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Recanalization of anastomotic occlusion following rectal cancer surgery using a rendezvous endoscopic technique with transillumination: A case report

Jun Chi, Guang-Yu Luo, Hong-Bo Shan, Jun-Zhong Lin, Xiao-Jun Wu, Jian-Jun Li

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Abstract

BACKGROUND

Colorectal anastomotic occlusion is a serious complication of colorectal cancer surgery. Although several treatment strategies have been proposed, the management of anastomotic occlusion remains challenging. In this report, we present a case of anastomotic occlusion recanalization performed using a novel technique involving two endoscopes, one for radial incision and the other serving as a guide light. This novel technique offers significant advantages in terms of operational feasibility, reduced invasiveness, rapid recovery, and shortened hospital stay.

CASE SUMMARY

A 37-year-old man underwent low anterior resection and prophylactic double-lumen ileostomy for rectal cancer in June, 2023. Two months later, complete anastomotic occlusion was observed on colonoscopy. Therefore, we developed a novel atresia recanalization technique. Two endoscopes were placed, one through the colonic anastomosis and the other through the anus. A radial incision was

successfully made from the colonic side, guided by the light of the endoscope from the anal side. Atresia recanalization was performed within 20 minutes. Three weeks after recanalization, colonoscopy revealed that the diameter of the colorectal anastomosis was approximately 16 mm and the patient therefore underwent stoma reversal in September. During the follow-up period of approximately one year, the patient remained well and no stenosis or obstruction symptoms were observed.

CONCLUSION

Endoscopic atresia recanalization of colorectal anastomotic occlusion assisted by an opposing light source is safe and effective.

Key Words: Endoscopy; Atresia recanalization; Anastomotic occlusion; Light source; Case report

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Core Tip: Colorectal anastomotic occlusion is a rare but serious complication of colorectal cancer surgery. Because a guidewire cannot pass through the occluded segment, the traditional endoscopic approaches of bougie or balloon dilation are difficult to implement. Previously reported endoscopic techniques have been performed under endoscopic ultrasound or fluoroscopic guidance. Here, we report a case of anastomotic occlusion that was successfully recanalized using a combined antegrade-retrograde endoscopic rendezvous technique; one endoscope was used for radial incision, the other served as a guide light. This simplified procedure is safe, rapid, and, as complicated instruments are not required, cost-effective.

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INTRODUCTION

Benign anastomotic stricture, a late-occurring complication of colorectal cancer surgery, can result in difficulty defecating, abdominal pain, bloating, or even acute intestinal obstruction[1,2]. Although this adverse event is not life threatening, it can impact patient quality of life. The reported incidence of postoperative anastomotic strictures varies widely and is typically between 3% and 30%[3]. Endoscopic bougie and balloon dilation are first-line treatments for symptomatic anastomotic stricture[4,5], and endoscopic stricturotomy has also been proven safe and effective[6,7].

Although rare, complete colorectal anastomotic occlusion does occur[8-10], and is typically diagnosed using X-rays, computed tomography scans, or endoscopy. Further surgery is feasible but is associated with a higher postoperative morbidity rate[11]. The traditional endoscopic approaches of bougie or balloon dilation are technically difficult in cases of complete occlusion because of the inability of the guidewire to pass through the obstructed segment. Recently, a series of modified minimally invasive treatments have been successfully implemented in certain patients[12-15]. However, endoscopic treatment remains the preferred option. Herein, we report a case of anastomotic occlusion due to radial rectal resection that was successfully recanalized using a combined antegrade-retrograde endoscopic rendezvous technique (with one endoscope for radial incision and the other serving as a guide light) at the Sun Yat-Sen University Cancer Center.

CASE PRESENTATION

Chief complaints

A 37-year-old man presented at the endoscopy department of our hospital in August 2023 with colorectal anastomotic occlusion diagnosed by colonoscopy three days previously.

History of present illness

The patient was diagnosed with rectal cancer at our hospital in March 2023. After neoadjuvant chemotherapy, the patient underwent laparoscopic low anterior rectal resection combined with prophylactic double-lumen ileostomy in June 2023. The patient recovered well without any clinical signs of anastomotic leakage or bleeding. On August 8, 2023 (three days prior to presentation), the patient returned to the hospital for ileostomy reversal, at which time preoperative colonoscopy revealed complete occlusion of the anastomosis.

