Obesity Surgery (2018) 28:2985–2986
https://doi.org/10.1007/s11695-018-3339-0

VIDEO SUBMISSION

Video Revisional Gastric Bypass After Vertical Banded Gastroplasty by a Hybrid Technique: Robotic and Laparoscopic

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Published online: 20 June 2018

Abstract

The video shows, step-by-step, the hybrid laparoscopic conversion of vertical banded gastroplasty (VBG) to Roux-en-Y gastric bypass (RYGB) with a robotic-assisted hand-sewn technique (HST) for gastrojejunal anastomosis (GJA).

Keywords Vertical banded gastroplasty · VBG · Revisional surgery · Gastric bypass · Hand sewn · Hybrid · Robotic · Video · Gastrojejunal anastomosis

Introduction

Mason introduced vertical banded gastroplasty (VBG) in 1982, and it quickly became the procedure of choice due to its few short-term complications. Then, laparoscopic VBG by Hess et al. heralded a new era for bariatric surgery. Later, the majority of studies advised against the use of VBG due to its relatively high long-term failure rate [1]. Today, the need for VBG revisions, in up to 79% of cases [1], is raising technical difficulties.

Electronic supplementary material The online version of this article (https://doi.org/10.1007/s11695-018-3339-0) contains supplementary material, which is available to authorized users.

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Materials and Methods

A 51-year-old female, with a past history of multiple abdominal surgeries, open VBG, and open cholecystectomy performed outside our institute 10 years ago, presented with alimentary intolerance and severe gastroesophageal reflux disease refractory to medical treatment. Hybrid conversion to RYGB was done, as shown in the video. Hand-sewn technique (HST) was achieved by means of two running posterior sutures and only one running anterior suture. The first posterior suture is done laparoscopically while both the second posterior suture and the anterior suture are performed robotically.

Discussion

Revisional procedures are associated with significant morbidity, a 9-fold increase in gastrointestinal leaks, and 2.5-fold increase in intensive care unit (ICU) stay [2] due to significant adhesions; loss of tissue planes; scarred, compromised, fragile, or inflamed tissues; and subclinical metabolic derangements [3]. The key to avoiding surgical complications post-VBG is good exposure to the angle of hiss and the divided stapler line, good resizing of the gastric pouch, and starting the dissection from the lesser omentum above the level of the gastric band. Finally, the VBG stapler line should be resected to avoid blind gastric pouch and mucocele of the gastric tube formation, as shown in the video.

Gastrojejunal anastomosis is where most complications occur [4], especially in redo surgery, and some surgeons obviate

the need for high gastric anastomosis by not choosing RYGB [5]. Some authors suggest that laparoscopic anastomotic complications could be induced by the use of staplers [6], while HST involves lower hospital costs, less anastomotic leakage and bleeding, fewer stricture complications, and lower incidence of wound infection [3–6], albeit it takes longer to perform. In addition, the use of an absorbable suture seems to reduce the risk of marginal ulceration [7].

Laparoscopy is the gold standard for RYGB due to the decreased level of invasiveness compared to open procedures [6]. Laparoscopic HST is theoretically possible, but technically challenging [6] and may not be considered the best option in difficult cases [8]. Robotic HST has fewer complications than laparoscopy [4] as robotics offer the advantage of adding more degrees of freedom for the needle driver, more precise suture placement in a stable 3D environment, and a precise view of the mucosal and serosal layers. Hybrid robotics is time-consuming in primary but not in revisional RYGP [4] and increases the threshold level of conversion to open surgery [9]. Accordingly, this decreases ICU and hospital stay [5, 6]. Robotic RYGB can be cost-effective due to balancing the greater robotic costs with the savings from avoiding stapler use and costly anastomotic complications [6].

Conclusion

The added value of robotics in routine bariatric surgery remains controversial. We suggest investigating robotic benefits in feasible revisional bariatric surgery.

Contributions MG and CL collected the data; MG contributed to the preparation of video, discussion, and writing; MG, FP, and RC contributed to case conceptualization, participated in writing, and reviewed the manuscript.

Compliance with Ethical Standards

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

Statement of Human and Animal Rights This article does not contain any studies with human participants or animals performed by any authors.

Informed Consent Informed consent was obtained from all individual participants included in the study.

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