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Non-surgical treatment of anastomotic leakage after rectal resection: a case report

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Abstract

Background. Colorectal anastomosis leakage remains a significant concern after colorectal surgery. Non-surgical dealing with anastomotic leak involves making complex decisions based on patient stability and radiographic findings.

Case presentation. A 59-year-old male patient diagnosed with stage I rectal cancer, which prompted rectal resection with the formation of a transverso-rectal anastomosis. On 4th postoperative day transanal hemorrhage and wound infection indicated the possible leakage of anastomosis, but no clear leakage was identified radiologically. The patient responded positively to antibiotic therapy, experiencing an improvement in his overall condition and was discharged on 14th postoperative day. However, 5 days later, the patient's health deteriorated, marked by symptoms such as high fever, nausea, and hypotension. Computer tomography revealed a substantial 12x3 cm pelvic abscess close to anastomosis and signs of ileus. Additional endoscopy unveiled a 5 mm width defect in the colorectal anastomosis. To solve this complication, a 7 Fr pig tail drain was strategically placed, and the patient was initiated on parenteral feeding to ensure proper nutrition. A follow-up colonoscopy in 1 week identified a confined cavity, prompting the insertion of two additional pig tail drains. With stable vitals and no signs of peritoneal involvement, the patient was eventually discharged. In following 3 months patient underwent endoscopic removal of pig tail drains, followed by full recovery.

Conclusions. This comprehensive case report underscores the critical need for physicians to remain vigilant in recognizing potential risk of colorectal anastomosis. In selected cases endoscopic techniques are suitable to manage anastomotic leakage.

Keywords: anastomotic leakage, rectal resection, cancer, endoscopic drainage.

Nechirurginis anastomozės nesandarumo gydymas po tiesiosios žarnos rezekcijos: atvejo analizė

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Santrauka

Įvadas. Kolorektalinės anastomozės nesandarumas kelia didelį susirūpinimą ir iššūkius po storosios žarnos rezekcinių operacijų. Sprendimas gydyti anastomozės nesandarumą apima daug faktorių, ypatingai atkreipiant dėmesį į paciento stabilumą ir radiologinių tyrimų duomenis.

Klinikinio atvejo pristatymas. Aprašomas klinikinis atvejis 59 metų vyriškos lyties paciento, kuriam diagnozuotas I stadijos tiesiosios žarnos vėžys, dėl kurio buvo atlikta tiesiosios žarnos rezekcija ir susiformuota pirminė anastomozė. 4-ą pooperacinę dieną transanalinis kraujavimas ir žaizdos infekcija leido įtarti galimą anastomozės nesandarumą, tačiau radiologiškai nesandarumo nenustatyta. Pacientas teigiamai reagavo į gydymą antibiotikais, bendra būklė pagerėjo ir buvo išrašytas namo 14-ą pooperacinę parą. Tačiau po 5 dienų paciento sveikata pablogėjo, atsirado aukšta temperatūra, pykinimas ir hipotenzija. Atlikus kompiuterinę tomografiją diagnozuotas 12x3 cm dubens abscesas, esantis šalia anastomozės su žarnų nepraeinamumo požymiais. Endoskopijos metu aptiktas 5 mm pločio kolorektalinės anastomozės defektas. Siekiant nechirurgiškai išgydyti šią komplikaciją, buvo įvestas 7 Fr „pig-tail“ tipo drenas, o pacientui paskirtas parenterinis maitinimas. Sekančios kolonoskopijos metu po 1 savaitės į uždara ertmę buvo įvesti du papildomi tokie drenai. Esant stabiliems gyvybiniais rodikliams, praėjus dinaminio žarnų nepraeinamumo simptomams, pacientas galiausiai buvo išrašytas namo. Po 3 mėnesių pacientui buvo atliktas endoskopinis įvestų drenų pašalinimas, po ko jis visiškai pasveiko.

Išvados. Būtinus maksimalus budrumas atpažįstant galimą kolorektalinės anastomozės nesandarumą ankstyvuojant pooperaciniu laikotarpiu. Selektiviais atvejais kolorektinės anastomozės nesandarumui gydyti tinka endoskopiniai metodai.

Raktažodžiai: anastomozės nesandarumas, žarnos rezekcija, vėžys, endoskopinis drenavimas.

1. Introduction

Surgical resection of the rectum is a prevailing therapeutic intervention for rectal cancer, with colorectal anastomosis often employed to eliminate the need for a stoma. Despite successful outcomes, the leakage of the colorectal anastomosis remains a significant concern due to its potential to increase postoperative morbidity and mortality rates. Dealing with anastomotic leak involves making complex decisions based on patient stability and radiographic findings. Swift identification of the leak and intervention are crucial in all cases to reduce the postoperative morbidity and prevent fatalities. Surgical management depends on the degree of intraabdominal contamination and inflammation which includes pelvic drainage with proximal diversion, anastomotic resection with end-stoma creation, or re-anastomosis with proximal diversion. Latest therapies, including colorectal stenting, vacuum-assisted rectal drainage, and endoscopic clipping, have also been described.

