

Case Report

Appendiceal hemorrhage — An uncommon cause of lower gastrointestinal bleeding

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Abstract

Lower gastrointestinal bleeding is a common disease among elderly patients. The common sources of lower gastrointestinal bleeding include vascular disease, Crohn's disease, neoplasms, inflammatory bowel disease, hemorrhoids, and ischemic colitis. Lower gastrointestinal bleeding arising from the appendix is an extremely rare condition. We report a case of appendiceal hemorrhage in a young male. Diagnosis was made by multidetector computerized tomography during survey for hematochezia. The patient recovered well after appendectomy. The histological finding revealed focal erosion of appendix mucosa with bleeding.

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1. Introduction

Lower gastrointestinal bleeding, hemorrhage from the source distal to the ligament of Treitz, is a common and potentially life-threatening condition. Despite improvements in diagnostic tools and techniques, survey of a bleeding source is a challenging problem in modern medical practice for patients with lower gastrointestinal bleeding. In 10% of patients, the bleeding source could not be identified even with extensive evaluation.¹ The common sources of lower gastrointestinal bleeding include vascular disease, Crohn's disease, neoplasms, inflammatory bowel disease, hemorrhoids, and ischemic colitis.^{2,3} Lower gastrointestinal bleeding arising from the appendix is an extremely rare condition, and only a few case reports have been published in the English literature. Herein we report a rare case of spontaneous appendiceal hemorrhage in a young male. The appendiceal hemorrhage

was diagnosed by multidetector computerized tomography (CT) during survey of lower gastrointestinal hemorrhage.

2. Case report

A 25-year-old man was admitted to our hospital for survey of sudden onset of hematochezia in the past three days. He denied abdominal pain, fever, diarrhea, body weight loss, and change of appetite before the onset of bloody stool. On admission, he was normotensive with mild tachycardia (97/min). The physical examination revealed no particular finding, and laboratory tests (including complete blood count, biochemistry and coagulation profiles) showed a slight decrease in hemoglobin levels (12.1 g/dL) only. Colonoscopy was performed and demonstrated no bleeding source from anal verge to terminal ileum. Abdominal multidetector CT was performed the next day after colonoscopy and revealed extravasation of contrast medium in the appendix. There was neither obvious appendiceal wall thickening nor pericecal fatty stranding (Fig. 1A and B). The patient consequently underwent celiotomy under the impression of appendiceal bleeding. The small intestine, colon and appendix appeared normal during surgical exploration, and appendectomy was

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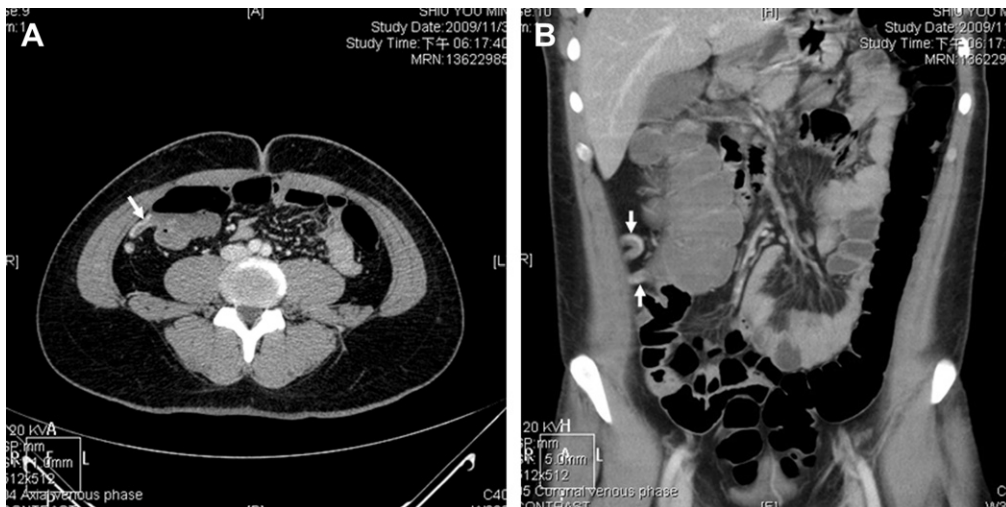


Fig. 1. (A) and (B): Abdominal CT showed distended appendix with contrast medium extravasation.

performed uneventfully. Macroscopically, the resected appendix measured 7.5 cm in length with normal appearance. On cut, a small ulcer with bleeding was noted in the lumen of the middle appendix (Fig. 2). The histology examination of the appendix revealed erosion of the mucosa with hemorrhage. There was no granuloma formation or vascular lesion over the entire appendix (Fig. 3). The post-operative course went smoothly, and the patient was discharged 5 days later. There was no recurrence of hematochezia after 6 months' post-operative follow-up.

