A RARE COMPLICATION OF RECTAL CANCER: GANGRENOUS COLITIS - A CASE REPORT

ZHI-CHAO CHEN[1,*], JIE-FANG WANG[2] AND YONG-HUA LIN[3]
[1]Department of hepatobiliary surgery, the Second Affiliated Hospital of Fujian Medical University, Quanzhou 362000, Fujian Province, China - [2]Department of Imaging, Quanzhou First Hospital Affiliated to Fujian Medical University, Quanzhou 362000, Fujian Province, China - [3]Department of hepatobiliary surgery, the Second Affiliated Hospital of Fujian Medical University, Quanzhou 362000, Fujian Province, China

ABSTRACT

Background*: Gangrenous colitis is s an acute inflammatory process. The purpose of this report is to describe an unusual case of rectal cancer in adult complicate with Gangrenous colitis, and treated with surgery. In the literature, the number of gangrenous colitis reported is quite limited.*

Case presentation*: A 55-year-old man was admitted with abdominal pain complaints. According to the symptoms of peritonitis in this patient, we considered the possibility of carcinoma of the rectum with colon necrosis. Emergency exploratory laparotomy was performed and the pathological intestinal sections were resected. The pathology results of the postoperative specimens confirmed the diagnosis of rectal cancer with gangrenous colitis.*

Conclusion*: Clinician awareness of this rare complication is important for timely diagnosis and treatment.*

Keywords: *Acute abdomen, Rectal cancer, Complication, Gangrenous colitis, Surgery.*

DOI: 10.19193/0393-6384_2022_3_231

Received *March 15, 2021;* ***Accepted*** *January 20, 2022*

Introduction

Gangrenous colitis is a rare complication of rectal cancer. Gangrenous colitis is the most serious type of ischemic colitis. This can cause full-thickness necrosis of the colonic wall, which may result in necrosis of the colon and perforation with resultant peritonitis and shock(1). Its clinical presentation includes abdominal tenderness, absence of diarrhea and/or rectal bleeding(2). Because of a lack of specific signs, characteristic symptoms and clinical manifestations, gangrenous colitis is easily missed or misdiagnosed. The disease has a rapid onset and rapid progression and a high mortality rate. In this case, immediate treatment such as emergency surgical exploration, is imperative. This case is rarely reported, and both early diagnosis and prompt treatment are essential in order to save lives. This case report follows the CARE Guidelines.

Case presentation

A 55-year-old man was admitted to the hospital with a chief complaint of persistent pain throughout the abdomen for 3 h. The patient suffered from persistent pain throughout the abdomen for 3 h, accompanied by vomiting without fever, edema, and other discomfort. Symptomatic therapies, such as anti-spasmodic and antibiotics, which were ineffective in alleviating his symptoms. He also had weight loss

of 3 kg in 3 months. The patient's medical history includes chronic constipation and well-controlled hypertension with medication. The patient reported a history of smoking 10 cigarettes/day for 31 years, but had no history of consuming alcohol. No family members had similar diseases. On admission, the patient's vital signs were recorded as follows: blood pressure was 175/90 mmHg, respiratory rate was 32 breaths/min, pulse rate was 121 bpm, and SPO2 was 96%. Abdominal examination revealed generalized abdominal tenderness and rebound tenderness, with severe peritonitis. The anus finger examination in the knee-chest position showed a hard mass in the rectal lumen away from the anal margin about 7 cm in diameter at the nine o'clock position, which was difficult to move. Finger blood was not observed after the examination. Following admission, laboratory results showed leukocytosis, renal insufficiency with a white blood cell count of 24.6 × 109/L (90.6% neutrophils), serum creatinine level of 315.8 μmol/L, and D-dimer level of 8.97 μg/mL. Abdominal CT scanning revealed significant thickening of the rectal wall and segmental thickening of the entire colon wall (Fig. 1).