We report a surgically treated rectal cancer patient, who faced leakage of colorectal anastomosis after the elective surgery. In this case, the identified anastomotic defect was treated endoscopically by introducing three endoscopic “pig-tail” drains and supplementing the patient via parenteral nutrition.

2. Case Report

The subject of this report is a 59-year-old male patient diagnosed with stage I rectal cancer, which prompted rectal resection with full splenic flexure mobilisation and the formation of a transverso-rectal anastomosis 5 cm from dentate line. On 4th postoperative day transanal hemorrhage and wound infection indicated the possible leakage of anastomosis, necessitated a relaparotomy involving revision, but no clear leakage was identified. Relaparotomy was finished by pelvic lavage and drainage. The patient responded positively to

antibiotic therapy, experiencing an improvement in his overall condition and was discharged on 14th postoperative day. However, 5 days later, the patient's health deteriorated, marked by symptoms such as high fever, nausea, and hypotension. Diagnostic imaging, specifically computer tomography, revealed a substantial 12x3 cm pelvic abscess close to anastomosis and signs of ileus. Additional endoscopy unveiled a 5 mm width defect in the colorectal anastomosis (Fig. 1). Contrast rentgenoscopy through catheter inserted into the defect revealed 5x6 cm size abscess cavity close to anastomosis (Fig. 2). To solve this complication, a 7 Fr pig tail drain was strategically placed, and the patient was initiated on parenteral feeding to ensure proper nutrition (Fig. 3). Even though the patient's symptoms subsided, a follow-up colonoscopy in 1 week identified a confined cavity, prompting the insertion of two additional pig tail drains (Fig. 4). With stable vitals and no signs of peritoneal involvement, the patient underwent rehabilitation and was eventually discharged, with a structured follow-up plan in place. In following 3 months patient underwent endoscopic removal of pig tail drains, followed by full recovery.

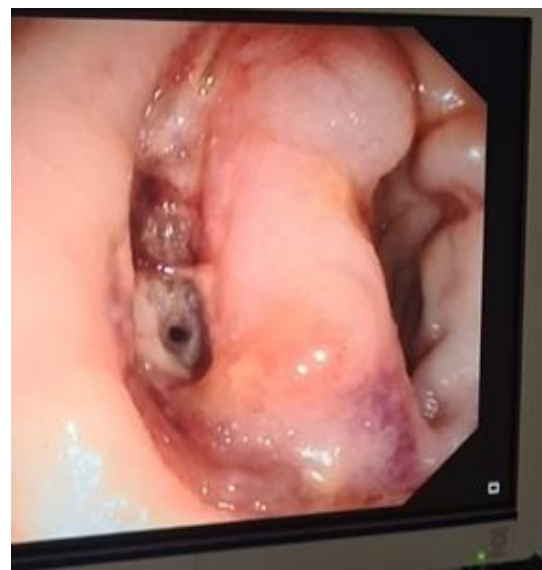


Fig. 1. Endoscopy unveiled a 5 mm width defect in the colorectal anastomosis.

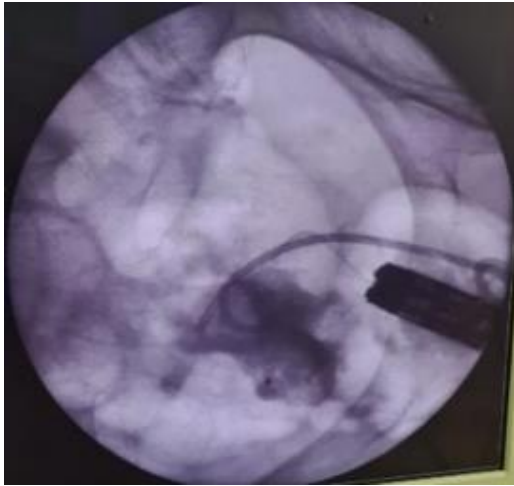


Fig. 2. Contrast rentgenoscopy through catheter inserted into the defect revealed 5x6 cm size abscess cavity close to anastomosis.



Fig. 3. 7 Fr pig tail drain was strategically placed through the defect into the cavity.



Fig. 4. Follow-up colonoscopy in 1 week identified a confined cavity, prompting the insertion of two additional pig tail drains.

3. Discussion

Despite tremendous developments in surgical procedures, diagnostics, and postoperative monitoring, anastomotic leak (AL) remains a major concern that has a significant impact on postoperative morbidity and death rates, as well as the overall cost of therapy. According to several research, the general prevalence ranges from 1 % to 39 %, while clinically severe AL occurs in 3-6 % of patients [1]. For a decade, various studies attempted to define the risk factors, early diagnosis, and treatment.

Even though many risk factors have been established, multicentric prospective research on anastomotic leak following colon resection are lacking [2]. Male gender, comorbidities, distance of tumor from anal verge, blood transfusions, ASA score, obesity, malnutrition, preoperative chemo-radiotherapy are well known independent risk factors for AL [3]. In several studies individual surgeon was identified as a significant risk factor for anastomotic leakage therefore strategies should be made to limit performance variability among surgeons [4]. Gut microbiota dysbiosis has been identified as a contributing factor to AL throughout the last decade, but the precise implications remain unknown [5]. More research is needed to determine the risk factors of anastomotic leakage.