History of past illness

The patient had been taking medication for hepatitis B since 2003.

Personal and family history

No significant personal or family history was reported.

Physical examination

The patient was 169 cm in height and 64.8 kg in weight, with a body mass index of 22.7 kg/m² and recent weight loss of approximately 3 kg. His vital signs were as follows: Consciousness, clear; blood pressure, 112/83 mmHg; heart rate, 79 beats/min; body temperature, 36.5 °C; and respiratory rate, 20 breaths/min. No abdominal distension was observed. Abdominal sounds indicated almost normal peristalsis. Scars from the laparoscopic rectal surgery were visible in the abdomen. The stoma, located in the lower right part of the abdomen, was not red or swollen. Rebound tenderness was not observed. With an undetectable anastomosis and palpable anastomotic staples, digital anal examination revealed a blind cavity at the rectal end.

Laboratory examinations

No significant abnormalities were detected in routine blood analyses, which showed the following: White blood cell count, 5.39×10^9 cells/L; red blood cell count, 4.7×10^{12} cells/L; hemoglobin level, 144 g/L; platelet count, 151×10^9 cells/L; prothrombin time, 10.8 s; activated partial thromboplastin time, 25.6 s; total bilirubin level, 13.3 µmol/L; aspartate aminotransferase level, 30.2 U/L; alanine aminotransferase level, 44.9 U/L; alkaline phosphatase level, 68.5 U/L; blood urea nitrogen level, 22.0 mg/dL; Na⁺/K⁺/Cl⁻ levels, 144.6/3.82/104 mmol/L; and C-reactive protein level, 0.8 mg/dL.

Imaging examinations

Colonoscopy revealed that the anastomosis was 3 cm from the anal verge and was completely obstructed by regenerated scar tissue (Figure 1A).

FINAL DIAGNOSIS

A final diagnosis of colorectal anastomotic occlusion was made based on digital anal examination and colonoscopy findings.

TREATMENT

The novel atresia recanalization technique was performed on August 11, 2023. First, an antegrade endoscope (GIF-Q260J; Olympus Corporation, Tokyo, Japan) was advanced from the terminal ileum to the blind end of the anastomotic stoma, and then a retrograde endoscope (PCF-Q260AZI; Olympus Corporation) was advanced to the anastomotic occlusion through the anus. A 1% methylene blue solution injected into the lumen from the colon side did not exit through the rectum, further confirming anastomotic atresia (Figure 1B and C). The light from the retrograde endoscope easily traversed the obstructing membrane. Under transillumination, the blade of an iKnife (AMH-EK-O-2.4× 1800 (4) -N; Anrei Medical Co., Ltd., Hangzhou, China) was inserted precisely into the expected lumen. A small incision was successfully made from the colon side to the rectum. The incision was dilated using the antegrade endoscope until passage of the endoscopic probe was possible. The entire procedure (Figure 2 and Video) lasted less than 20 minutes, and no related adverse events (such as perforation or bleeding) were observed.

OUTCOME AND FOLLOW-UP

Approximately three weeks later (August 31, 2023), the patient underwent endoscopic re-examination. The obstructed colorectal anastomosis had been recanalized and was approximately 16 mm in diameter. A cap-assisted endoscope (CF-H290I; Olympus Corporation) could pass smoothly through and no anastomotic leakage was observed (Figure 3). On September 7, 2023, air and barium double-contrast radiography showed barium passing through the colorectal anastomosis with no fistula or stenosis observed (Figure 4). On September 11, 2023, the patient underwent stoma reversal. During the follow-up period, normal transanal defecation was restored. In the one year since the operation, no symptoms of anastomotic restenosis, such as abdominal pain, bloating, or difficulty defecating, have been observed. The patient continues to be followed up.

