with a mean body mass index of 38.2 kg/m² underwent laparoscopic SG by this stapleless technique.

Hypertension and autoimmune glomerulonephritis, both in the same patient, were the only co-morbidities. In one patient, a laparoscopic cholecystectomy (gallstones) was also performed.

No conversions to laparotomy were necessary, and mean operative time was 117 min.

In 8 patients there was an LSA failure in sealing the stomach, all of them at the gastric antrum. There were no major intraoperative complications.

In the postoperative period, 1 patient developed a basal atelectasis, which was solved by medical treatment without consequences.

Hospital stay was 2.3 days and the percentage of excess weight loss of each patient is presented in Table 1.

Discussion

Laparoscopic sleeve gastrectomy is an increasingly popular procedure for weight loss with a rise in prevalence from 0% to 37% of the world total from 2003 to 2013 [2].

The durability of this procedure is evidenced in the long-term data, and its attractiveness is attributed not only to its significant weight loss outcomes, but also the relative technical simplicity of the operation, as well as the significant improvement of co-morbidities [5,6].

The laparoscopic technique requires multiple sequential applications of linear staples along the stomach to construct the gastric tube, using a bougie to size the sleeve.

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