INSUFFICIENZA ANASTOMOTICA MULTIPLA TRATTATA CON DOPPIA ENDO-SPONGE POST RESEZIONE RETTALE

Marc-Emilio El-Nachef, Alfred Kuhrmeier, Davide Lanza

Ricevuto: 02.12.2025,
revisionato: 02.02.2026
accettato: 27.02.2026

ISSN print: 1421-1009
ISSN online: 3042-6138

DOI: 10.63648/21e14b75

Riassunto
Descriviamo un caso di doppia insufficienza anastomotica in seguito a resezione rettale anteriore bassa per un adenocarcinoma rettale di basso grado diagnosticato durante una colonscopia di routine. Il difetto anastomotico era complesso, caratterizzato da due soluzioni di continuità coesistenti situate sulla stessa anastomosi, con una circonferenza aperta che superava i 300°. Furono posizionati due Endo-SPONGE® mediante rettosigmoidoscopia e sostituiti ogni 3-4 giorni per 40 giorni. Questo approccio ha portato alla guarigione completa di entrambe le soluzioni di continuità anastomotiche, risultando essere uno dei primi casi documentati di chiusura completa di grandi perdite anastomotiche doppie e circonferenziali, gestite con successo esclusivamente mediante terapia Endo-SPONGE®.

Introduction

With an incidence of 10-13% after anterior rectal resection [1], anastomotic leakage is a devastating complication both surgically and oncologically leading to increased morbidity, increasing times and costs of hospitalization and worsening prognosis in short and in long term outcomes [2]. Its management is complex and patient-specific; stable patients are normally treated nonoperatively with antibiotics, bowel rest, or percutaneous drainage, while unstable patients or non-responders to the conservative approach are treated operatively including drainage with proximal diversion, anastomotic resection with end-stoma creation, or reanastomosis with proximal diversion [3]. Colorectal stenting, vacuum-assisted rectal drainage, and endoscopic clipping are among the newer techniques used [3]. The Endo-SPONGE® is an endoluminal vacuum therapy device where a sponge is inserted into the leaking cavity using a flexible endoscope and a drainage tube is connected to the sponge at one end with a drainage bottle at the other end [4].

Case report

The patient is a 66-year-old male, with a history of grade I obesity, type II diabetes and a patent foramen ovale, who was diagnosed with low-grade rectal adenocarcinoma (G2) 12cm from the anal margin during a routine colonoscopy. The initial staging was a T4N+ cM0. After the multidisciplinary tumor board, the patient underwent neoadjuvant therapy with 6 cycles of FOLFOXIRI followed by radiotherapy and chemotherapy with Capecitabin, resulting in a partial remission and of the tumoral mass. The patient subsequently underwent low anterior rectal resection with a termino-terminal anastomosis and protective ileostomy.

Initially, the operation had a positive outcome with early mobilization, patient refeeding from the same day of the operation, a working ileostomy and good pain management. The CRP values were steadily decreasing from the 3rd postoperative day. However, on the 8th post operative day, the CRP values began rising again above 100mg/L, so the patient was put on broad-spectrum antibiotics which was continued for a total of 14 days and underwent a CT-scan which revealed a peri-anastomotic abscess near the lower third of the rectum.

The following day, the operating surgeon conducted an ano-rectoscopy and found a clear anastomotic leakage 5 cm from the anal margin. The gastroenterologist then conducted an endoscopy identifying two large opposing defects of the anastomosis, corresponding to contralateral anastomotic leakages that together involved approximately 300° of the anastomotic circumference. Only two small segments of the anastomosis of about 30° each were preserved and covered by intact mucosa between both horseshoeshaped leaks. Purulent material was draining from both anastomotic cavities, confirming the presence of an active infection and communication with the presacral space (**Figure 1**).

Normally leakages of this size and severity would need a surgical revision, but considering the important comorbidities of the patient, the operating surgeon and gastroenterologist after a multidisciplinary meeting decided for a less invasive approach and opted for treatment with a dual Endo-SPONGE®, one for each leak, at a pre-set suction pressure of -100mmHg for both sponges (Fig. 1). This decision was made to increase the chances of a full healing and to avoid the risk of having a Hartmann pouch for life, when a purely surgical 4 approach would be indicated in an otherwise healthy patient. A

