

CLINICAL CASE

THE ROLE OF CECOSTOMY IN THE SURGICAL PATHOLOGY OF THE COLON

Ana-Maria Mihai¹, M. Alecu², L. Simion², N.D. Straja²¹ The University of Medicine and Pharmacy "Carol Davila", Bucharest, Romania²Surgical Clinic I, "Professor Doctor Alexandru Trestioreanu" Institute of Oncology, Bucharest, Romania

Corresponding author: Ana-Maria Mihai

Phone no. 0040752542906

E-mail: med.anamariamihai@yahoo.com

Abstract

In spite of a correct surgical technique, colon interventions can lead to complications of the fistula, sometimes real abdominal dramas, worsening the prognosis of these patients and hardening the surgical technique. We present the evolution of a patient initially treated endoscopically for a sigmoid polyp. The histopathological examination of the biopsy confirmed its malignant character, with invasion of the pedicle, for which reason the endoscopic polypectomy is considered insufficient from an oncological point of view and a colonic resection is advisable. In the postoperative evolution of the patient there appear complications through the occurrence of an anastomotic fistula and peritonitis, whose presence leads to the necessity of performing a terminal colostomy which permits the cessation of the inflammatory syndrome. The further reinstatement of transit is done by means of an "a minima" cecostomy, thus reducing the clinical impact in case of other complications of the fistula. The following elements were analyzed: the patient's history, associated diseases, fistula-related risk factors, biochemical, imaging and clinical samples, elements related to the surgical technique and the entire postoperative evolution of the patient. This paper stands as an argument in supporting the advantages of "a minima" cesostomy in case of colon surgery, proving how a technical artifice which is minimally invasive for the patient and easy to achieve may become very useful in solving or even preventing some severe complications arising on the background of a simple pathology.

Keywords: polyp, colonic cancer, fistula, cecostomy**Introduction**

Colonic pathology may have different forms, requiring various therapeutic approaches. The surgical treatment represents the treatment of choice in case of malignant afflictions of the colon. These types of interventions may lead to anastomotic complications of the fistula, in spite of a correct surgical technique. Sometimes they can turn into real abdominal dramas, worsening the prognosis of these patients and also creating

difficulties in the surgical technique [7]. The lowest rate of occurrence of the fistula was noticed after small bowel or ileocolic anastomosis (1-3%), whereas the highest frequency was seen after coloanal anastomoses (10-20%) [1]. Anastomotic fistulae are most frequently diagnosed late in the postoperative period, and sometimes even after the patient is discharged from the hospital [5]. The solution to these complications encounters hard problems related to the surgical technique, thus

significantly influencing the evolution of the patient. These problems are generally surgical technique-related factors (ischemia, pressure, Stapler dysfunction) or patient-related factors (local sepsis, malnutrition, immune-suppression, morbid obesity or radiation exposure) [1]. A patient with malignant pathology and associated co-morbidities is the typical patient susceptible to such complications.

Although there are risk factors that could predict the occurrence of anastomotic fistulae, they are not always conclusive because the anastomotic fistula might occur even in their absence. Therefore, there isn't a 100% efficient solution for the prevention of such complications. Moreover, the use of a surgical artifice capable of decreasing the risk of anastomotic fistula occurrence might prove extremely useful.

This paper presents the "a minima" cecostomy as a relatively simple surgical technique which grants the protection of the anastomosis, in selected cases.

Case Presentation

We present the case of a patient, A.D., aged 65, diagnosed endoscopically with bulky sigmoid polyp, who is hospitalized for endoscopic polypectomy. We also mention type II diabetes mellitus and a prostate adenoma as associated pathologies.

The colonoscopic examination revealed the presence of a pedicled polyp with a diameter of 3 cm, located at 25 cm from the AO (the anal orifice)(Figure 1). No incidents occurred during this procedure of polypectomy, even if the friability of the polyp made its removal more difficult. The histopathological examination confirmed the invasion at the level of the pedicle (villous adenoma polyp), for which reason the decision regarding the colonic resection with end-to-end manual anastomosis (in single layer, using separate hand-made threads) is done.

The postoperative state of the patient was favorable at first, but starting with day 7 there appeared inflammatory phenomena and progressive loss of peristalsis. In the 10th postoperative day an emergency surgical intervention was needed which revealed

localized peritonitis in the anastomotic fistula (less than $\frac{1}{4}$ of its circumference). Postoperative peritonitis as a consequence of an anastomotic fistula represents a challenge in terms of surgical complications, in which a prompt clinical diagnosis, sometimes difficult to make, is necessary before the beginning of any therapy. Computed Tomography (CT) plays an important role in such cases, but in this particular case the surgical intervention was necessary[6].

