CASE REPORT

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Massive Lower Gastrointestinal Bleeding from the Appendix

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Massive rectal bleeding from the appendix, considered a rare case of lower gastrointestinal bleeding, is not easily recognized by various diagnostic modalities. A multidisciplinary approach for both a diagnosis and a differential diagnosis is important because the identification of the bleeding site is crucial to proceed to a proper intervention and there are various causes of appendiceal bleeding. Because early colonoscopy plays an important role in the diagnosis and management of lower gastrointestinal hemorrhage, we report a case of a life threatening massive rectal bleeding from the appendix diagnosed by colonoscopy. We also present a review of the literature. **(Gut Liver 2011;5:234-237)**

Key Words: Appendiceal bleeding; Acute appendicitis; Colonoscopy

INTRODUCTION

An appendiceal origin of the lower gastrointestinal bleeding (LGIB) is extremely rare.[1] To obtain its proper diagnosis, though a various diagnostic modalities have been approached, like angiography,[2] radionuclide scintigraphy,[3] multi-detector computed tomography (MDCT),[4] or colonoscopy, it is still difficult to make an accurate diagnosis with further interventions. In particular, unlike some promising reports regarding the use of colonoscopy, prospective studies are needed to determine the efficacy of this approach on outcomes because it is not always effective if it has severe bleeding or a non-active bleeding status.[3] The object of this study was to report a case of a massive rectal bleeding from the appendix and to discuss causes, useful diagnostic modalities, and treatment through a computer-assisted search of the English-language literature and cross-checks from other review articles.

CASE REPORT

We describe a 33-year-old man who presented a painless massive amount of bright reddish and burgundy rectal bleeding for 3 consecutive days. The patient had neither fever nor abdominal pain. He denied previous digestive tract related medical history as well as taking any of current medicine history, like nonsteroid anti-inflammatory drug. On admission the patient had an acute ill looking appearance and no altered mental status. Resting tachycardia was observed, but his blood pressure was in a normal range. In the second day of admission, he was referred to the endoscopic center where we gauzed the systolic blood pressure just less than 100 mm Hg and he complained dizziness. There were no other specific abnormalities, such as abnormal bowel sound, tender abdomen, or hepatosplenomegaly. The initial hemoglobin level was 12.3 g/dL which subsequently dropped to 9.9 g/dL the next day. Other laboratory exams, like hematologic profiles, were within normal

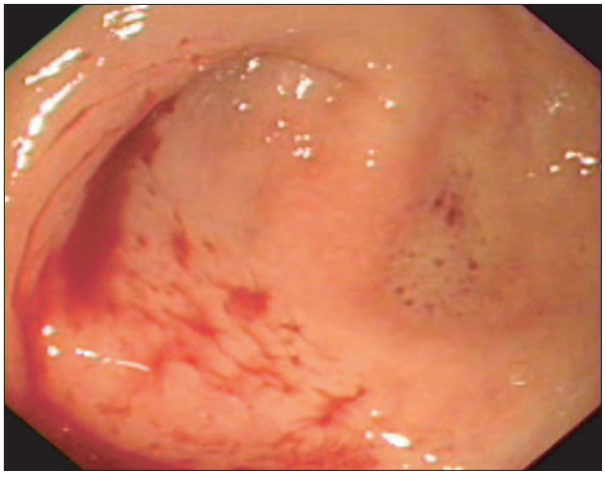

Fig. 1. The colonoscopy revealed evidence of bleeding at the appendiceal orifice.