DISCUSSION

Anastomotic stricture, a relatively common complication of colorectal cancer surgery, is defined as the inability of a rigid

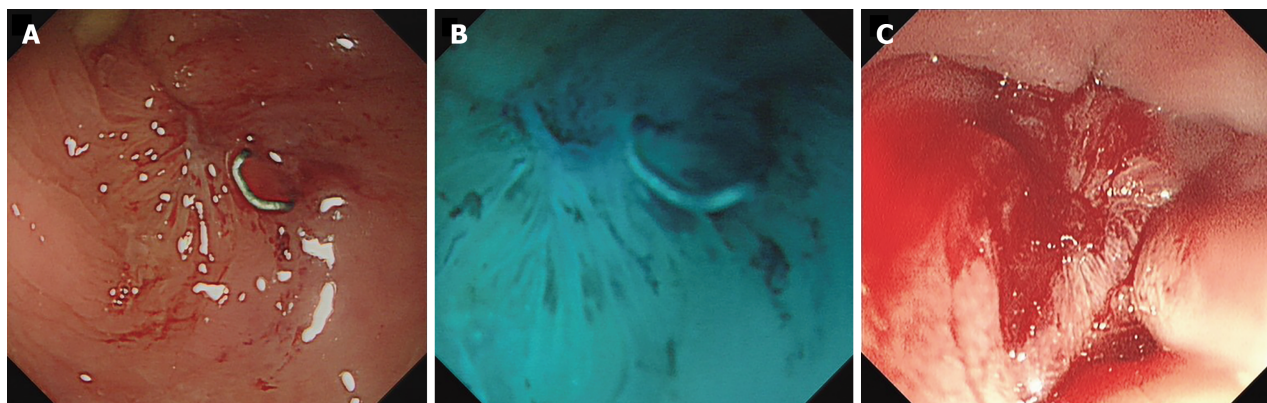


Figure 1 Complete occlusion of the colorectal anastomosis. A: Endoscopic view from the colonic side; B: 1% methylene blue solution was used to confirm the obstruction; C: Endoscopic view from the rectal side.

