

VIDEO CASE REPORT

Sleeve in sleeve: endoscopic revision for weight regain after sleeve gastrectomy

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Sleeve gastrectomy (SG) is currently the most commonly performed bariatric surgical procedure in the United States.¹ Although SG is effective at inducing weight loss and improving obesity-related comorbidities, weight regain is common. Approximately 5.7% of SG patients experience weight regain at 2 years, and this number

increases to 75.6% at 6 years.^{2,3} At 7 years, approximately 19.9% of SG patients undergo surgical revision.⁴

Traditionally, weight regain after SG is treated with surgical conversion from SG to Roux-en-Y gastric bypass (RYGB).⁵ After this conversion, patients experience approximately 9.0%, 12.9%, and 15.7% total weight loss

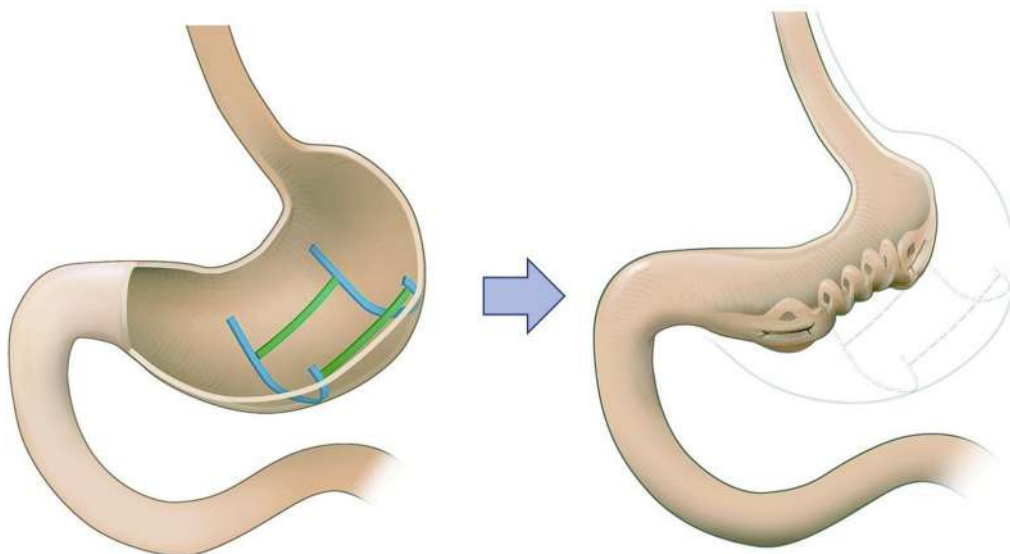


Figure 1. Distal primary obesity surgery endoluminal procedure through a belt-and-suspenders approach.



Figure 2. Diagnostic endoscopic view revealing a relatively dilated sleeve.

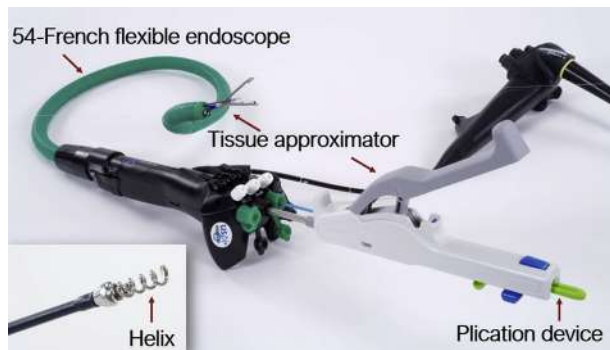


Figure 3. Plication system (the incisionless operating platform).

at 3, 6, and 12 months, respectively.⁶⁻⁸ Endoscopic revision for weight regain after RYGB has been extensively evaluated.⁹⁻¹² However, to our knowledge, there has been no published report of endoscopic therapy for weight regain after SG. In this video ([Video 1](#), available online at www.VideoGIE.org) we demonstrate the technical feasibility, safety, and efficacy of a novel endoscopic approach to treating weight regain after SG using a belt-and-suspenders plication pattern previously described by our group for primary endoscopic bariatric therapy ([Fig. 1](#)).¹³

Our patient was a 58-year-old woman with a history of laparoscopic SG and cholecystectomy in 2016 who presented with weight regain. Her pre-SG weight was 301 pounds, with a postsurgical nadir weight of 165 pounds. Her weight at presentation was 201 pounds, representing a regain of 26.5% of maximal weight loss and a body mass index of 34.4 kg/m². She was adherent to lifestyle interventions and was previously prescribed phentermine and topiramate, which were discontinued because she experienced severe jitteriness. The patient refused to undergo conversion of SG to RYGB; therefore, she was referred to the bariatric endoscopy clinic. Diagnostic endoscopy revealed a relatively dilated sleeve ([Fig. 2](#)).