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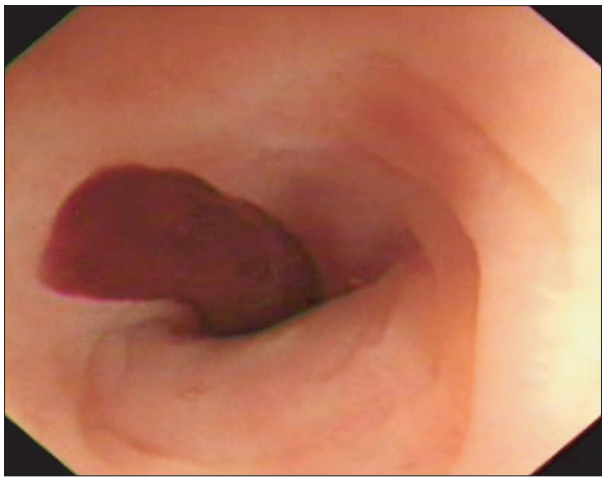

Fig. 2. An endoscopic intraluminal view of the vermiform appendix illustrating that active pulsating bleeding is welling up from the distal part.

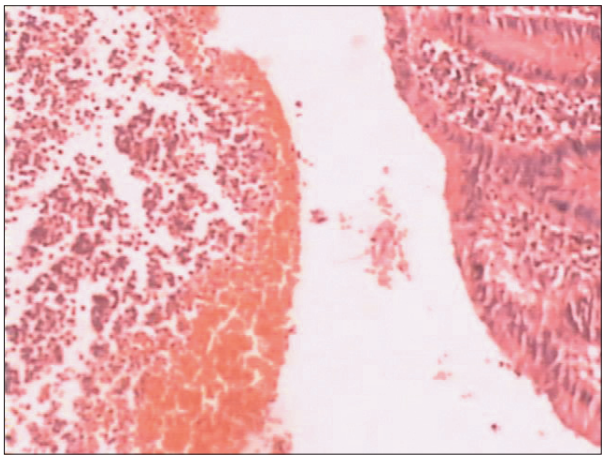

Fig. 3. Microscopic examination of the resected appendix revealing a large number of erythrocytes and background erosive lesions in the mucosal layer and surrounding inflammatory infiltrates on the left side (H&E stain, ×200).

range. The patient was first resuscitated with intravenous saline solution and followed by digestive endoscopies accordingly. An emergency esophagogastroduodenoscopy did not claim any specific lesion, but the colonoscopy disclosed fresh blood at the appendiceal orifice (Fig. 1). Interestingly, after we performed a large amount of water irrigation and removed blood contained liquids, we could not see any fresh blood, implying that the bleeding source did not seem to be around the cecum. Further, following ileoscopy illustrated that the terminal ileum was not evident for any current bleeding episode from the upper level of the tract. However, getting back to the cecum, as the scope entered the appendiceal orifice and after irrigating a small amount of water, it allowed us to corroborate appendiceal intraluminal bleeding in real-time image (Fig. 2). An emergency appendectomy eliminated the bleeding source successfully. On surgery, the appendix, about 8 cm long, had grossly normal appearance except much blood filled in. An eroded focal mucosal lesion was observed at the distal portion of inner part of the vermiform appendix. The histopathological examination revealed a case of appendiceal mucosal erosion (Fig. 3). Although relatively rare, benign appendiceal lesions, such as ulcer or erosion, should be considered a possible cause in patient who present with LGIB. Colonoscopy could reveal the location as well as the characteristics of the affected lesions, whether it provides clinicians with any suspicious source that bleeding takes place.