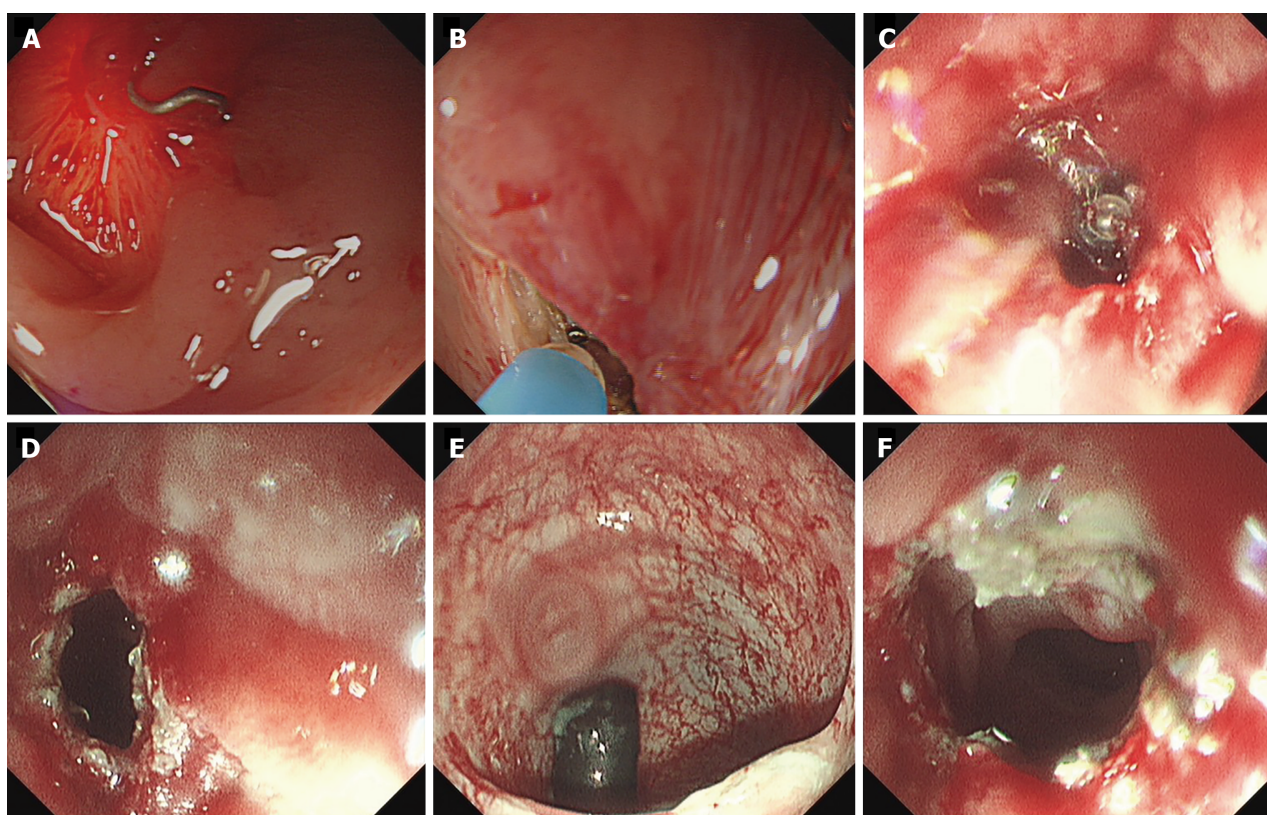


Figure 2 Details of endoscopic treatment. A: Transillumination across the occlusive anastomosis; B: A small incision was made with an iKnife; C: Endoscopic view from the rectal side during the incision; D: Radial incision was performed successfully from the colonic side to the rectum; E: Endoscopic image showing dilation of the incision by the opposing endoscope; F: Recanalization of the occluded anastomosis.

proctoscope to pass through the anastomosis[16]. The risk factors for this complication remain to be identified, although previous studies have associated tissue ischemia, inflammation, neoadjuvant radiotherapy, low-lying anastomotic leakage, diverting stomas, and obesity with strictures[17-21].

Various stricture management strategies are available. Asymptomatic strictures generally do not require treatment. The majority of strictures are membranous and these can be readily managed using digital dilation, endoscopic intervention, or minimally invasive transanal surgery[22,23]. Different endoscopic procedures, including bougie and balloon dilation[4,24], self-expanding metal stenting[15,25,26], and radial incision with or without dilation[14,27], have been used to treat anastomotic strictures. Sometimes, these therapies involve step-by-step procedures rather than being performed in isolation, especially in complicated cases.

Among the aforementioned techniques, the high success rate and low complication rate of endoscopic therapy make this the first choice of treatment for patients with anastomotic stricture[28]. However, conventional dilation is impossible to achieve in cases of complete anastomotic occlusion because the guidewire cannot pass through the stricture. An alternative is electrocautery incision and cutting[14]. However, occlusions obscure the position of the lumen, increasing

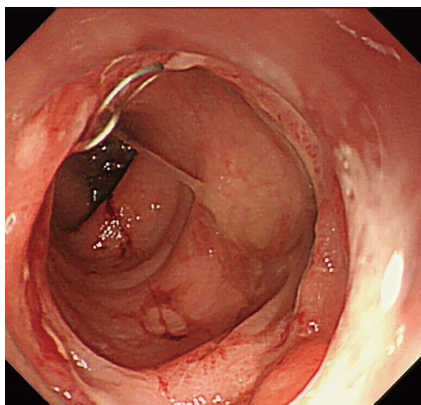


Figure 3 Endoscopy three weeks after treatment. No anastomotic strictures or leakage were observed.

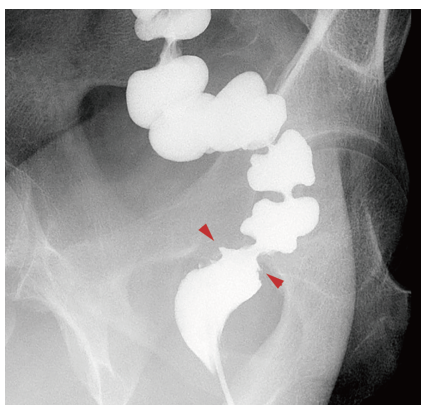


Figure 4 Air and barium double-contrast radiography. Luminal continuity was observed to be re-established (arrows show the anastomosis).

the risk of perforation. A method of precisely identifying the location of the lumen is therefore required.