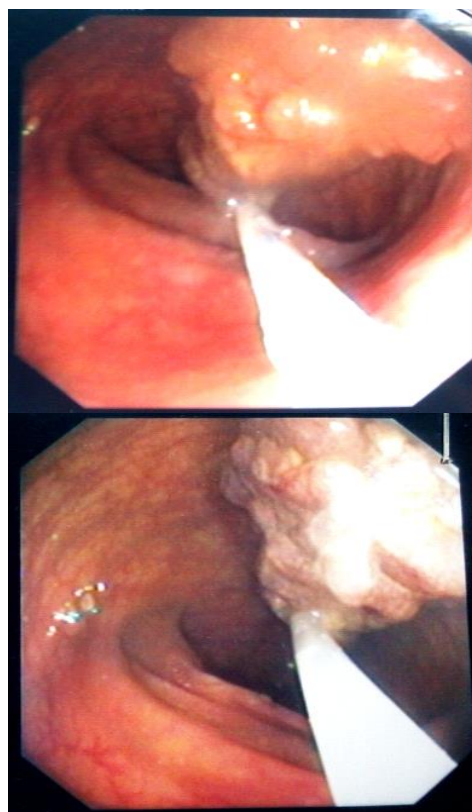


Figure 1 - Colonoscopy: pedicled polyp (3 cm diameter).

Anastomosis is discontinued and the terminal colostomy on the left side is performed, along with the abundant cleaning of the peritoneal cavity and drainage.

The patient returns for surgical reevaluation 8 months after surgery. We ought to mention the lack of secondary hepatic, ganglionic or peritoneal determinations, also confirmed by the CT, and the fact that the patient was not under adjuvant postoperative therapy. The colostoma is suppressed and the reinstatement of transit is made (after previous mechanical preparation with Fortrans) by means of an end-to-end manual anastomosis (using separate threads in single layer). Considering the unfavorable evolution of the first anastomosis and the risk factors of the patient for the occurrence of an anastomotic fistula (age, type II diabetes

mellitus, malnutrition) we decided that it is necessary to protect the anastomosis and we choose an “a minima” cecostomy as a surgical technique (Figure 2).

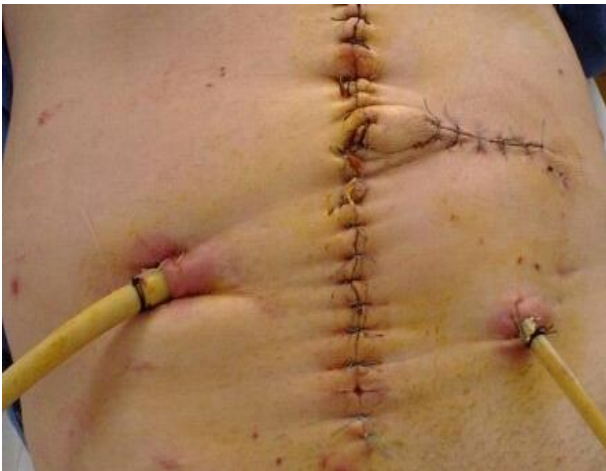


Figure 2 - Postoperative view: transit reinstatement after colostomy dissolution – „A minima” cecostomy with a Pezzer's catheter



Figure 3 - The remaining orifice after suppression of the Pezzer's catheter



Figure 4 - After the Pezzer's catheter suppression, the remaining orifice was prosthethized by means of a colostomy bag



Figure 5 - Spontaneous closure of the remaining orifice after cecostomy (aspect at 3 weeks after surgery).

The surgical technique a Pezzer's catheter was used in cecostomy, inserted in the anterior tenia coli and fixed on the cecum by means of two surgical threads in the bursa (by plugging). It is fixed on the tegument with the same two threads, at two points. To prevent the occurrence of peritonitis (through lack of attachment of the cecum to the peritoneum (a flaw of the process of cicatrization) a further ceco-parietal suture is done by means of two or three sero-musculo-parietal threads.

Cecostomy-related care: the Pezzer's catheter was maintained for 7-10 days, being then suppressed. After its suppression, the remaining orifice was protected by means of a colostomy bag (in case any inflammatory phenomena might occur around the Pezzer's catheter, earlier suppression is required along with the insertion of the contention device in case of colostomy; thus there is the risk of a parietal phlegmon occurrence). The cecostomy flow decreases gradually until the transit regains its normal function (transit resumed on the cecostoma 2 days later and 5 days naturally after surgery). The closure of the cecostoma is spontaneous, at 3-5 weeks postoperatively, without the need of further surgery.

Discussions

Most colorectal cancers arise from adenomatous polyps. From a clinical point of view, the probability of an adenomatous polyp to transform into cancer depends on its macroscopic aspect, on his histopatological trains or on its dimension. However, less than

1% of adenomatous polyps become malignant [2].

Therefore, our patient could have cured after the endoscopic polypectomy, but the polyp was part of this percentage and required additional surgical interventions which led to complications and triggered the need of further interventions.