3. Discussion

Lower gastrointestinal bleeding is not an uncommon condition, with an annual incidence about 20.5 in 100,000 patients. Lower gastrointestinal bleeding tends to occur in elderly male patients, with a 200-fold increase in 80-year-olds as compared with males in their 20s.⁴ The mean age of the affected patients ranges from 63 years to 77 years. Approximately 80% of lower gastrointestinal bleeding cases are of colorectal origin. Numerous medical diseases may cause lower gastrointestinal bleeding, among them diverticulosis, hemorrhoids, neoplasms, angiodysplasia, colonic polyps, ischemic colitis and inflammatory disease are the most common



Fig. 2. The inside of the appendix appeared normal except for a small ulcer with bleeding over the middle portion of the appendix.

causes.³ Appendiceal hemorrhage is a very rare cause of lower gastrointestinal bleeding. Until now only a few cases have been reported in the English literature.⁵

Several pathologic conditions have been reported to be related to appendiceal bleeding, including Crohn's disease, appendicitis, intussusceptions, angiodysplasia, neoplasm, endometriosis and erosion of appendiceal mucosa.⁵ Erosion of appendiceal mucosa leading to appendiceal hemorrhage is a rare condition, and to our knowledge, this is only the second case report of mucosa sloughing-induced appendiceal hemorrhage. The affected age of appendiceal hemorrhage is younger than that of lower gastrointestinal bleeding. In 2009, Baek reviewed 20 reported cases of appendiceal hemorrhage with ages ranging between 9 years and 76 years old (mean 41.1 years) and male predominance.⁶ Colonoscopy is a well-established and safe tool for the survey of hematochezia, with low morbidity and mortality rates, that also has an accuracy rate ranging from 72% to 86%.⁷ The accuracy rate of colonoscopy for survey of appendiceal hemorrhage is lower.

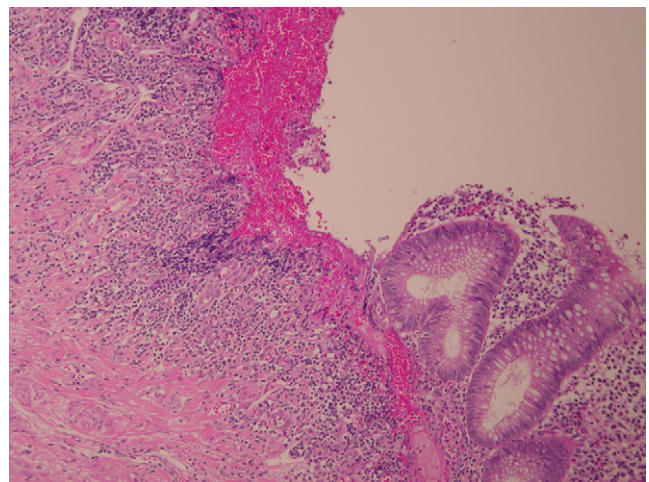


Fig. 3. The histology examination of the appendix revealed focal sloughing of the mucosa with hemorrhage and mild infiltration of polymorphonuclear lymphocytes.

Yamazaki et al. reviewed 13 reported cases of appendiceal hemorrhage, but bleeding from the appendiceal orifice could only be identified in 5 cases.⁵ Since the advent of multi-detector CT, this method has been proven to be quite valuable in evaluating gastrointestinal bleeding. It is a non-invasive, rapidly performed investigation, requires no bowel preparation, and has an accuracy rate of 88.5%.^{8,9} The combination of colonoscopy with abdominal CT may increase diagnostic accuracy. In the survey of 20 reported cases by Baek et al., bleeding from the appendix could be identified in 11 cases preoperatively by combined use of colonoscopy and abdominal CT.⁶ For patients with angiodysplasia of the appendix, selective angiography may play a role in the diagnosis of bleeding source.¹⁰

The treatment of appendiceal hemorrhage is individualized and depends on the underlying pathologic anomaly and the patient's general condition. Colonoscopy hemostasis can be used in certain cases of lower gastrointestinal bleeding, but until now, there has been no successful case report regarding colonoscopy treatment of appendiceal bleeding. Surgical treatment plays an important role in the management of appendiceal bleeding. Conventional or laparoscopic appendectomy has been performed in most patients with localized appendiceal lesions. More extensive resection such as cecectomy, ileocecectomy or right hemicolectomy has been reported to manage appendiceal bleeding according to findings during the operation. In 2001, Kyokane et al. reported their experience of temporary hemostasis in a patient with angiodysplasia of the appendix with percutaneous transcatheter arterial embolization using permanent material (micro coil). Unfortunately, massive bleeding recurred two weeks after embolization. The patient subsequently underwent conventional appendectomy.¹⁰

Our case was successfully treated with conventional appendectomy. This case report reminds us that when surveying a patient with lower gastrointestinal bleeding, appendiceal hemorrhage should be taken into consideration, especially in younger patients. This case report also suggests that the use of multidetector CT in conjunction with colonoscopy may aid in making a more accurate diagnosis with regards to appendiceal hemorrhage.

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