In 2006, Kaushik *et al*[12] reported an endoscopic rendezvous technique using two endoscopes, one advanced by an antegrade approach through the loop ileostomy and another advanced by a retrograde approach through the anus. When the two endoscopes met, a 19-gauge puncture needle was advanced through the fibrous membrane, allowing passage of a guidewire and subsequent successful balloon dilation. Similar techniques involving guidance by endoscopic ultrasound or fluoroscopy have also been proposed. Under fluoroscopic guidance, Bequis *et al*[10] performed rigid rectoscopy through the anus to allow puncture. A guidewire was then passed through the needle to guide balloon dilation in a retrograde manner using a flexible endoscope. Other studies[13,29,30] have reported the use of an endoscope advanced through the ileostomy to fill the colon with water or contrast dye, providing a target for endoscopic ultrasound-guided colo-colostomy with a lumen-apposing metal stent from the rectum side. As previously reported, rendezvous techniques require complicated replacement procedures performed *via* the endoscopic working channel, increasing surgical complexity and duration.

Herein, we describe a simpler and more feasible method for treating anastomotic occlusion that combines radial incision with an endoscopic rendezvous technique. The light from the endoscope on the opposite side of the occlusion was used to determine the exact position of the lumen. An incision was then made from the oral side towards the anal side to reduce the risk of perforation. The advantage of this procedure is that it is safe and quick, taking less than 20 minutes. As it does not require complicated instruments, the use of this procedure could also reduce the economic burden on patients.

CONCLUSION

Radial incision using the endoscopic rendezvous technique and an endoscopic probe as a guide light is a safe and effective treatment option. Compared with traditional methods, this novel technique is less invasive, enables swifter recovery, and results in a shorter hospital stay. We believe that this technique should be considered in all patients with complete colorectal anastomotic occlusion.