A cura dell'Istituto
di medicina
di famiglia USI

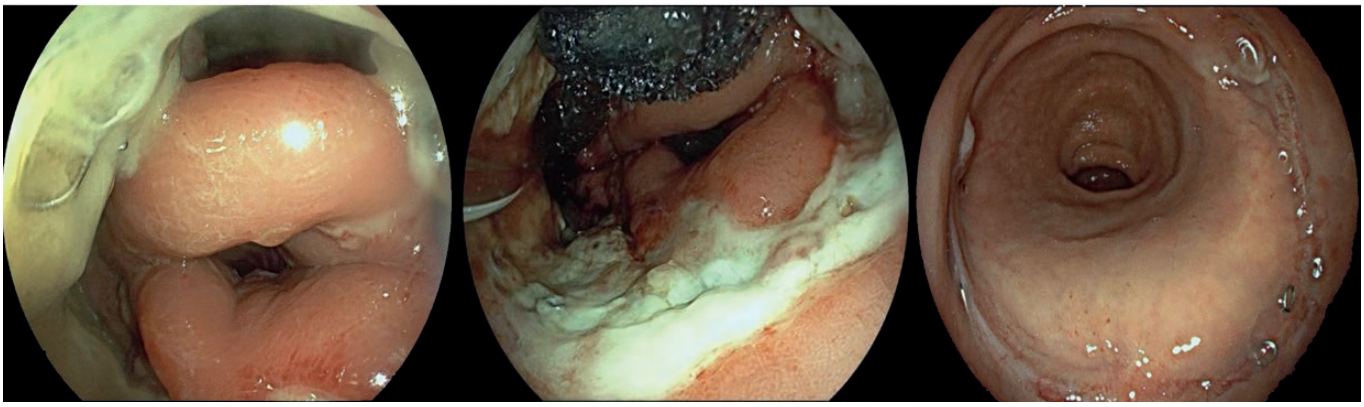

Fig. 1: Recto-sigmoidoscopy pictures showing the evolution of the anastomotic leaks until full healing after treatment with Endo-Sponge®. **Left:** Purulent material draining from both anastomotic cavities. **Center:** Placement of the Endo-SPONGEs®. **Right:** Complete healing of the anastomotic leaks

drainage was not considered in this patient due to the sheer size of the leakage and would not have been feasible nor beneficial.

The Endo-SPONGEs® were replaced every 3 to 4 days for a total of 10 changes during the span of 40 days with subsequent healing of both the anastomotic leaks. This was feasible thanks to the strong patient compliance, commitment and availability for the treatment offered. The duration of this endoscopic therapy would have high costs, comparable if not more expensive than surgical reintervention. During the last rectosigmoidoscopy, the dual Endo-SPONGEs® were removed, showing a complete healing of the anastomotic leaks (Fig. 1). The patient's ileostomy remained functional throughout the hospitalization, and the patient was discharged in good condition. Approximately five months after the discharge, the patient underwent closure of the protective ileostomy, which proceeded without complications.

Discussion

Early anastomotic leakage occurs within 30 days of the operation, with a median of 7 days in one study, and those occurring within 5 days are classified as very-early anastomotic leakage and are often severe and requiring surgery [5]. CT scan with rectal contrast can be very useful in evaluating the colorectal anastomosis, and additional diagnostic investigations such as rigid proctoscopy/anoscopy or endoscopy may be needed to determine the exact location and extent of the anastomotic dehiscence [6].

Management of anastomotic leaks has been predominantly based on the surgeon's own personal experience because little evidence exists to help guide care planning. Usually, patients with less severe leakages may be treated conservatively and without operation, but those who do not improve with these measures and those who have sepsis and peritonitis must undergo surgery with either exteriorization of the leaking anastomosis or resection of the anastomosis with the creation of an end stoma and Hartmann pouch or mucus fistula [7].

One meta-analysis found Endo-SPONGE® therapy to be a minimally invasive, safe, and effective treatment modality for patients with a significant colorectal leak without any generalized peritonitis because of its high clinical and technical success rates and a low rate of adverse events [4]. Another study found that the use of Endo-SPONGE® is highly effective in treating anastomotic leakage without increasing cost compared to conventional treatment [8]. A similar study showed treatment using dual EndoSPONGEs® with a mean of 16 sponge replacements until full healing [9]. A case series of 25 patients showed a median of 9 sessions of sponge changes and 4 weeks of treatment for patients with a single Endo-SPONGE® application [10], a comparable treatment length and number of changes as to our case report, but with ours being significantly more challenging.

Our case report does not confirm previous studies, but rather is in line with previous publications that treatment for colorectal anastomotic leakages, performed in suitable patients, represents a successful and safe approach even for large leakages.

