Short Communication

BIOMEDICAL Journal of Scientific & Technical Research

ISSN: 2574 -1241

DOI: 10.26717/BJSTR.2025.63.009887

Self-Expanding Stents in the Management of Post-Bariatric Surgery Leaks: Is There Still a Role?

Porpora Danilo[2], Mauro Maria[2], Hajduk Julia Elzbieta[3], D'apice Flavia[2], Di Chiara Maria Rosaria[2], Sglavo Nicola[2], Della Rocca Antonella[2] and De Sena Gabriele[1,2]

[1]*University of Ostrava, Czech Republic*

[2]*University of Campania Luigi Vanvitelli, Italy*

[3]*University of Rome La Sapienza, Italy*

***Corresponding author:** De Sena Gabriele, Faculty of Medicine, University of Ostrava, Dvořákova 7, 701 03 Ostrava, Czech Republic

ARTICLE INFO

Received: September 12, 2025

Published: September 30, 2025

Citation: Porpora Danilo, Mauro Maria, Hajduk Julia Elzbieta, D'apice Flavia, Di Chiara Maria Rosaria, Sglavo Nicola, Della Rocca Antonella and De Sena Gabriele. Self-Expanding Stents in the Management of Post-Bariatric Surgery Leaks: Is There Still a Role?. Biomed J Sci & Tech Res 63(3)-2025. BJSTR. MS.ID.009887.

ABSTRACT

Leaks represent one of the most feared complications following bariatric surgery, with an incidence ranging from 1–6%, particularly after sleeve gastrectomy (SG). Endoscopic therapy has largely replaced surgical reintervention, and self-expanding metal stents (SEMS) have traditionally been the first-line treatment. Data from multiple series and meta-analyses confirm high success rates in acute and early leaks, approaching 90–95%. However, efficacy significantly decreases in chronic leaks and fistulas, where success rates may fall below 40%. In parallel, novel endoscopic techniques-including endoscopic vacuum therapy (EVT), endoscopic internal drainage (EID), and over-the-scope clips (OTSC)-have emerged as promising alternatives. This short communication reviews current evidence summarizes the advantages and limitations of SEMS and highlights the need for a stepwise and multidisciplinary approach.

Abbreviations: SG: Sleeve Gastrectomy; SEMS: Self-Expanding Metal Stents; EVT: Endoscopic Vacuum Therapy; EID: Endoscopic Internal Drainage; OTSC: Over-The-Scope Clips

Introduction

Bariatric surgery has become the most effective long-term treatment for morbid obesity and obesity-related comorbidities. However, postoperative leaks remain a dreaded complication, particularly after SG, due to the long staple line and high intraluminal pressure. Most leaks occur near the esophagogastric junction and the angle of His. Leaks are classified according to anatomy and timing. Management strategies have shifted from surgical revision toward less invasive endoscopic approaches. SEMS have represented the cornerstone of treatment for more than a decade. Their ability to cover large defects and restore enteral nutrition rapidly makes them an attractive option, particularly in unstable patients. However, growing experience with alternative modalities has led to debate regarding the continued role of SEMS in modern endoscopic practice.

Methods/Overview of Evidence

A narrative review of major series and meta-analyses on SEMS for post-bariatric surgery leaks was conducted. Studies included data on SG and RYGB leaks, success rates, complications, and comparisons with other techniques. Meta-analyses, including more than 400 patients have consistently demonstrated closure rates of approximately 90% in acute cases. Customized bariatric stents have been evaluated in several studies, with reported success rates up to 100%, but their use is limited by higher complication and migration rates.

Results

The efficacy of SEMS in the management of post-bariatric leaks is well documented. Pooled analyses demonstrate overall success rates ranging from 72% to 93%. Success is significantly higher in acute and early leaks (less than 6 weeks post-surgery), whereas chronic leaks

respond poorly, with markedly lower closure rates. Closure rates appear similar between sleeve gastrectomy (92%) and Roux-en-Y gastric bypass (96%). Complications remain a concern. Migration occurs in 15–32% of cases, particularly with bariatric-specific stents. Adverse events include abdominal pain, reflux, nausea, ulceration, bleeding, and stricture formation (8–13% with bariatric SEMS). Strategies to reduce migration include endoscopic fixation with suturing or clips, or the use of partially covered SEMS. When compared with alternative therapies, SEMS show strengths and limitations. Endoscopic vacuum therapy (EVT) and endoscopic internal drainage (EID) have demonstrated high success rates in chronic leaks and fistulas, often outperforming SEMS in these contexts. Over-the-scope clips (OTSC) are effective for small defects or in combination with SEMS. Cost-effectiveness analyses indicate that double-pigtail stents or EID may provide similar closure rates at lower costs. Combination approaches, such as SEMS with double-pigtail stents or SEMS with OTSC, appear to improve overall outcomes and reduce recurrence.

Discussion

The role of SEMS in the management of post-bariatric leaks is evolving. SEMS provide immediate coverage of large defects and allow for early resumption of enteral nutrition, which is critical in unstable or malnourished patients. Their utility is greatest in acute settings, where rapid control of sepsis and leak closure is required. Nevertheless, limitations exist. Migration rates remain high despite design improvements, and stent intolerance frequently necessitates early removal. Customized bariatric stents, although anatomically suitable, may paradoxically increase migration and stricture rates. Recent advances such as EVT and EID have broadened the therapeutic landscape, particularly for subacute and chronic leaks, where SEMS is less effective. Increasingly, a multimodal strategy is adopted, combining SEMS with internal drainage or clips to enhance success and minimize complications. Importantly, management should be individualized, considering defect size, chronicity, patient condition, and institutional expertise. Endoscopic treatment should occur within a multidisciplinary framework, involving surgeons, interventional radiologists, and intensivists.