FOOTNOTES

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REFERENCES

- Hanna DN, Hawkins AT. Colorectal: Management of Postoperative Complications in Colorectal Surgery. *Surg Clin North Am* 2021; **101**: 717-729 [PMID: 34537139 DOI: 10.1016/j.suc.2021.05.016]
- Kraenzler A, Maggiori L, Pittet O, Alyami MS, Prost A, la Denise J, Panis Y. Anastomotic stenosis after coloanal, colorectal and ileoanal anastomosis: what is the best management? *Colorectal Dis* 2017; **19**: O90-O96 [PMID: 27996184 DOI: 10.1111/codi.13587]
- McKee R, Pricolo VE. Stapled revision of complete colorectal anastomotic obstruction. *Am J Surg* 2008; **195**: 526-527 [PMID: 18304500 DOI: 10.1016/j.amjsurg.2007.02.030]
- Chan RH, Lin SC, Chen PC, Lin WT, Wu CH, Lee JC, Lin BW. Management of colorectal anastomotic stricture with multidiameter balloon dilation: long-term results. *Tech Coloproctol* 2020; **24**: 1271-1276 [PMID: 32757156 DOI: 10.1007/s10151-020-02318-2]
- Mathew J, Kazi M, Sukumar V, Thakur S, Desouza A, Saklani A. Factors predicting successful resolution and long-term outcomes of benign anastomotic strictures following rectal cancer surgery. *Eur J Surg Oncol* 2023; **49**: 1307-1313 [PMID: 36918333 DOI: 10.1016/j.ejso.2023.02.012]
- Lin D, Liu W, Chen Z, He X, Zheng Z, Lan P, Hu J. Endoscopic Stricturotomy for Patients With Postoperative Benign Anastomotic Stricture for Colorectal Cancer. *Dis Colon Rectum* 2022; **65**: 590-598 [PMID: 34775404 DOI: 10.1097/DCR.0000000000001944]
- Brandimarte G, Tursi A, Gasbarrini G. Endoscopic treatment of benign anastomotic colorectal stenosis with electrocautery. *Endoscopy* 2000; **32**: 461-463 [PMID: 10863912 DOI: 10.1055/s-2000-651]
- Hu C, Zhang H, Yang L, Zhao J, Cai Q, Jiang L, Meng L, Wang Z, Wen Z, Wang Y, Yu Z. Anastomotic occlusion after laparoscopic low anterior rectal resection: a rare case study and literature review. *World J Surg Oncol* 2022; **20**: 145 [PMID: 35524309 DOI: 10.1186/s12957-022-02610-5]
- Lu G, Li J, Ren M, Ma F, Sun X, Lv Y, He S. Endoscopy-assisted magnetic compression anastomosis for rectal anastomotic atresia. *Endoscopy* 2021; **53**: E437-E439 [PMID: 33506462 DOI: 10.1055/a-1322-1899]
- Bequis A, Gonzalez M, Fernandez Aramburu J, Huespe P, Duran S, Hyon SH, Vaccaro CA. Fluoroscopy and endoscopy-guided transanastomotic rendezvous: a novel technique for recanalization of a completely obstructed colorectal anastomosis. *Int J Colorectal Dis* 2021; **36**: 627-631 [PMID: 33057895 DOI: 10.1007/s00384-020-03781-x]
- Lefevre JH, Bretagnol F, Maggiori L, Ferron M, Alves A, Panis Y. Redo surgery for failed colorectal or coloanal anastomosis: a valuable surgical challenge. *Surgery* 2011; **149**: 65-71 [PMID: 20451231 DOI: 10.1016/j.surg.2010.03.017]
- Kaushik N, Rubin J, McGrath K. Treatment of benign complete colonic anastomotic obstruction by using an endoscopic rendezvous technique. *Gastrointest Endosc* 2006; **63**: 727-730 [PMID: 16564891 DOI: 10.1016/j.gie.2005.10.022]
- Gornals JB, Albines G, Trenti L, Mast R, Frago R. EUS-guided recanalization of a complete rectal anastomotic stenosis by use of a lumen-apposing metal stent. *Gastrointest Endosc* 2015; **82**: 752 [PMID: 26071063 DOI: 10.1016/j.gie.2015.05.003]
- Yuan X, Liu W, Ye L, Wu M, Hu B. Combination of endoscopic incision and balloon dilation for treatment of a completely obstructed anastomotic stenosis following colorectal resection: A case report. *Medicine (Baltimore)* 2019; **98**: e16292 [PMID: 31261603 DOI: 10.1097/MD.00000000000016292]
- Dray X, Leenhardt R, Chafai N, Guilloux A, Camus M, Chaput U. Recanalization of a complete colorectal anastomotic stenosis using a lumen-apposing metal stent (with video). *Clin Res Hepatol Gastroenterol* 2023; **47**: 102092 [PMID: 36740044 DOI: 10.1016/j.clinre.2023.102092]
- Bannura GC, Cumsille MA, Barrera AE, Contreras JP, Melo CL, Soto DC. Predictive factors of stenosis after stapled colorectal anastomosis: prospective analysis of 179 consecutive patients. *World J Surg* 2004; **28**: 921-925 [PMID: 15593468 DOI: 10.1007/s00268-004-7375-7]

