



# Modified-ESD Plus APC and Suturing for Treatment of Weight Regain After Gastric Bypass

Diogo Turiani Hourneaux de Moura<sup>1,2</sup> · Pichamol Jirapinyo<sup>1</sup> · Christopher C. Thompson<sup>1</sup> 

Published online: 2 April 2019  
© Springer Science+Business Media, LLC, part of Springer Nature 2019

## Abstract

**Background** Mechanisms for weight regain after gastric bypass are not fully understood and the process is likely multifactorial. The initial step in the management of weight regain is a comprehensive evaluation of contributing factors. While lifestyle modification is fundamental, it has limited efficacy which can be enhanced by medications and/or endoscopic revision. Anatomic changes such as larger pouch size and dilation of the gastrojejunal anastomosis (GJA) may contribute to increased postoperative weight gain. Endoluminal revisions offer an effective and less invasive management strategy for this population.

**Methods** A 55-year-old female with history of RYGB in 2006 presented with weight regain. She was referred to our unit for endoscopic evaluation.

**Results** During endoscopy, a large GJA (25 mm in diameter) was diagnosed. A novel trans-oral outlet reduction (TORe) was then performed. A modified ESD was first performed on the GJA, followed by argon plasma coagulation of the margins of the ESD. Then a purse-string TORe with suturing was performed, using a 10 mm balloon to size the GJA. On 6-month follow-up, patient lost 20 lb. and 12.26 %TBWL and EGD showed a 10 mm diameter GJA. On 1-year follow-up, patient weight loss was 14 lb. and 8.58 %TBWL. The follow-up endoscopy showed a 12 mm diameter GJA.

**Conclusion** Endoluminal therapies are safe, reproducible, and effective in the treatment of weight regain and should be utilized as a first-line approach to manage this condition. This novel-combined approach is feasible and may be more effective in the treatment of weight regain.

**Keywords** Obesity · Bariatric surgery · Endoscopy · TORe · Recidivism

---

**Electronic supplementary material** The online version of this article (<https://doi.org/10.1007/s11695-019-03808-5>) contains supplementary material, which is available to authorized users.

---

✉ Christopher C. Thompson  
ccthompson@bwh.harvard.edu

Diogo Turiani Hourneaux de Moura  
dthmoura@hotmail.com; dmoura1@bwh.harvard.edu

Pichamol Jirapinyo  
pjirapinyo@bwh.harvard.edu

<sup>1</sup> Division of Gastroenterology, Hepatology and Endoscopy, Brigham and Women's Hospital, Harvard Medical School, 75 Francis St., Thorn, Boston, MA 1404, USA

<sup>2</sup> Departamento de Gastroenterologia, Hospital das Clinicas da Faculdade de Medicina da Universidade de Sao Paulo, São Paulo, Brazil

## Introduction

Mechanisms for weight regain after gastric bypass are not fully understood and the process is likely multifactorial. The initial step in the management of weight regain is a comprehensive evaluation of contributing factors. While lifestyle modification is fundamental, it has limited efficacy which can be enhanced by medications and/or endoscopic revision [1, 2]. Anatomic changes such as larger pouch size and dilation of the gastrojejunal anastomosis (GJA) may contribute to increased postoperative weight gain [2]. Endoluminal revisions offer an effective and less invasive management strategy for this population [1, 3].

## Material and Methods

A 55-year-old female with history of Roux-en-Y gastric bypass (RYGB) in 2006 presented with weight regain. Her weight pre-

RYGB was 206 lb. and her nadir weight was 144 lb. However, her weight subsequently increased (163 lb., BMI: 27.9) and she failed diet and medical therapy. She was referred to our unit for endoscopic evaluation and possible treatment.

## Results

During endoscopy, a large GJA (25 mm in diameter) was diagnosed. A novel trans-oral outlet reduction (TORe) was then performed. A modified ESD was first performed on the GJA, followed by argon plasma coagulation (APC) of the margins of the ESD. Then a purse-string TORe with suturing was performed, using a 10-mm balloon to size the GJA. The patient tolerated the procedure well. She was kept NPO for the night post-procedure followed by 3 days of clear liquids. Then, the diet was advanced to 6 weeks of a full liquid diet, followed by 2 weeks of soft diet. Subsequently, the patient returned to a regular diet post RYGB. On 6-month follow-up, patient lost 20 lb. and 12.26% of total body weight loss (%TBWL) and EGD showed a 10-mm diameter GJA. On 1-year follow-up, patient weight loss was 14 lb. and 8.58 %TBWL. The follow-up endoscopy showed a 12 mm diameter GJA.

## Conclusion

This novel endoscopic combined approach is feasible and may be more effective in the treatment of weight regain.

Additionally, a RCT would be helpful to better understand the cost-benefit ratio of this technique and would provide further insight into the optimal care of this challenging population.

## Compliance with Ethical Standards

**Conflict of Interest** Authors 1 and 2 have no conflict of interest. Author 3 reports fees as a consultant for Boston Scientific, USGI Medical, Olympus, and Apollo Endosurgery.

**Ethical Approval** Institutional Review Board of the Hospital approved the study. A consent was signed by the patient before the procedure.

## References

1. Hedberg HM, Trenk A, Kuchta K, et al. Endoscopic gastrojejunostomy revision is more effective than medical management alone to address weight regain after RYGB. *Surg Endosc.* 2018;32(3):1564–1571.
2. Dayyeh BK, Lautz DB, Thompson CC. Gastrojejunal stoma diameter predicts weight regain after Roux-en-Y gastric bypass. *Clin Gastroenterol Hepatol.* 2011;9(3):228–33.
3. Brunaldi VO, Jirapinyo P, de Moura DTH, et al. Endoscopic treatment of weight regain following Roux-en-Y gastric bypass: a systematic review and meta-analysis. *Obes Surg.* 2018;28(1):266–276.

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