

CASE STUDY IN GASTROENTEROLOGY & HEPATOLOGY

Diverticular Hemorrhage of the Appendix

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A 44-year-old man presented to the emergency department with a 24-hour history of maroon-colored stools followed by a syncopal episode. He had stable vital signs on presentation and a benign abdominal examination. His initial hemoglobin level was 10.9 g/dL and white blood cell count was $11.87 \times 10^9/L$. An esophagogastroduodenoscopy revealed only mild gastritis. The following day, the patient underwent a colonoscopy, which showed old and fresh blood throughout the entire colon, 3 small diverticula in the ascending colon, and one 0.8-cm \times 1.2-cm sessile polyp in the cecum. Interestingly, intermittent, active bleeding from the appendiceal orifice also was observed (Figure 1). Malignancy, such as lymphoma or carcinoid, led the differential diagnosis. A computed tomography scan of the abdomen and pelvis demonstrated a thickened appendix without fat stranding and thickened proximal colon without obstruction (Figure 2). There were isolated proximal colonic diverticula, fatty liver, and an incidental 2-cm hypervascular lesion in the left kidney that was suspicious for renal cell carcinoma.

As the patient continued to have maroon-colored stools, his hemoglobin level continued to decline despite blood transfusion (7.4 g/dL by the third day of hospitalization). He received 6 units of packed red blood cells by the fourth hospital day. A red blood cell nuclear scan failed to identify the bleeding source, likely due to the fact that the bleed was noted to be slow and intermittent during colonoscopy. The patient underwent an uneventful right hemicolectomy, with removal of the ileocecal valve and 4 cm of terminal ileum. During the perioperative period, the patient received an additional 3 units of packed red blood cells. Pathology studies of the surgical specimen revealed an appendix with 3 diverticula and evidence of diverticulitis (Figure 3). The cecum polyp was a tubular adenoma. The remainder of the colon and small bowel was unremarkable. The patient had an excellent postoperative recovery and was discharged home on the tenth hospital



Figure 1. An endoscopic view of bleeding from the appendiceal orifice.

day. He underwent curative left nephrectomy a few months later for the incidentally found renal cell carcinoma.

Discussion

The literature contains numerous, separate case reports of appendiceal diverticulitis¹⁻⁴ and appendiceal hemorrhage,⁵⁻¹³ with the latter including a wide variety of etiologies, including benign erosions, ulcers, carcinoids, lymphomas, angiodysplasia, endometriosis, appendicitis, inflammatory bowel disease, aortoappendiceal fistulae, and postappendectomy stump bleeding. Lower gastrointestinal hemorrhage secondary to appendiceal diverticulosis is extremely rare, with only 1 case reported in the literature by Norman and colleagues in 1980.¹⁴

In the current case, diverticulitis was identified only in the postsurgical specimen without clinical manifestations, as the patient did not have abdominal discomfort, fever, or leukocytosis. There was no active bleeding from the terminal ileum or from the few scattered diverticula in the ascending colon. Video recordings and endoscopic

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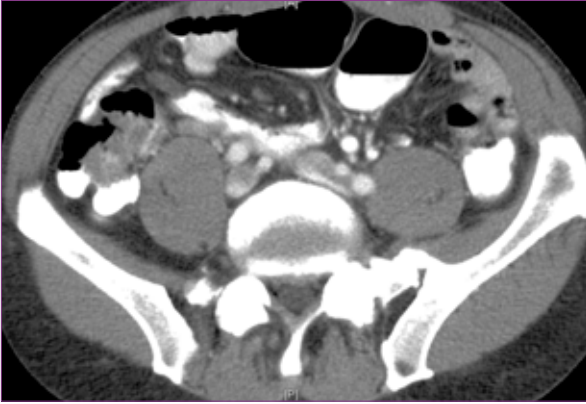


Figure 2. An abdominal computed tomography scan demonstrating a thickened cecum.

pictures served to document fresh blood intermittently flowing from the appendiceal orifice.

Colonic diverticulosis is the most common cause of brisk lower gastrointestinal bleed.^{15,16} In clinical practice, when facing the rarity of appendiceal bleed and the concomitant endoscopic findings of diverticular disease in the surrounding colon, it is reasonable to suspect the latter as the most likely source of bleeding. It is such thought that led to surgical resection of the right colon rather than a simple appendectomy.

Conclusion

This case illustrates the potential for overly aggressive surgical intervention in the circumstance of a rare endoscopic finding. When an appendiceal bleed is diagnosed by colonoscopy, it should promptly be followed by surgical resection as definitive treatment, preferably with a minimally invasive appendectomy unless otherwise indicated by clinical or surgical findings.

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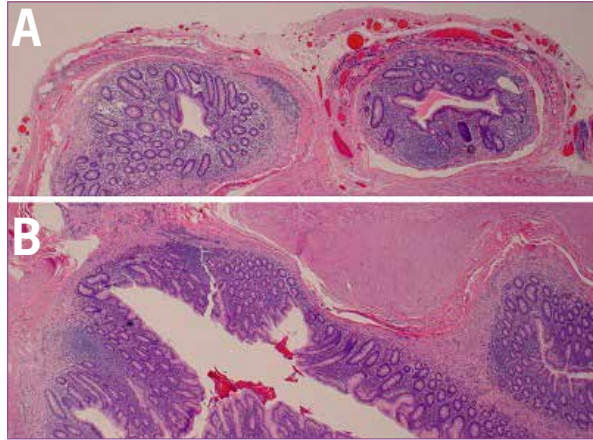


Figure 3. A low-power photomicrograph of inflamed diverticulum (A). The inset shows the presence of focal acute and chronic inflammation in a diverticulum (diverticulitis; B).

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