

## Direct Visualization of Diverticular Bleed on Colonoscopy

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### INTRODUCTION

Diverticula are small pouches that can develop in the colonic wall, affecting nearly half the population over the age of 60.<sup>1</sup> Diverticular bleeding, which occurs in approximately 5% of these patients, is characterized by spontaneous, intermittent, and often painless hematochezia, and is the most common cause of massive lower GI bleed, sometimes requiring urgent intervention.<sup>2</sup>

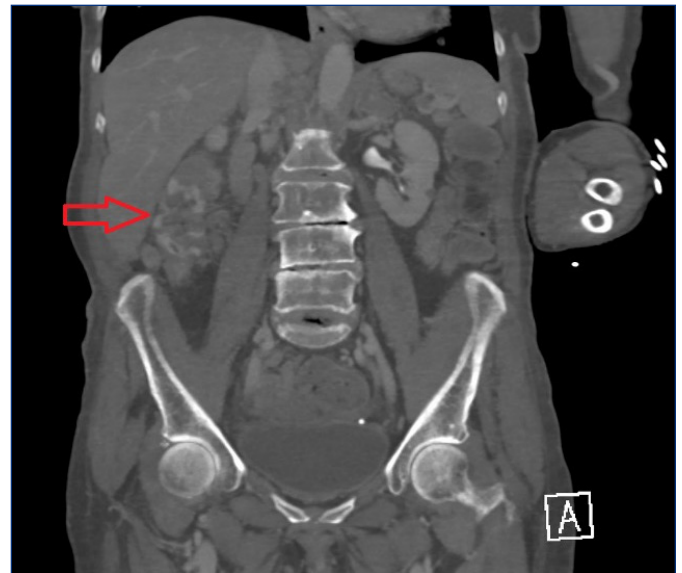
Colonoscopy is key to identifying and treating a diverticular bleed; however, bleeding stops spontaneously in roughly 70–90% of episodes.<sup>3</sup> Because of this, direct visualization of active diverticular bleeding during colonoscopy is quite infrequent, with only a limited number of case reports with imaging in the literature. This case represents a unique and valuable instance of direct visualization of diverticular bleeding during a colonoscopy. We discuss the patient's clinical presentation, colonoscopy findings, and subsequent therapeutic treatment.

### CASE PRESENTATION

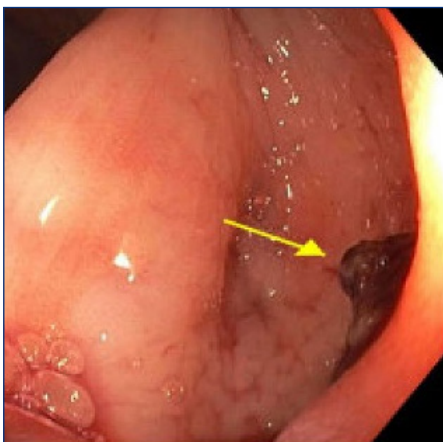
A 77-year-old female presented with large-volume bowel movements of frank blood without any abdominal pain or other associated symptoms. When she arrived, she was hemodynamically stable, but her hemoglobin had dropped from a baseline of 9 g/dL to 5.4 g/dL [reference range: 11.2–14.9 g/dL] on presentation. She was transfused two units of packed red blood cells and monitored. A CT Angiogram of the abdomen

and pelvis was obtained, showing accumulation of significant contrast in the ascending colon, compatible with a brisk GI bleed, and a small focus of additional extravasation in the transverse colon (Figure 1). Decision was made for colonoscopy

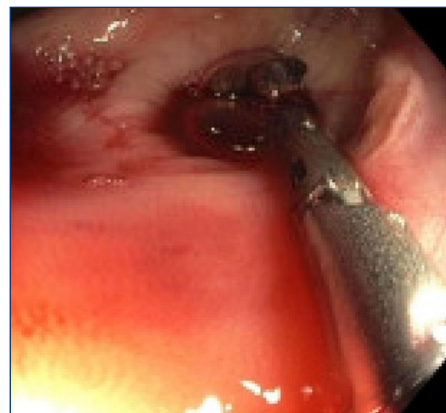
**Figure 1.** Computed tomography angiography (CTA) abdomen and pelvis (coronal view) demonstrating evidence of gastrointestinal hemorrhage. There is activity accumulation of significant contrast in the ascending colon, compatible with a brisk gastrointestinal bleed.



**Figure 2.** Bleeding vessel within diverticulum.



**Figure 3.** Hemostatic clip placement on bleeding diverticular vessel.



**Figure 4.** Hemostatic clip on diverticular vessel.



the next day after bowel preparation was completed. During the procedure, clotted and old blood was found in the rectosigmoid colon, sigmoid colon, descending colon, splenic flexure, transverse colon, and at the hepatic flexure. Near the hepatic flexure (**Figure 2**), there was one large-mouthed diverticulum with a visible vessel within the diverticulum with bleeding upon washing/agitation. The area was injected with 4 mL of a 0.1 mg/mL solution of epinephrine for hemostasis; however, this was unsuccessful. For hemostasis, three hemostatic clips were placed successfully (**Figures 3,4**). Bleeding resolved after the procedure and her hemoglobin remained stable.

## DISCUSSION

Current US guidelines recommend colonoscopy within 24 hours for patients with high-risk clinical features (such as hypotension, tachycardia, older age) or severe hematochezia, although current evidence for those recommendations remains low.<sup>4</sup> Colonoscopy is recommended as first line for evaluation of a lower-GI bleed, as you can perform both visualization and treatment interventions. Various therapeutic endoscopic interventions are available depending on the clinical scenario, including epinephrine injection, electrocoagulation, electrocoagulation, clips, and band ligation.<sup>5</sup> These can all be used as monotherapy or in multimodal scenarios if required.

In patients who are unable to tolerate bowel preparation or are not candidates for colonoscopy, angiography on CT scan can be a useful tool for identifying and treating a lower GI bleed via embolization. Unfortunately, the intermittent nature of diverticular bleeding reduces its sensitivity in this scenario.<sup>2</sup> In our patient specifically, the CTA findings indicated a brisk GI bleed, which helped inform the decision to perform urgent colonoscopy. It has been shown that extravasation findings for CT with IV contrast had high specificity for predicting stigmata of recent diverticular bleed during colonoscopy, regardless of the timing of the CT.<sup>6</sup> CTA in the acute setting may be a beneficial test in suspected lower GI bleed, as it can help further guide management.

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