



Case Report

A Novel Bariatric Reduction System (BARS) Devices for Revision of Roux-en-Y Gastric Bypass in Patient with Weight Regain Unfit for Surgery

Giuseppe Grande^{1*}, Lorenzo Carloni², Luca Pignata¹, Nicola De Gennaro¹, Silvia Cocca¹, Andrea Formiga³, Micaela Piccoli⁴, Fouzia Mecheri⁴, Helga Bertani¹, Rita Conigliaro¹

¹Gastroenterology and Digestive Endoscopy unit-Azienda Ospedaliero Universitaria of Modena, Via del Pozzo 71, Zip Code 41125, Modena, Italy.

²Department of Medical and Surgical Science-DIMEC, Alma Mater Studiorum, University of Bologna, Bologna, Italy.

³Director of Centro Bariatrica and Obesità, Milan, Italy.

⁴Division of General, Emergency Surgery and New Technologies, OCB, Baggiovara, Modena, Italy.

***Corresponding author:** Giuseppe Grande, Gastroenterology and Digestive Endoscopy Unit-Azienda Ospedaliero Universitaria of Modena-Via del Pozzo 71, Zip Code 41125, Modena, Italy.

Citation: Grande G, Carloni L, Pignata L, De Gennaro N, Cocca S, et al. (2023) A Novel Bariatric Reduction System (BARS) Devices for Revision of Roux-en-Y Gastric Bypass in Patient with Weight Regain Unfit for Surgery. Ann Case Report 8: 1572. DOI: 10.29011/2574-7754.101572

Received: 23 December 2023; **Accepted:** 27 December 2023; **Published:** 29 December 2023

Abstract

The number of bariatric surgery procedures is increasing worldwide. Roux-en-Y gastric bypass (RYGB) and endoscopic sleeve gastrectomy (SG) are the most common interventions performed in Italy. Up to 20% of patients, undergoing bariatric surgery, experience progressive weight regain (WR) over the following years. The introduction of endoscopic suturing systems allowed a reduction of the anastomotic caliber or the gastric pouch capacity in a minimally invasive fashion, restoring the feeling of early satiety e.g. Transoral Outlet Reduction (TORe) and Revision Obesity Surgery, Endoluminal (ROSE). However, technical difficulties may limit their application. For these reasons, a new anastomotic revision modality on RYGB has recently been introduced on the market: the Bariatric Anastomotic Reduction System (BARS-Ovesco Endoscopy, Tubingen, Germany). Here, we report a case of a patient who underwent RYGB in 2013 and showed progressive weight regain. The BARS was successfully performed to achieve a reduction of the anastomotic caliber.

Keywords: Bariatric Surgery; Roux-En-Y Gastric Bypass; Weight Regain; Bariatric Anastomotic Reduction System; BARS; TORe; ROSE

Introduction

Over 25,000 bariatric surgery procedures are performed in Italy annually, mainly Roux en Y gastric bypass (RYGB) and sleeve gastrectomy (SG) [1]. According to the literature, about

10 to 20% of these patients experience weight regain (WR) over the years [2-3]. Anatomical reasons for RYGB failure include loss of restriction due to gastric pouch enlargement, dilation of gastrojejunal anastomosis (GJA) or fistula development between the gastric pouch and the remnant of the stomach. Treatments may include surgical repackaging of the gastric pouch or GJA. However, revisional surgery is associated with a high-risk-to-benefit ratio in comparison to the primary procedure [4-6]. Currently, the most

popular endoscopic revisional procedures are Transoral Outlet Reduction (TORe) and Revision Obesity Surgery Endoluminal (ROSE) [7]. Despite some undoubted advantages, the narrow space to perform this procedure may limit their application. Moreover, polypropylene threads used by these suturing devices tend to detach from the tissue over time [8-9]. The BARS (BARS-Ovesco Endoscopy, Tubingen, Germany) was introduced recently on the market trying to solve these difficulties: it is composed of a nitinol clip on the tip of the scope, two additional over-the-scope working channels that allow the anchors catheter passage, and a 6 mm pneumatic balloon, essential to ensure luminal patency during the clip release [10].

Case Report

We report the case of a 68-year-old Caucasian male patient who underwent RYGB in 2013, achieving 35% total weight loss (TWL). After that, the patient underwent other major abdominal surgeries for aneurismatic aortic repair and for left renal capsuled cancer. Seven years later, a gradual but progressive WR occurred, reaching 108 Kg (BMI 37.8 Kg/m²). Upper endoscopy showed the GJA enlargement (estimated diameter of 25mm) (Video 1). Due to previous surgeries, a further invasive approach was excluded, then the patient was proposed for an intraluminal procedure using the BARS device. The procedure was performed under general anesthesia with endotracheal intubation. Using a standard gastroscope, a semi-circumferential mucosal incision with a dedicated knife was performed on the gastric side close to the GJA, providing the exposition of submucosal and muscular layers, and promoting the subsequent scarring process and the tissue retraction. After the BARS system assembly on the scope, the post anastomotic jejunal limb was explored releasing a guide wire into the lumen. Then the scope was withdrawn, and the third phase consisted of capturing the muscularis propria exposed after the mucosal incision, using two dedicated anchor catheters. Under fluoroscopy, a 6 mm balloon catheter passed on the guidewire was inflated and retrieved across the anastomotic opening, to avoid its complete closure. The two anchors were then progressively pulled back inside the cap mounted on the tip of the scope, and the over-the-scope nitinol clip was released. Endoscopic and radiological evaluations showed a significant reduction in the caliber of the gastric pouch and GJA, maintaining the patency through the efferent jejunal loop.

Results and Discussion

The post-procedural observation was uneventful, and the patient was discharged on the second day. After 6 months, the

clinical follow-up revealed a progressive and substantial weight loss of 14 Kg and the patient reached 94 Kg, with no midterm adverse events.

Conclusion

The BARS technique has the advantages of the intraluminal suture technique, theoretically associated with persistent fibrosis and retraction of the anastomotic ring to maintain the initial benefits. In case of loss of efficacy, after some years, the procedure may be repeated. Moreover, in the future, this technique could be performed routinely in an outpatient setting. Comparison studies with long follow-ups will be needed to confirm these hypotheses.

Acknowledgments: The authors would like to thank all the workers who participated in the study. All listed authors have participated in the case report writing and they have approved the final manuscript.

Informed consent: Yes

Conflict of Interest: The authors have no potential conflicts of interest

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