

Ischemic Colitis of the Transverse Colon Induced by 5-Fluorouracil, Leucovorin, and Irinotecan: A Case Report



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ABSTRACT

Gastrointestinal complications are common in chemotherapy patients. Although most patients' abdominal symptoms can be due to mild chemotherapy adverse reactions, severe or life-threatening complications might occur. Typhlitis or neutropenic enterocolitis is a severe bowel wall inflammation in leukemia or solid tumor chemotherapy in neutropenic patients and may contribute to necrosis and colon perforation. Patients undergoing chemotherapy rarely experience colitis that has no standard typhlitis trait. This ischemic colitis-induced chemotherapy had conducted in patients receiving taxane-based agents. Our study presented ischemic colitis in patients receiving 5-fluorouracil, Leucovorin, and Irinotecan for sigmoid cancer that affected the transverse colon alone, unlikely for both typhlitis and chemotherapy-induced ischemic colitis. Given these findings; it is prominent to consider that life-threatening gastrointestinal complications may develop with these agents, and then surgical intervention is needed

Introduction

Chemotherapy can be associated with side effects on the gastrointestinal system. They range from mild problems such as oral mucositis, nausea, and vomiting to severe complications requiring emerging surgery. Ischemic colitis is a rare and potentially life-threatening com-

plication of chemotherapy. Taxane-based agents are known to trigger this complication [1], but other agents can also lead to ischemic colitis. Here, we presented a patient with transverse colon necrosis due to ischemic colitis who obtained a combination of 5-Fluorouracil, Leucovorin, and Irinotecan for sigmoid colon cancer. To the best of our knowledge, the isolated involvement of the transverse colon in chemotherapy-induced ischemic colitis has not been documented.

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Case History

A 53-year-old man brought a complaint of generalized abdominal pain to the emergency department that began one day before admission and steadily intensified. He also had nausea and vomiting and registered no diarrhea or hematochezia. Upon examination, he was sick and had tachycardia, but he was not feverish. In particular, the distended abdomen was tender over the epigastrium, but there was no rebound or guarding observed. Multiple liver metastases and sigmoid cancer were diagnosed that were administered five chemotherapy courses with 5-Fluorouracil, Leucovorin, and Irinotecan. The last treatment was 16 days before the onset of the pain. There was no free sub-diaphragmatic air found in the upright chest X-Ray, and a plain abdominal radiograph revealed distention of the transverse colon.

The WBC count was 1,400/2000 neutrophils. Hemoglobin was 10.9 mg/dl, and platelet counts were 363000. The patient was treated conservatively with GI rest, intravenous fluids, and broad-spectrum antibiotics, but his condition deteriorated gradually. Six hours after admission, pain and distension worsened, pulse rate increased to 145 per minute, and urine output decreased to less than 20ml per hour. Repeated examination revealed abdominal stiffness and rebound tenderness. The midline laparotomy was carried out in the operating room on the patient. The transverse colon was dilated and necrotic, but no significant perforation was observed (Figure 1). The sections of the bowel and abdomen were as regular. Transverse colectomy was performed, and we favored proximal colostomy and distal mucus fistula due to the patient's condition. The patient began oral intake one day after surgery and had discharged five days later. The histopathological evaluation has confirmed transmural necrosis of the colon.

Discussion

Ischemic colitis is a rare and potentially fatal complication in chemotherapy patients. Necrosis and bowel perforation might have happened even under effective conservative therapy. Acute abdominal pain and tenderness are the main clinical findings. Other symptoms like fever, diarrhea, hematochezia and neutropenia may or may not be present [2]. It can be comparable to enterocolitis necrotizing. Neutropenic enterocolitis is a severe colon inflammation that mainly affects the cecum, identified firstly in pediatric patients undergoing leukemia chemotherapy. Later studies have shown that it may recognize in adults undergoing chemotherapy for solid tumors [3]. Neutropenic enterocolitis or typhlitis

has characteristics not present in all patients with chemotherapy-induced colitis. In all typhlitis, neutropenia and fever were observed [4, 5], but a study reported that fever and neutropenia were in 56% of patients with taxane-agent colitis [2].

Our patient appearance was not consistent with the traditional features of typhlitis; he had no fever and had moderate neutropenia. Recorded cases of typhlitis typically have a higher degree of neutropenia. However, there are no specific criteria for diagnosing typhlitis and chemotherapy-induced colitis [4]. Whether these two concepts are separate entities or different manifestations of a single pathology remains to be explained. Taxane agents alone or in combination with other medications are the most recorded case of chemotherapy-induced colitis [1, 6]. In patients receiving Irinotecan or 5-Fluorouracil, necrotizing colitis restricted records could be found [7, 8].

A high level of suspicion is required to diagnose and manage chemotherapy-induced ischemic colitis. Acute abdominal pain and tenderness of the patient undergoing chemotherapy are troubling signs and require supportive treatment with GI rest, intravenous fluid, and broad-spectrum antibiotics. CT scans may be helpful and display thickening of the colon wall or pneumatosis [2]. It should consider monitoring the patient constantly because supportive care is not always successful, and surgical intervention is needed if the patient's condition deteriorates or the symptoms of peritonitis worsen.

Conclusion

We documented a case of ischemic colitis following treatment of a sigmoid cancer patient with 5-fluorouracil, Leucovorin, and Irinotecan-based chemotherapy



Figure 1. Dilated and necrotic transverse colon



considered associated with transverse colon necrosis. Given these findings, it is prominent to consider that life-threatening gastrointestinal complications may develop with these agents, and surgical intervention is needed.

Ethical Considerations

Compliance with ethical guidelines

Although there is no ethical issue in reporting this case, ethical approval from the appropriate ethical committee is provided.

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Conflict of interest

The authors declared no conflict of interest.

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