




Sequential Endoscopic Therapies for Treatment of Complex Gastrointestinal Transmural Leak Following Bariatric Surgery

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Obesity is a chronic disease with increasing incidence and prevalence, and bariatric surgery remains the most effective and long-lasting therapy. However, complications such as leaks and fistulas may occur in about 0.5 to 5.3% of patients [1]. Treating these conditions is challenging and includes four pivotal principles: systemic treatment, drainage, treatment of related factors, and defect closure. Endoscopic management is considered the main approach in most cases. For complex leaks and fistulas, multiple therapies and repeated procedures are required [2–4]. In this video, we describe the use of multiple therapies to treat complex bariatric surgery complications, demonstrating the mechanism of action for each approach.

Case Description

A 50-year-old woman with class II obesity underwent laparoscopic sleeve gastrectomy (LSG). On the fourth postoperative day, she presented with abdominal pain and tachycardia and a computed tomography (CT) revealed a leak located at the angle of His. Revisional surgery was performed, and due to intraoperative complications, total gastrectomy and splenectomy were performed. An esophagojejunal anastomosis dehiscence complicated the postoperative course, and image-guided external drainage was performed. However, fever, tachycardia, and hypotension persisted, and she was referred to our institution.

The admission CT revealed pneumoperitoneum and an uncontained collection. We performed an esophagogastroduodenoscopy (EGD), which diagnosed complete dehiscence (360 degrees) of the anastomosis, associated with a large infected collection. At this point, we placed an intracavitary modified endoscopic vacuum therapy (EVT) as it promotes drainage, bacterial clearance, edema control, and allows macrodeformation and microdeformation, promoting angiogenesis [5].

Ten days later, the endoscopic evaluation revealed reduction in the collection and formation of early granulation tissue. Fluoroscopy demonstrated a confined collection with no leaks, and we associated the intraluminal with the intracavitary EVT to remodel the anastomosis and prevent enteral reflux [5]. Progressive clinical improvement was achieved and at 1-week follow-up endoscopy, exuberant granulation tissue was noted, without signs of infection, allowing removal of the EVT and placement of double pig-tail stents for internal drainage. Three days later, she was discharged from the hospital and returned for endoscopic follow-up after 1 month. A complete closure of the defect with anastomotic stenosis was identified. Weekly endoscopic dilation was performed without improvement. Therefore, a Fully Covered Self-Expandable Metal Stent was placed.

Key Points

Leaks and fistulas are severe complications after bariatric surgery.
Endoscopy can be considered the initial approach in stable patients.
Chronic post-bariatric surgery fistulas usually require multidisciplinary approach.

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Additionally, steroid injection through the stent at the site of stenosis was performed weekly for 6 weeks. After stent removal, EGD showed complete closure of the defect and no signs of stenosis. Periodic hydrostatic balloon dilation was performed in the following 3 months to reduce the risk of stenosis return. On 6-month follow-up, patient remained asymptomatic with no need for further procedures.

In summary, endoscopic therapies are safe and effective in the management post-bariatric leaks and fistulas. Knowledge of the mechanism of action of each endoscopic approach is essential to achieving clinical success. Additionally, device availability and personal and local experience should always be considered. Due to the complexity of this condition, a multidisciplinary approach in a referral center is often essential for the treatment of these patients.

Supplementary Information The online version contains supplementary material available at <https://doi.org/10.1007/s11695-022-06311-6>.

Declarations

Ethical Approval All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Informed Consent Informed consent was obtained from all individual participants included in the study the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Conflict of Interest Eduardo Guimarães Hourneaux de Moura receives sponsorship for consultancy from Boston Scientific and Olympus; Di-

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References

1. Iossa A, Abdelgawad M, Watkins BM, et al. Leaks after laparoscopic sleeve gastrectomy: overview of pathogenesis and risk factors. *Langenbecks Arch Surg.* 2016;401(6):757–66. <https://doi.org/10.1007/s00423-016-1464-6>.
2. Rogalski P, Swidnicka-Siergiejko A, Wasielica-Berger J, et al. Endoscopic management of leaks and fistulas after bariatric surgery: a systematic review and meta-analysis. *Surg Endosc.* 2021;35:1067–87.
3. de Moura DTH, Sachdev AH, Thompson CC. Endoscopic full-thickness defects and closure techniques. *Curr Treat Options Gastroenterol.* 2018;16(4):386–405.
4. Bestetti AM, Boghossian MB, Hirsch BS, et al. Multiple endoscopic therapies for treatment of chronic post-bariatric surgery gastropleural fistula. *Obes Surg.* 2022;32(9):3206–7.
5. de Moura DTH, Hirsch BS, Do Monte Junior ES, et al. Cost-effective modified endoscopic vacuum therapy for the treatment of gastrointestinal transmural defects: step-by-step process of manufacturing and its advantages. *VideoGIE.* 2021;6(12):523–8.

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