The endoscopic plication device described in this video is approved by the U.S. Food and Drug Administration for general tissue approximation in the stomach. The device consists of a 54F flexible endoscope with 4 working channels (Transport-R; USGI Medical, San Clemente, Calif, USA) that accommodate a tissue approximation instrument (G-Prox; USGI Medical), a helix (G-Lix; USGI Medical), a plication device (G-Cath; USGI Medical), and an ultrathin endoscope ([Fig. 3](#)).

The procedure described in this video is characterized as a sleeve-in-sleeve procedure with a focus on placement of plications in the gastric body using a belt-and-suspenders pattern. First, the distal belt plications are placed perpendicular to the greater curvature in the distal body along the posterior surface extending to the anterior surface to reduce the width of the sleeve ([Fig. 4](#)). Subsequently, 2 rows of suspender plications are placed parallel to the greater curvature in the midbody along the anterior and posterior aspects of the greater curvature, respectively ([Figs. 5 and 6](#)). These suspender plications serve to shorten the length of the sleeve. Finally, the proximal belt plications are created perpendicular to the greater curvature in the proximal body to further decrease the cross-sectional area of the sleeve ([Fig. 7](#)). At the end, despite no direct plications in the fundus, the fundus is reduced because of the longitudinal plications in the body.

The patient did well postprocedurally. She was prescribed a proton pump inhibitor and was prescribed a liquid diet for 45 days. At 3 months, her weight had decreased from 201 pounds to 185 pounds, corresponding to an 8.0% total weight loss and a 20.5% excess weight loss.

In conclusion, in this video, we present a case of successful endoscopic treatment of weight regain after SG using a novel plication technique. Given the rising prevalence of SG being performed, gastroenterologists will continue to see an increasing number of these patients. A safe and

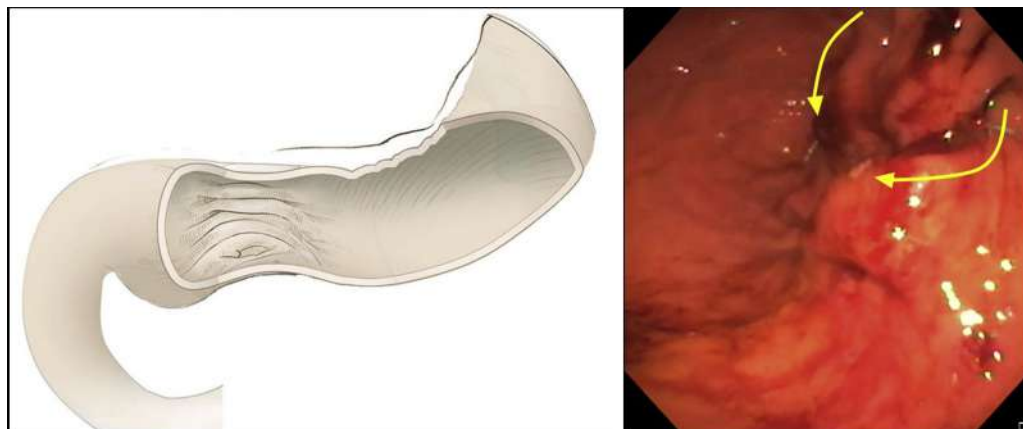


Figure 4. Distal belt plications perpendicular to the greater curvature in the distal body along the posterior surface extending to the anterior surface to reduce the width of the sleeve.

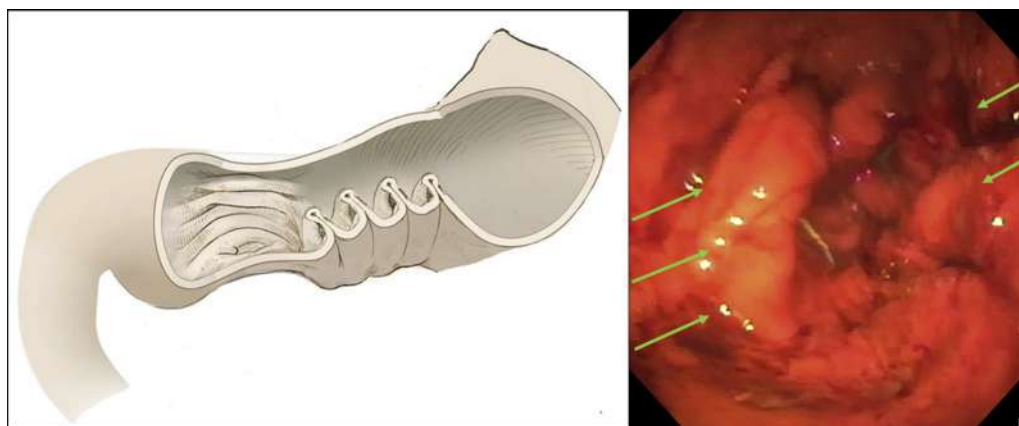


Figure 5. First row of suspender plications parallel to the greater curvature in the midbody along the anterior aspect of the greater curvature to reduce the length of the sleeve.

