

Robot-Assisted Revisional Surgery of Gastric Greater Curvature Plication to Roux-en-Y Gastric Bypass

Gabriela Aguiluz Cornejo¹  · Natalia Jelen¹ · Antonio Gangemi¹

Published online: 15 February 2019
© Springer Science+Business Media, LLC, part of Springer Nature 2019

Abstract

Laparoscopic gastric greater curvature plication (LGGCP) has been presented as an alternative to laparoscopic sleeve gastrectomy (LSG) for reversible reduction of stomach capacity without gastric reduction or stapling. We present a case of a 51-year-old Hispanic female with a BMI of 41.91 kg/m², who underwent (LGGCP) 5 years previously at another institution. Despite multiple interventions, the patient was unable to successfully lose weight, and the decision was made to reverse the procedure with a robot-assisted Roux-en-Y gastric bypass. The plication was intact extending from the fundus to the antrum, with the sutures incorporated by scarring and fibrotic tissue. Sutures were delicately removed to form a 30-cc pouch, followed by jejunum-jejunal and gastrojejunal anastomosis. The patient tolerated the surgery well and control fluoroscopy was negative for anastomotic leaks, patient was discharged home on POD 2. At the 40-day follow-up, the patient had lost 22 lb., reducing her BMI to 37.64 kg/m². The 3D vision of the robotic camera and the six degrees of freedom of the robotic instruments seemed to facilitate the challenging dissection of the embedded sutures used for the LGGCP and its overall undoing. However, further volume and data on the robotic approach for this specific revisional procedure are necessary before drawing any definitive conclusions.

Keywords Revisional surgery · Laparoscopic gastric greater curvature plication · Roux-en-Y gastric bypass · Robot-assisted surgery · Bariatric surgery

Introduction

Laparoscopic gastric greater curvature plication (LGGCP) has been presented as an alternative to laparoscopic sleeve gastrectomy (LSG) for reversible reduction of stomach capacity without gastric reduction or stapling. LGGCP reports comparable short-term outcomes to LSG regarding weight loss and complication rates [1, 2]. Nonetheless, there is little literature

regarding its long-term outcomes. In a randomized control study comparing LGGCP and LSG at 2 and 3 years post-procedure, %EWL was significantly higher in the LSG group in addition to significant reports in remission of patient comorbidities [3]. A series of 100 patients, followed by 16 months, reported that 30 required to undergo revisional surgery, due to surgical failure (50%), severe symptoms (36.6%), or presence of both (13.3%). The revisional procedure performed were LSG in 17 patients and laparoscopic gastric bypass (LGBP) in 13 patients, the later approach showing a better %EWL at 18 months [4]. In a series report of 44 cases of LGGCP, the need for early reversal of gastric plication was 9% [5], and a 26-patient series reported that 38.5% of the patients required a sleeve gastrectomy subsequently due to dissatisfactions with their body weight [6].

Electronic supplementary material The online version of this article (<https://doi.org/10.1007/s11695-019-03721-x>) contains supplementary material, which is available to authorized users.

✉ Gabriela Aguiluz Comejo
aguiluzg@uic.edu

Natalia Jelen
njelen2@uic.edu

Antonio Gangemi
agangemii@gmail.com

Methods

We present a case of a 51-year-old Hispanic female with a BMI of 41.91 kg/m², who underwent LGGCP 5 years previously at another institution. Despite multiple interventions, the

¹ Division of General, Minimally Invasive and Robotic Surgery, Department of Surgery, University of Illinois at Chicago, 840 S. Wood Street, Suite 435E (MC 958), Chicago, IL 60612, USA

patient was unable to successfully lose weight. A preoperative upper GI fluoroscopy showed a tubular configuration of the stomach, and the decision was made to reverse the procedure with a robot-assisted Roux-en-Y gastric bypass.

Results

The plication was intact extending from the fundus to the antrum, with the sutures incorporated by scarring and fibrotic tissue. Sutures were delicately removed to form a 30-cc pouch, followed by jejuno-jejunal and gastrojejunal anastomosis. The operative time was 375 min with an estimated blood loss of 30 cc. The patient tolerated the surgery well and control fluoroscopy was negative for anastomotic leaks. Oral intake was initiated on post-operative day (POD) 1 and patient was discharged home on POD 2. At the 40-day follow-up, the patient had lost 22 lb., reducing her BMI to 37.64 kg/m². She reported tolerating her diet well, without nausea or vomiting.

Conclusion

There is a need for additional literature on LGGCP, as long-term results may not be favorable. With preservation of the stomach, enlargement of the pouch can occur and reduction in plasma levels of ghrelin may not be comparable to other resection procedures. These concerns are reflected in our initial experience with revision of LGGCP to RYGB as presented in this report.

The 3D vision of the robotic camera and the six degrees of freedom of the robotic instruments seemed to facilitate the challenging dissection of the embedded sutures used for the

LGGCP and (overall) its undoing. However, further volume and data on the robotic approach for this specific revisional procedure are necessary before drawing any definitive conclusions.

Compliance with Ethical Standards

Conflict of Interest The authors declare that they have no conflict of interest.

Publisher's Note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

References

1. Skrekas G, Antiochos K, Stafyla VK. Laparoscopic gastric greater curvature plication: results and complications in a series of 135 patients. *Obes Surg.* 2011;21(11):1657–63. <https://doi.org/10.1007/s11695-011-0499-6>.
2. Chouillard E, Schoucair N, Alsabah S, et al. Laparoscopic gastric plication (LGP) as an alternative to laparoscopic sleeve gastrectomy (LSG) in patients with morbid obesity: a preliminary, short-term, Case-Control Study. *Obes Surg.* 2016;26(6):1167–72. <https://doi.org/10.1007/s11695-015-1913-2>.
3. Grubnik VV, Ospanov OB, Namaeva KA, et al. Randomized controlled trial comparing laparoscopic greater curvature plication versus laparoscopic sleeve gastrectomy. *Surg Endosc.* 2016;30(6):2186–91. <https://doi.org/10.1007/s00464-015-4373-9>.
4. Zerrweck C, Rodriguez JG, Aramburo E, et al. Revisional surgery following laparoscopic gastric plication. *Obes Surg.* 2017;27(1):38–43. <https://doi.org/10.1007/s11695-016-2242-9>.
5. Atlas H, Yazbek T, Gameau PY, et al. Is there a future for laparoscopic gastric greater curvature plication (LGGCP)? A review of 44 patients. *Obes Surg.* 2013;23(9):1397–403. <https://doi.org/10.1007/s11695-013-0934-y>.
6. Khidir N, Al Dhaheri M, El Ansari W, et al. Outcomes of laparoscopic gastric greater curvature plication in morbidly obese patients. *J Obes.* 2017;2017:7989714. <https://doi.org/10.1155/2017/7989714>.