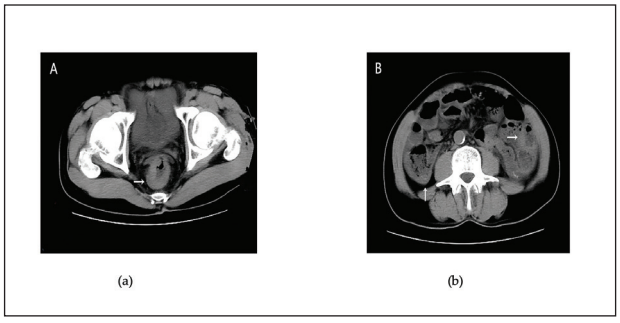

Figure 1: Abdominal computed tomography (CT) scan. (a): Annular thickening of the rectal wall - rectal tumor (arrow). (b): Segmental thickening of the colon wall (arrows).

The patient was eventually diagnosed with gangrenous colitis, rectal cancer, SIRS, renal insufficiency, and hypertension. The patient underwent emergency exploratory laparotomy. The surgery revealed that the colon had a necrotic appearance. Therefore, the following intestinal sections with suppurative or ischemic changes were resected: the ascending, transverse, descending, and sigmoid colon, and part of the rectum (Fig. 2).

Exteriorization of the terminal ileum was performed at the end of surgery. The patient was admitted to the intensive care unit after surgery and received antibiotic treatment including tigecycline. Postoperative pathology confirmed: 1, rectal ulcer type moderately differentiated tubular adenocarcinoma, the tumor size is about 4*3.5*1.8cm. 2. Extensive shallow ulcers of the intestinal wall, multiple purulent inflammation of the intestinal wall with necrosis, consistent with gangrenous colitis (Fig. 3). The patient recovered and was discharged on day 12 after surgery and eight cycles of chemotherapy with oxaliplatin combined with capecitabine. The patient did not receive radiotherapy and close the ileostomy. Local recurrence and distant metastasis were not observed at 12 months of follow-up. The patient stated that he was satisfied with the result.

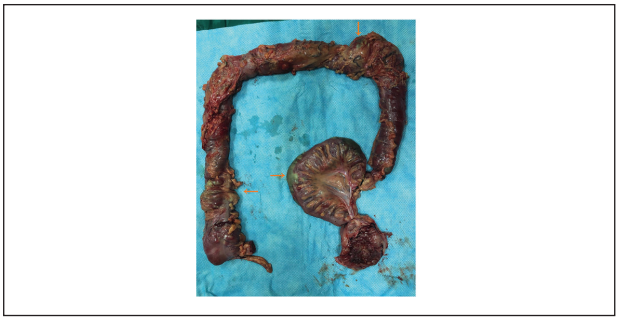

Figure 2: Image of the resected colon. Macroscopic examination of the resected colon indicated segmental bowel necrotic changes.

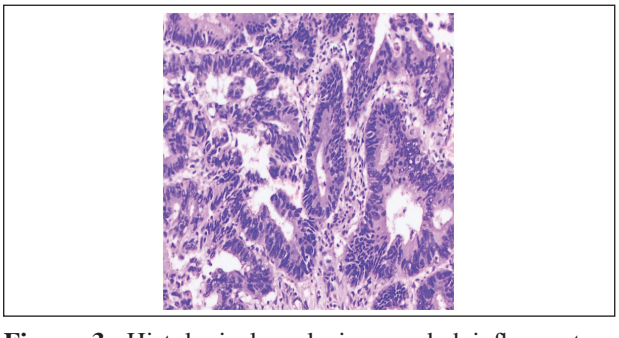

Figure 3: Histological analysis revealed inflammatory cells infiltrating all layers of the bowel and rectal ulcer type moderately differentiated.

Discussion

Common complications of rectal cancer include intestinal obstruction, intestinal perforation, obstructive enterocolitis, gastrointestinal bleeding, etc.[3]. In this case, a rare complication of gangrenous colitis occurred. Gangrene colitis is the most serious form in the development of ischemic colitis. Ischaemic colitis refers to ischemic damage and necrosis of the colon due to occlusive or non-occlusive arterial insufficiency or obstruction of venous return. It was first proposed by Boley in 1963[4]. In the sense, ischaemia of the intestinal wall in ischaemic colitis usually causes mucosal

and muscularis damage and is reversible, but in the gangrenous form, it is generally involving the whole intestinal wall, causing intestinal gangrene and even perforation, is irreversible.