Anastomic leaks treated with dual endo-sponges following rectal cancer surgery

Abstract

We describe a case of dual anastomotic leaks following a lower anterior rectal resection for a low-grade

rectal adenocarcinoma diagnosed during a routine colonoscopy. The anastomotic defect was complex, characterized by two coexisting leaks located on the same anastomosis, resulting in an open circumference exceeding 300°. Dual Endo-SPONGEs® were positioned via recto-sigmoidoscopy and replaced every 3 to 4 days for 40 days. This approach achieved complete healing of both anastomotic leaks, being one of the first documented cases of complete closure of very large, dual, circumferential anastomotic leaks successfully managed with endoluminal vacuum therapy alone.

Keywords: Endo-SPONGE®, dual anastomotic leakage, rectal cancer, anterior rectal resection, case report

References

1. Paun BC, Cassie S, MacLean AR, Dixon E, Buie WD. Postoperative complications following surgery for rectal cancer. Ann Surg. 2010;251(5):807-818.
2. Chiarello MM, Fransvea P, Cariati M, Adams NJ, Bianchi V, Brisinda G. Anastomotic leakage in colorectal cancer surgery. Surg Oncol. 2022;40:101708.
3. Hedrick TL, Kane W. Management of acute anastomotic leaks. Clin Colon Rectal Surg. 2021 ;34(6):400-405.
4. Dhindsa BS, Naga Y, Saghir SM, Daid SGS, Chandan S, Mashiana H, Dhaliwal A, Sidhu A, Sayles H, Ramai D, Bhat I, Singh S, McDonough S, Adler DG. Endo-sponge in management of anastomotic colorectal leaks: a systematic review and meta-analysis. Endosc Int Open. 2021;9(9):E1342-E1349.
5. Li YW, Lian P, Huang B, Zheng HT, Wang MH, Gu WL, Li XX, Xu Y, Cai SJ. Very early colorectal anastomotic leakage within 5 post-operative days: a more severe subtype needs relaparatomy. Sci Rep. 2017 ;7:39936
6. Thomas MS, Margolin DA. Management of colorectal anastomotic leak. Clin Colon Rectal Surg. 2016;29(2):138-44.
7. Tsai YY, Chen WT. Management of anastomotic leakage after rectal surgery: a review article. J Gastrointest Oncol. 2019 Dec;10(6):1229-1237.
8. Gardenbroek TJ, Musters GD, Buskens CJ, Ponsioen CY, D'Haens GR, Dijkgraaf MG, Tanis PJ, Bemelman WA. Early reconstruction of the leaking ileal pouch-anal anastomosis: a novel solution to an old problem. Colorectal Dis. 2015;17(5):426-432.
9. Mussetto A, Arena R, Buzzi A, Fuccio L, Dari S, Brancaccio ML, Triossi O. Long-term efficacy of vacuum-assisted therapy (Endo-SPONGE®) in large anastomotic leakages following anterior rectal resection. Ann Gastroenterol. 2017;30(6):649-653.
10. Strangio G, Zullo A, Ferrara EC, Anderloni A, Carlino A, Jovani M, Ciscato C, Hassan C, Repici A. Endo-sponge therapy for management of anastomotic leakages after colorectal surgery: A case series and review of literature. Dig Liver Dis. 2015;47(6):465-469.

Affliations

Dr. med Marc-Emilio El-Nachef
Gruppo Ospedaliero Moncucco - Clinica Moncucco,
Department of Internal Medicine
Lugano 6900, Switzerland

Dr. med Alfred Kuhrmeier
Gruppo Ospedaliero Moncucco - Clinica Moncucco,
Department of Visceral Surgery
Lugano 6900, Switzerland

Dr. med Davide Lanza
Gruppo Ospedaliero Moncucco - Clinica Moncucco,
Department of Gastroenterology
Lugano 6900, Switzerland

Corresponding Author: Marc-Emilio El-Nachef,
e-mail: marc-emilio.el-nachef@moncucco.ch

Declarations

- Funding: The authors received no funding for this publication.
- Conflict of Interest: The authors declare no conflicts of interest.
- Informed Consent: Informed consent was obtained from the patient for inclusion in this report.
- Compliance with ethical standards: The corresponding author declares that the report submitted to Tribuna Medica Ticinese was prepared in accordance with applicable norms and international recommendations.
- Acknowledgements: We thank the Clinical Research Unit at Clinica Moncucco - Vittoria Viganò, Anastasia Cortese, and Alessandra Franzetti-Pellanda for their support.

Legenda:

Fig. 1 Recto-sigmoidoscopy showing the evolution of the anastomotic leaks until full healing after treatment with Endo-Sponge®. Left: Purulent material draining from both anastomotic cavities. Center: Placement of the Endo-SPONGEs®. Right: Complete healing of the anastomotic leaks