- 17 **Surek A**, Donmez T, Gemici E, Dural AC, Akarsu C, Kaya A, Ferahman S, Bozkurt MA, Karabulut M, Alis H. Risk factors affecting benign anastomotic stricture in anterior and low anterior resections for colorectal cancer: a single-center retrospective cohort study. *Surg Endosc* 2023; **37**: 5246-5255 [PMID: [36964291](#) DOI: [10.1007/s00464-023-10002-3](#)]
- 18 **Picazo-Ferrera K**, Jaurrieta-Rico C, Manzano-Robleda M, Alonso-Lárraga J, de la Mora-Levy J, Hernández-Guerrero A, Ramírez-Solis M. Risk factors and endoscopic treatment for anastomotic stricture after resection in patients with colorectal cancer. *Rev Gastroenterol Mex (Engl Ed)* 2021; **86**: 44-50 [PMID: [32386994](#) DOI: [10.1016/j.rgmx.2020.03.001](#)]
- 19 **Polese L**, Vecchiato M, Frigo AC, Sarzo G, Cadrobbi R, Rizzato R, Bressan A, Merigliano S. Risk factors for colorectal anastomotic stenoses and their impact on quality of life: what are the lessons to learn? *Colorectal Dis* 2012; **14**: e124-e128 [PMID: [21910814](#) DOI: [10.1111/j.1463-1318.2011.02819.x](#)]
- 20 **Cong J**, Zhang H, Chen C. Definition and grading of anastomotic stricture/stenosis following low anastomosis after total mesorectal excision: A single-center study. *Asian J Surg* 2023; **46**: 3722-3726 [PMID: [36967350](#) DOI: [10.1016/j.asjsur.2023.03.027](#)]
- 21 **Genser L**, Manceau G, Karoui M, Breton S, Brevart C, Rousseau G, Vaillant JC, Hannoun L. Postoperative and long-term outcomes after redo surgery for failed colorectal or coloanal anastomosis: retrospective analysis of 50 patients and review of the literature. *Dis Colon Rectum* 2013; **56**: 747-755 [PMID: [23652749](#) DOI: [10.1097/DCR.0b013e3182853c44](#)]
- 22 **Zhou W**, Xia L, Wang Z, Cao G, Chen L, Chen E, Zhang W, Song Z. Transanal Minimally Invasive Surgery for Rectal Anastomotic Stenosis After Colorectal Cancer Surgery. *Dis Colon Rectum* 2022; **65**: 1062-1068 [PMID: [35421009](#) DOI: [10.1097/DCR.0000000000002361](#)]
- 23 **Cheong JY**, Connelly TM, Duraes LC, Gorgun E. Endoscopic-Assisted Transanal Minimally Invasive Surgery to Restore Patency of a Benign Colorectal Anastomotic Stricture. *Dis Colon Rectum* 2023; **66**: e1129-e1130 [PMID: [37585278](#) DOI: [10.1097/DCR.0000000000002728](#)]
- 24 **Acar T**, Aslan F, Acar N, Kamer E, Ünsal B, Hacıyanlı M. Role of endoscopic interventions and electroincision in benign anastomotic strictures following colorectal surgery. *Turk J Gastroenterol* 2019; **30**: 673-679 [PMID: [31418410](#) DOI: [10.5152/tjg.2019.18673](#)]
- 25 **Lamazza A**, Fiori E, De Masi E, Scoglio D, Sterpetti AV, Lezoche E. Self-expanding metal stents for treatment of anastomotic complications after colorectal resection. *Endoscopy* 2013; **45**: 493-495 [PMID: [23733731](#) DOI: [10.1055/s-0032-1326488](#)]
- 26 **Winkler J**, Peyret C, Barraud-Blanc M, Sage P, Comiti O, Heyries L, Grandval P. Recanalization of a complete colorectal anastomotic stenosis: an application of the Hot AXIOS stent. *Endoscopy* 2021; **53**: E126-E127 [PMID: [32757198](#) DOI: [10.1055/a-1215-9947](#)]
- 27 **Osera S**, Ikematsu H, Odagaki T, Oono Y, Yano T, Kobayashi A, Ito M, Saito N, Kaneko K. Efficacy and safety of endoscopic radial incision and cutting for benign severe anastomotic stricture after surgery for lower rectal cancer (with video). *Gastrointest Endosc* 2015; **81**: 770-773 [PMID: [25708767](#) DOI: [10.1016/j.gie.2014.11.011](#)]
- 28 **Suchan KL**, Muldner A, Manegold BC. Endoscopic treatment of postoperative colorectal anastomotic strictures. *Surg Endosc* 2003; **17**: 1110-1113 [PMID: [12728381](#) DOI: [10.1007/s00464-002-8926-3](#)]
- 29 **Poincloux L**, Pezet D, Rouquette O. Successful recanalization of complete anastomotic stricture using colorectal endoscopic ultrasound-guided rendezvous thus allowing stoma reversal: two cases. *Endoscopy* 2016; **48**: E353-E354 [PMID: [27852088](#) DOI: [10.1055/s-0042-118179](#)]
- 30 **Pang PBC**, Chouhan A, Joshi HMN, Wheeler JMD, Corbett GD, Varghese S, Godfrey EM. Endoscopic ultrasound-guided colo-colostomy for the treatment of benign complete occlusion of colonic anastomosis: a case series and description of technique. *Colorectal Dis* 2023; **25**: 1708-1712 [PMID: [37432059](#) DOI: [10.1111/codi.16649](#)]



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