Anastomotic leaking has an impact on the surgery's success, increases hospitalisation time and expenditures, and affects short- and long-term outcomes. AL encompasses a wide spectrum of clinical manifestations, from a radiological finding to peritonitis and sepsis with multiorgan failure [6]. Clinical signs include fever, discomfort, purulent discharge, indications of peritonitis, and cardiovascular symptoms [7]. Anastomotic leaks often develop after 5 to 8 days of surgery but may occur as late as the 13th postoperative day [8]. After being released from the hospital, several patients

(42 %) received AL diagnosis, while 12 % received one after the 30-day mark following surgery [7]. Anastomotic leakage has no early distinct clinical symptoms, and any alterations in the patient's hemodynamic should be looked at accurately.

An abdominal-pelvic computed tomography scan is still the gold standard for diagnosing anastomotic leakage, however C-reactive protein and procalcitonin have been found to be early predictors beginning from postoperative day 2-3 [6]. According to the researchers, acute pain on the first postoperative day should bring attention when it comes to the possible development of AL. Abdominal CT scan diagnosis accuracy is significantly impacted by a number of important parameters, including the time of postoperative imaging, the quality of the CT image, and the radiologists' experience. However, the use of a water-soluble contrast enema can greatly enhance the diagnostic value of this evaluation. With the use of such techniques, postoperative ALs may be detected with 100 % sensitivity, marking the occurrence of this serious complication. Rectal contrast has a far higher chance of reaching the anastomotic location as compared to oral contrast [7]. In addition to being able to identify AL, CT can be utilised therapeutically to empty an abscess percutaneously [9]. Early detection of AL is crucial and postoperative care should include C-reactive protein tests and CT imaging despite clinical symptoms.

The optimum way to handle anastomotic leakage following colonic surgery is still up for debate; approaches vary depending on the clinical state of the patient, the viability of the intestine, the preference, experience, and expertise of the surgeon [10]. Patients with indications of peritonitis or septic shock is treated with emergent surgery. Those with an abscess on CT would be drained if it was possible. Additionally, antibiotics alone were given to other

patients who had moderate symptoms or a simple pelvic collection [11]. To effectively control an abscess larger than 3 cm, drainage, medications, and bowel rest are necessary. Percutaneous drainage under computed tomography or ultrasound guidance is a viable alternative, with success rates of up to 86 %. It is critical to completely drain the abscess cavity, as partial drainage is associated with a high failure rate [12]. Traditionally, the preferred therapy for a damaged colorectal or coloanal anastomosis was anastomosis excision with proximal limb exteriorization as an end colostomy (Hartmann's surgery). This removes the cause of sepsis, but in most cases, the patient is left with a permanent stoma, with less than half of patients ever having it reversed. Hartmann's method may be required in the patient with generalised ischemia or necrosis or extensive dehiscence of the anastomosis during reoperation. However, the tendency continues to avoid resecting the extraperitoneal anastomosis [13]. To reduce the incidence of AL following anterior resection of rectal cancer, clinical practice has been using diverting loop ileostomy more frequently in recent years. A diverting stoma can lessen or even prevent fatal abdominal and pelvic infections, abscesses, and septic shock caused by anastomotic leaking, as well as the need for additional surgery. The effectiveness of diverting ileostomy in lowering anastomotic leakage rates and its use as a standard surgical procedure for rectal cancer treatment are still up for debate and are not recommended as a routine modality [14]. Endoluminal vacuum-assisted therapy (EVT) was recently established as a treatment for colorectal anastomotic leaks. EVT encounters a high rate of complete recovery of anastomotic leakage and stoma reversal. EVT is a potentially effective, minimally invasive treatment. There could be a considerable decrease in the requirement for subsequent surgery with a mean success rate of 85%

[15]. The main factor influencing the medical care of AL is the patient's clinical stability. To conclude, non-surgical treatment remains the best course of action for clinically stable patients, in the other hand for clinically unstable patients with pelvic sepsis, Hartmann's procedure still remains widely used in clinical practice.

Preoperative management of inflammatory variables and nutritional state must be coordinated to prevent anastomotic leaks following surgery [16]. Finding all these risk variables that influence the occurrence of postoperative ALs has been the attention of various researches. Indeed, improving one's knowledge and comprehension of particular preoperative, intraoperative, and perioperative aspects may aid surgeons to come to better intraoperative decisions. Numerous biomarkers and prediction models for ALs have produced encouraging findings so far. To learn more about creating precise models or biomarkers for anticipating this serious consequence, more research is still needed [7].

4. Conclusions

This comprehensive case report underscores the critical need for physicians to remain vigilant in recognizing potential risk of colorectal anastomosis. Latest endoscopic therapy reported in this case expands the field of minimally invasive treatment in selected cases of colorectal anastomosis leakage. The changing range of available treatments emphasizes the continuous attempts to enhance the handling of anastomotic leaks after rectal surgery.

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