Of course an “a minima” cecostomy is not the only option when it comes to protecting the anastomosis. It can be replaced by: colostomy of the transverse colon, classical cecostomy or ileostomy. The difference is that all these alternatives need another surgical intervention in order to suppress the stoma. Considering the patient’s state, another surgical intervention with additional risks is the last therapeutic choice.

Cecostomy was first described in 1710 by Litter. It has been a controversial surgical procedure since then, the focus being on the ratio risks-benefits. Given its most frequent reported complication, the peristomal infection is considered to be the most obvious of them. In a study regarding the evaluation of “a minima” cecostomy, few complications were reported. They included the superficial wound infection, cutaneous maceration, fistula around the catheter, and occlusion of Pezzer’s catheter, premature dislodgement of the tube and colocutaneous fistula. These complications do not require another surgical intervention [3].

A randomized trial was conducted in a department of General Surgery of a hospital in Egypt whose goal was to assess the efficacy of “a minima” cecostomy as an alternative to colostomy in the management of patients with rectum and left-colon malignant pathology. The outcome supports “a minima” cecostomy, due to a decrease in postoperative morbidity and shortens the hospitalization period [3].

Another study with a similar theme was conducted in Austria: „Colostomy vs Tube Cecostomy for protection of a low anastomosis in rectal cancer”. The conclusion of the study still represents an argument in favor of cecostomy, generally based on the decrease of the hospitalization period [4].

“A minima” cecostomy is indicated to protect the anastomosis resulting from the reinstatement of the transit after Hartmann’s

operation and the anastomoses at the level of the left colon and superior rectal area.

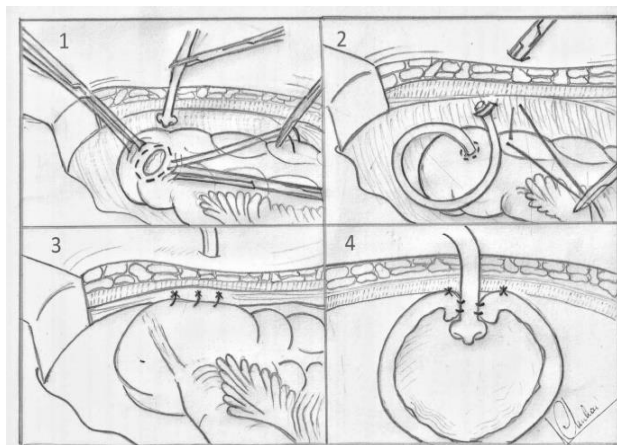


Figure 6 – 1. One of the threads that will fix the Pezzer catheter to the cecum, which is inserted in the bursa by plugging. 2. In order to prevent peritonitis (in the absence of attachment of the cecum to the peritoneum), an additional ceco-parietal fixation is done. One of the 2-3 sero-musculo-parietal threads used to such a purpose is highlighted here. 3. The final aspect of the procedure. 4. The points of insertion of the Pezzer’s catheter

Conclusions

- “A minima” cecostomy is a safe, quick and efficient method for the protection of the anastomosis.
- The whole duration of the surgical intervention is not considerably altered (“a minima” cecostomy lasts for approximately 15 min).
- Spontaneous closure of the remaining orifice after cecostomy in approximately 3-5 weeks.
- Easily accepted and tolerated by the patient.
- This is not a compulsory procedure, but it is beneficial in selected cases.
- The main indication for the method is for the patients at risk for anastomotic fistula (age, malnutrition, associated pathology, neoplastic afflictions, etc.).

References

- [1] D.W. Dietz and H.R. Balley- „Postoperative Complications”; The ASCRS Textbook of Colon and Rectal Surgery
- [2] Dan L. Longo, Dennis L. Kasper, J. Larry Jameson, Anthony S. Fauci, Stephen L. Hauser,

Joseph Loscalzo - Harrison's principles of internal medicine, 18th edition, 2012, chapter 91: 768-774

[3] Aly Saber, Emad N. Hokkam- „Efficacy of protective tube cecostomy after restorative resection for colorectal cancer: A randomized trial”, *International Journal of Surgery*, 2013

[4] Joerg Tschmelitsch, Heinz Wykypiel, Rupert Prommegger, Ernst Bodner from Department of Surgery, University of Innsbruck, Austria: „Colostomy vs Tube Cecostomy for Protection of a Low Anastomosis in Rectal Cancer”

[5] Neil Hyman, Thomas L. Manchester, Turner Osler, Betsy Burns, Peter A. Cataldo, from the University of Vermont, Burlington, VT: „Anastomotic Leaks after intestinal anastomosis”, 2007

[6] Antonio Manenti, Associate Professor, Department of Surgery, Italy: „Leakage of Colonic Anastomosis: Computed Tomography Diagnosis”, 2012

[7] Eugen Bratucu – Surgery student manual, 2009, chapter 14: 554-568.