DISCUSSION

Appendiceal ulcer or erosion is made up a very small portion of cause of the LGIB.[5,6] Acute bleeding from the vermiform appendix is thought to be one of the least common causes of LGIB. The causes have been reported diversely as diverticulitis,[7] diverticulum,[8] acute appendicitis,[9,10] endometriosis,[11] angiodysplasia,[2,12] Crohn's disease,[13,14] aortoappendiceal fistula,[15] intussusceptions,[16-19] Henoch-Schonlein purpura,[20,21] gastrointestinal stromal tumor,[22] ulcer,[5] and erosion.[6] Our search has found 20 cases that had all presented with LGIB in English-language literature. Only one ulcer and one erosion were reported, whereas intussusception was relatively frequently reported. Most reported cases manifest acute or chronic recurrent rectal bleeding than mimic acute appendicitis. In other words, appendiceal bleeding should be suspicious when acute of chronic recurrent LGIB.[2,10] Like other origins of LGIB, appendiceal origin bleedings also need various diagnostic modalities. Because colonoscopy has replaced barium enema, in most cases since 1990s, colonoscopy has played major role in a diagnosis.[17,18] Currently, a prospective randomized study compared urgent colonoscopy group to standard care group in patients with hematochezia and concluded the group of standard care that put radionuclide scintigraphy first position has similar outcome from the group of urgent colonoscopy.[3] However, none of 20 cases has gotten the diagnosis through scintigraphy. Though radionuclide scanning has its advantage of noninvasive nature, no bowel preparation needed and easily repeated, as its variable accuracy may delay other therapeutic procedures, we also did not choose it prioritized as the patient was suspicious in hemodynamic instability.[1] Mesenteric artery angiography could make an appropriate documentation of the site to those who bleed faster than 0.5 mL/min.[1] A study tried to embolize the vessels of appendiceal bleeding; but it reoccurred and failed to stop bleeding.[2] Some of unsuccessful angiographic treatment led to fatal myocardial infarction and intestinal infarction during intra-arterial infusion of vasopressin or transcatheter embolization in some patients of LGIB. In addition to this, there was a report regarding the potential danger that ileocecal arterial embolization tends to have more chances of intestinal ischemia, infarction, and stenosis than other branches of mesenteric artery embolization.[23,24] Indeed, only 2 cases has successfully gotten definitive diagnosis

through mesenteric angiography.[2,8] Early diagnostic colonoscopy has an accepted role in the management of persistent or recurrent LGIB. Despite of its promising benefit, it is often hard to find out the exact bleeding site if colonoscopy is done in a situation of a large amount of acute bleeding. Besides, it is also hard to find the site if it bleeds intermittently, slowly, or even if it stops temporarily. In our case, as it bled intermittently, we had almost failed to document the origin of bleeding until the scope entered the orifice of the vermiform appendix. Since, nevertheless, endoscopic intervention can result in decreased resource utilization in terms of length of hospital stay, blood transfusion requirements, and cost, the case has also benefited to be sent to an operation with only 300 mL of blood transfusion right after the colonoscopy.[25] MDCT has a good accuracy for localization of acute GI bleeding. In particular, arterial phase multi-detector row CT is likely accurate for the depiction and localization of sites of bleeding in patients with acute massive gastrointestinal bleeding.[4,6] Thus, MDCT is theoretically available to those bleeding patients who are suspicious of vascular origin, but they should not be severe in hemodynamic compromised status because it requires relatively long period of time. We did conduct merely non enhanced CT right after this colonoscopy as his vital sign was getting deteriorated and there was only one concern whether it was any tumor like condition morphologically as surgeons would like to decide on the range of surgery. The size and nature of appendix looked normal; yet the histologic examination revealed hemorrhagic findings with several erosive lesions and surrounding inflammatory infiltrates mostly at mucosal layer without transmural inflammations. A review has revealed that the pathological finding of superficial mucosal ulcerative lesion is frequently observed among the patients who underwent appendectomy after acute appendicitis, suggesting that pathomorphologically, this kind of erosion and ulcer could be found in early stage of acute appendicitis without appendiceal hypertrophy.[26] Currently, a laparoscopic appendectomy tends to the treatment of choice of appendiceal bleeding as it has an advantage of minimal invasive surgery.

We present a case of severe LGIB due to appendiceal mucosal erosion. In a hemodynamic deteriorated status, an urgent colonoscopy described characteristics of the source of bleeding and also identified the location during the acute occurrence, letting effective handling in the course of simple appendectomy to be carried out. Hence, it is conceivably postulated for unresolved LGIB that clinicians may take time to let colonoscopy enter the vermiform appendix for diagnosing appendix origin pathologies. Though the chance of appendiceal origin massive bleeding is rare, as it is vital to diagnose it at an early stage for the most favorable treatment of this disease, colonoscopy would be one of the essential tools for its accuracy, convenience, and therapeutic potentiality.

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