Moreover, conditions such as constipation, cancer, hypertension, and the smoking habit may contribute to the development of the Disease. Because the blood of patients with malignant tumors is in a state of high coagulation for a long time, it is easy to cause small intestinal vasculitis and micro thrombosis to block the mesentery or its branch vessels. It can also be seen that there are immune complex deposits in the intima of small arteries, which can cause small arteries to narrow and cause intestinal ischemic injury[5]. With the progress of the disease, the ischemic lesions of the colon gradually aggravated, and finally gangrenous colitis formed. Elevated D-dimer level is a sensitive indicator of gangrenous colitis. It has been reported that the diagnostic sensitivity and specificity of the plasma D-dimer detection method are 87. 32% and 76. 84%, respectively[6]. The patient's D-dimer was significantly elevated and this was also confirmed. Furthermore, the occurrence of rectal cancer causes the imbalance of the intestinal flora, the intestinal probiotic flora such as Bifidobacterium, Lactobacillus, Bacteroides, etc. decreases, and the number of pathogenic flora such as Enterotoxigenic Bacteroides fragilis, Escherichia coli, Clostridium difficile, etc. Increase[7]. The increase of pathogenic bacteria is also an important cause of gangrenous colitis. Gangrenous colitis is often accompanied by clinical symptoms such as acute abdominal pain, fever, leukocytosis, and renal insufficiency. The clinical manifestation specificity of gangrenous colitis is very low, and the early diagnosis is often combined with computerized tomography and ultrasonography. All these are of great help to clinical diagnosis. Endoscopy of the lower gastrointestinal tract can be justified to aid in the diagnosis of gangrenous colitis. However, it is often difficult to perform emergently in patients who have peritonitis. Gangrenous colitis is not suitable for conservative treatment is an indication for urgent laparotomy and it is necessary to completely remove of the necrotic part of the colon[8].

The incidence of complications of rectal cancer is not high, and the incidence of gangrenous colitis is particularly low. The disease has a rapid onset and progresses quickly, with complicated clinical manifestations and lack of specificity in the beginning, and intraoperative material and examination can help confirm the diagnosis. As intestinal necrosis progresses, it becomes more difficult to treat; thus, prompt diagnosis and treatment is crucial. Since gangrenous colitis is fatal, early diagnosis and timely exploratory laparotomy are required. If a patient with rectal cancer has abdominal pain suddenly, especially if systemic inflammatory response syndrome or peritonitis is observed, gangrenous colitis should be considered. The present report of this rare complication of rectal cancer may provide data for clinical practice.

References

1) Fitzgerald JF, Hernandez LO, III. Ischemic colitis. Clin Colon Rectal Surg (2015) 28: 93-8.10.1055/s-0035-1549099
2) Yngvadottir Y, Karlsdottir BR, Hreinsson JP, Ragnarsson G, Mitev RUM, Jonasson JG, et al. The incidence and outcome of ischemic colitis in a population-based setting. Scand J Gastroenterol (2017) 52: 704-10.10.1080/00365521.2017.1291718
3) Deng Y. Rectal Cancer in Asian vs. Western Countries: Why the Variation in Incidence? Curr Treat Options Oncol. 2017 Sep 25; 18(10): 64.
4) Boley SJ, Schwartz S, Lash J, et al. Reversible vascular occlusion of the colon. Surg Gynecol Obstet 1963; 116: 53-60.
5) Samoyedny A, Sajja S, Ratnasekera A. Idiopathic acute mesenteric venous thrombosis causing ischemic enteritis: A case report. Int J Surg Case Rep. 2020; 74: 247-250. Epub 2020 Aug 29.
6) Naseer M, Gandhi J, Chams N, Kulairi Z. Stercoral colitis complicated with ischemic colitis: a double-edged sword. BMC Gastroenterol. 2017 Nov 28; 17(1):129.
7) Keku TO, Dulal S, Deveaux A, Jovov B, Han X. The gastrointestinal microbiota and colorectal cancer. Am J Physiol Gastrointest Liver Physiol. 2015 Mar 1; 308(5): G351-63. Epub 2014 Dec 24.
8) Hayashi K, Ohio Y, Hanaoka J. Gangrenous ischaemic colitis following lung wedge resection. BMJ Case Rep. 2019 May 13; 12(5): e227908.

Corresponding Author:
Zhi-chao Chen
Department of hepatobiliary surgery, the Second Affiliated Hospital of Fujian Medical University, Quanzhou 362000, Fujian Province, China
Email: drczc0929@163.com
(China)