Conclusion

SEMS remains an important tool in the endoscopic treatment of post-bariatric leaks, particularly in acute and early cases. They provide rapid control, facilitate nutrition, and can be combined with complementary therapies. However, their role in chronic or complex leaks is diminishing in favor of EVT, EID, or multimodal approaches. The optimal strategy is stepwise, patient-centered, and guided by a multidisciplinary team [1-9] (Figures 1- 5).

Figure 1: High-output leak following sleeve gastrectomy, documented by contrast study. Observation by Dr. Gabriele De Sena. Such leaks typically occur near the esophagogastric junction (e.g.j.) and the angle of His.

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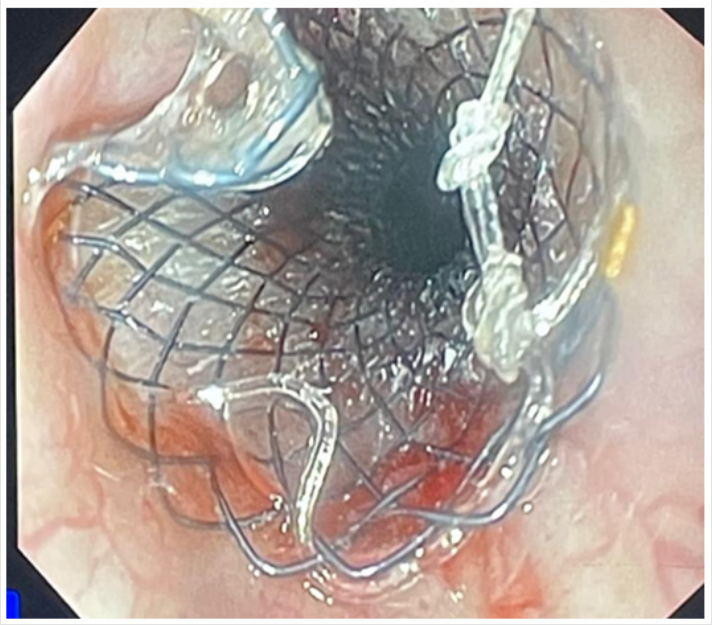

Figure 2: Endoscopic view of self-expanding metal stent (SEMS) positioned for the management of a post-bariatric leak.

Figure 3: Self-expanding metal stent (SEMS) fixed with two endoclips to reduce the risk of migration.

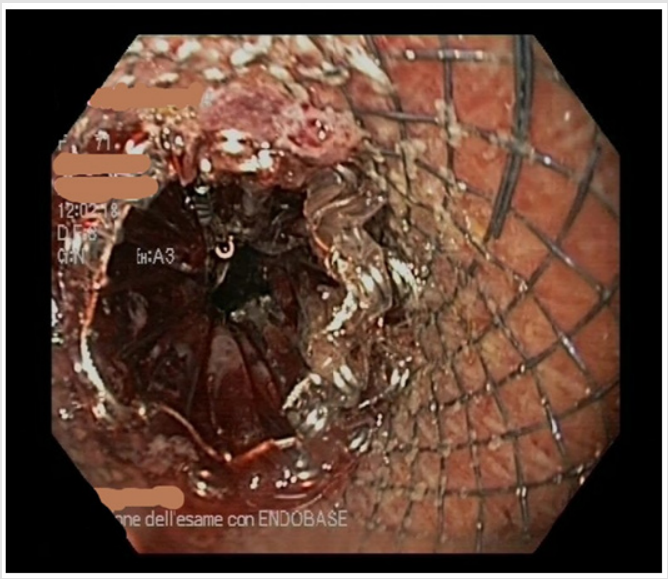

Figure 4: Endoscopic view of a partially covered self-expanding metal stent (PCSEMS) placed for the management of a post-bariatric leak.

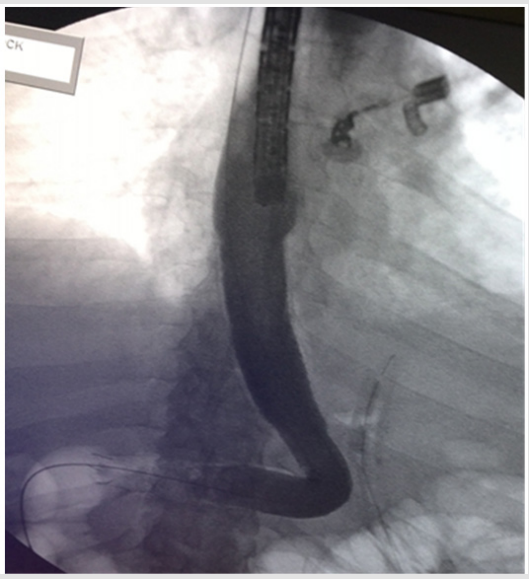

Figure 5: Radiographic contrast study showing the placement of a bariatric mega stent for the management of a postoperative leak.

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ISSN: 2574-1241

DOI: 10.26717/BJSTR.2025.63.009887

De Sena Gabriele. Biomed J Sci & Tech Res

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