Colonic ischemia mimicking obstruction due to sigmoid colon cancer: A case report

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ABSTRACT

INTRODUCTION: Colonic ischemia is challenging to diagnose preoperatively. We present a patient with colonic ischemia, initially considered to have colonic obstruction. We review the history, physical findings, imaging, operative documents and postoperative diagnosis of this patient with an atypical presentation of colonic ischemia.

PRESENTATION OF CASE: A 74-year-old female presented with dyspnea on exertion and melena. A tumor in the sigmoid colon was identified by colonoscopy and biopsy showed adenocarcinoma. After admission, she developed abdominal pain. Computed tomography scan revealed the mass in the sigmoid colon and dilation of the proximal colon. She was diagnosed with colonic obstruction due to the sigmoid cancer and emergent transverse loop colostomy was performed. Postoperatively she developed hypotension and the colostomy appeared ischemic. Emergent reoperation showed ischemia from the ileum to the sigmoid colon. Despite resection, the patient died postoperatively of multiple organ system failure.

DISCUSSION: The resulting delay in diagnosis of colonic ischemia likely contributed to the poor outcome. Imaging studies play a key role in the management of acute abdominal emergencies. However, imaging can be misleading because it is only a "radiological diagnosis". A radiological diagnosis makes sense when it is the same as the "clinical diagnosis". An emphasis must be placed on history taking and physical examinations.

CONCLUSION: It is difficult to diagnose colonic ischemia in patients with suspected colonic obstruction due to colon cancer. The imaging studies in these patients may be misleading, resulting in adverse outcomes.

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1. Introduction

Colonic ischemia can be a challenge to diagnose preoperatively. We present a patient with colonic ischemia, initially thought to be “colonic obstruction”. We review the history, physical findings, imaging, operative documents and postoperative diagnosis of this patient with an atypical presentation of colonic ischemia. This work has been reported in line with SCARE criteria [1].

2. Presentation of case

A 74-year-old female presented with dyspnea on exertion and melena. She also felt loss of appetite and constipation. She had no significant past medical history and took no medications. She was fully independent and lived alone. On physical examination, her palpebral conjunctiva was pale although no other abnormalities including examination of the abdomen were found. Her hemoglobin level was 4.9 g/dl. Contrast enhanced abdominal computed tomography (CT) scan revealed a mass in the sigmoid colon and an intrahepatic mass.

After admission, she was given 4 units (560 mL/unit) of packed red blood cells and colonoscopy was performed. A villous tumor in the sigmoid colon was found (Fig. 1) and the endoscope could not be advanced beyond the tumor. Pathological findings revealed tubular adenocarcinoma. She was planned to undergo a sigmoid colon resection to prevent bleeding and obstruction.

Nine days after admission, while awaiting resection, she complained of persistent abdominal pain and vomiting. She had passed normal appearing stool earlier that day. Her abdomen was soft, distended and tender in the lower quadrants. Plain abdominal CT scan revealed dilation of the colon proximal to the tumor (Fig. 2). She was diagnosed with colonic obstruction due to the sigmoid colon cancer and emergency operation was undertaken. Transverse loop colostomy in the left upper abdomen was performed. Although the mucosa of the transverse colostomy was slightly pale, it was felt to be viable and the operation completed. However, no feces was evacuated, even after the operation. Two hours postoperatively, she developed shock and hypotension and the colostomy...
Fig. 1. Colonoscopy.
A large villous tumor in the sigmoid colon was found. The tumor was so large that the endoscope could not be passed proximally.

Fig. 2. Plain abdominal computed tomography scan.
(a) the mass in the sigmoid colon cancer (arrow) and dilated small bowel (arrowhead), (b) dilation of the colon proximal to the tumor (arrow).

Fig. 3. Resected bowel specimen.
(a) ileum to transverse colon, (b) transverse colon to descending colon, (c) descending colon to rectum and tumor (arrow), (d) schema of a, b, and c.

appeared ischemic. Re-exploration was performed one hour later. Ischemia from the ileum to the sigmoid colon was present, and these areas were resected (Fig. 3). Temporary abdominal closure was performed to facilitate re-exploration if needed. Two days after the second operation, ileostomy and feeding gastrostomy were performed to facilitate postoperative nutrition. Five days later, she died of infectious endocarditis and multiple emboli.

3. Discussion

In patients with acute colonic obstruction due to a malignancy, resection of the cancer may not be possible because of concomitant medical disease or hemodynamic instability. Performing a proximal colostomy is usually recommended to resolve the acute obstruction prior to cancer resection [2].

Approximately five percent of patients with colon ischemia have an obstructing lesion, usually in the distal colon. Half of these patients have colon cancer while the remainder have an obstruction due to diverticulitis, radiation or previous surgery [3].

The association between obstruction and ischemia may be related to reduced perfusion associated with distention or changes in motility [3].

Uberti et al. reported that gastrointestinal ischemia is often misdiagnosed due to its mild and transient clinical presentation as well
as a tendency to masquerade as other disorders [4]. A various etiologies can contribute to the development of colonic ischemia. These include hypovolemic states, systemic diseases such as vasculitis and hypercoagulable states, mechanical obstruction, therapeutic drug effects, and infection. An accurate diagnosis of ischemia relies on a strong clinical suspicion in combination with endoscopic and pathologic findings.

Moldovanu et al. reported that the pathogenic trigger of colonic ischemia is the secondary ischemia due to the decreasing blood flow into the colonic wall, secondary to high endoluminal pressure proximal to the obstruction [5]. The severity of ischemia affects the mucosa and submucosa most. Establishing a preoperative diagnosis is difficult because the symptoms are not specific: abdominal pain, nausea or vomiting, hematochezia, constipation or diarrhea and even hematemesis. The most common presentation is the obstructive syndrome associated with peritonitis. Therefore, colonic obstruction and colonic ischemia are associated with each other and the attention should be paid to whether the dilated colon is viable or not.

In the present patient, computed tomography scan showed colon obstruction and dilation of the proximal colon. However, after the colostomy was performed at the first operation, little feces were evacuated and the mucosa appeared pale but viable. It was difficult to diagnose colonic ischemia in this patient suspected to have colonic obstruction due to a distal colon cancer. The resulting delay in diagnosis adversely affected the outcome.

The treatment for patients with suspected colonic ischemia should be emergency operation with long abdominal incision and watching whole small bowel and large bowel carefully. Therefore, it should be performed initially just after watching the little feces evacuated and the pale mucosa for the present patient.

Imaging studies, especially computed tomography scans, play a key role in the management of acute abdominal emergencies. However, imaging studies may be misleading because they support a “radiologic diagnosis”. A radiologic diagnosis makes sense when it is the same as the “clinical diagnosis”. The emphasis must be to start with history taking and physical examination and consider imaging studies as part of the entire clinical picture.

4. Conclusion

It is difficult to diagnose colonic ischemia in patients with suspected colonic obstruction due to colon cancer. The imaging studies in these patients may be misleading, resulting in adverse outcomes. The treatment for patients with suspected colonic ischemia should be emergency operation with watching whole small bowel and large bowel carefully.

Conflict of interest statement
The author declare that they have no competing interests.

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Ethical approval
IRB/Ethics Committee ruled that approval was not required for this study.

Consent
The written patient consent for the publication of this case report was obtained from the patient.

Author’s contributions
JK wrote this case report, and the authors equally contributed to this case report. All authors read and approved the final manuscript.

Registration of research studies
There is no need to register because it is a case report.

Guarantor
Jiro Kimura.

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