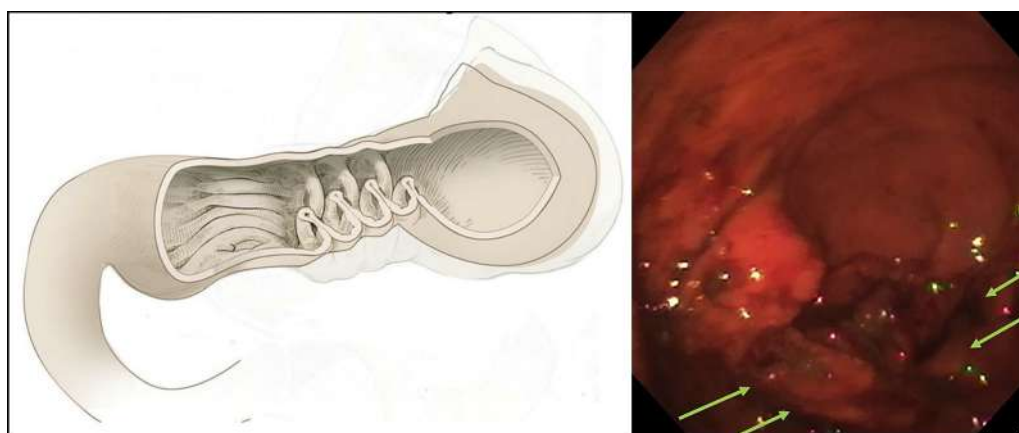


Figure 6. Second row of suspender plications parallel to the greater curvature in the midbody along the posterior wall to reduce the length of the sleeve.

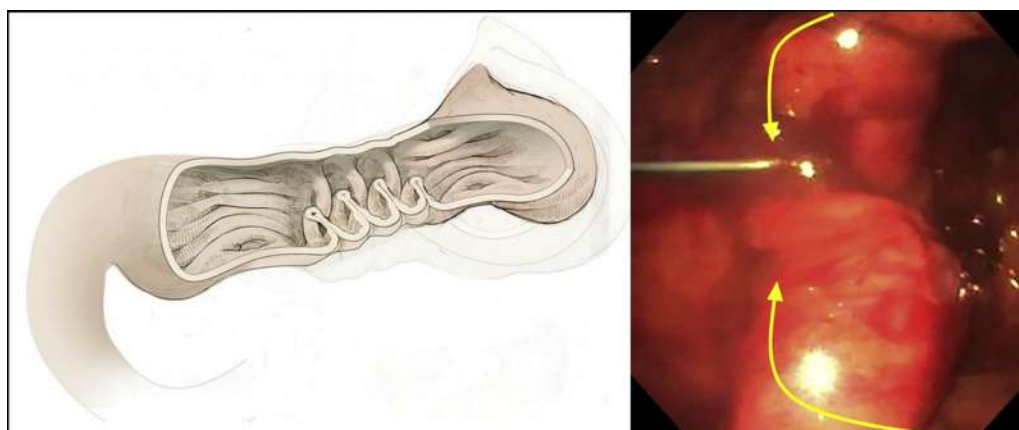


Figure 7. Proximal belt plications perpendicular to the greater curvature in the proximal body to further reduce the width of the sleeve.

effective endoscopic approach to treating weight regain in this population will therefore become increasingly more important. Further study to better define patient selection criteria and long-term outcomes is warranted.

DISCLOSURE

Dr Jirapinyo is a consultant for GI Dynamics. Dr Thompson has contracted research for Aspire Bariatrics,

USGI Medical, Spatz, and Apollo Endosurgery; has served as a consultant for Boston Scientific, Covidien, USGI Medical, Olympus, and Fractyl; holds stock and royalties for GI Windows and Endosim; and has served as an expert reviewer for GI Dynamics. The other author disclosed no financial relationships relevant to this publication.

Abbreviations: RYGB, Roux-en-Y gastric bypass; SG, sleeve gastrectomy.

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