

# The Stealthy Bleeder: A Case of Dieulafoy Lesion in Lower Gastrointestinal Tract

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## Introduction:

Lower gastrointestinal bleeding (LGIB) is a significant clinical concern, accounting for about 30% of major gastrointestinal bleeding episodes requiring hospitalization. While upper gastrointestinal sources are more common, lower GI bleeding presents a diverse array of potential etiologies, ranging from diverticulosis and angioectasias to ischemic colitis, neoplasms, and hemorrhoids [1].

Dieulafoy lesions represent a unique vascular anomaly within the GI tract, characterized by an abnormally large submucosal artery that erodes the overlying mucosa without an associated ulcer or erosion, potentially leading to significant bleeding [2]. Dieulafoy lesions stand out as a rare but noteworthy cause of LGIB, constituting about 2% of acute GI bleeds [3]. These lesions are more commonly associated with the upper GI tract, typically in the stomach near the gastroesophageal junction, due to the vascular supply from the left gastric artery branches. However, they can occur throughout the GI tract, including the colon, though this presentation is rare [2,4].

The pathogenesis of Dieulafoy lesions is not completely understood, but arterial wall necrosis leading to rupture has been suggested. Additionally, risk factors such as NSAIDs, tobacco, alcohol use, and peptic ulcer disease may exacerbate the potential for bleeding from these lesions [2]. The diagnosis is typically made endoscopically, with criteria including the presence of a protruding vessel or active bleeding from a small mucosal defect surrounded by normal tissue [2].

Endoscopic intervention remains the cornerstone of treatment, with mechanical modalities like band ligation and hemostatic clips being highly effective. Combination therapy has been shown to be superior to monotherapy in achieving hemostasis, which is successful in approximately 80-85% of cases [2].

The case we present emphasizes the importance of considering Dieulafoy lesions in the differential diagnosis of LGIB, given their potential for significant blood loss and the effectiveness of prompt endoscopic intervention in resolving bleeding and stabilizing patients.

## Case History:

We present a 43-year-old male with a past medical history of hypertension, dyslipidemia, benign prostate hyperplasia, and internal hemorrhoids who presented to the emergency department (ED) for two episodes of bright red blood per rectum. He initially attributed his bleeding to his hemorrhoids. While in the ED, the patient had two further episodes of large bright red blood per rectum. He did not report any abdominal tenderness. In the ED, his vitals revealed a temperature of 36.8 C, heart rate of 99 beats per minute, blood pressure of 115/ 85 mmHg, and oxygen saturation of 97% on room air. His physical exam was benign

except for bright red blood per rectum. Labs were notable for a hemoglobin of 11.8 g/dL and lactic acid of 2.9 mmol/L. CT angiography of the abdomen and pelvis was performed, which did not show any active gastrointestinal hemorrhage. The patient was started on Protonix 80 mg IV and 2 IV fluid boluses. The patient was admitted to the medical floor for treatment. GI was consulted, and the patient was scheduled for a colonoscopy.

### **Differential diagnosis, investigations and treatment:**

Colonoscopy revealed nonbleeding internal hemorrhoids, grade 3. Hematin was noted in the ascending colon. This distal ileum contained a single localized nonbleeding aphtha however, no stigmata of recent bleeding was seen. For further evaluation of bleeding, esophagogastroduodenoscopy was performed, only notable for acute gastritis. The patient continued to have bright red blood per rectum even after endoscopic intervention, with an associated decrease in hemoglobin, on day 4 of his admission, his hemoglobin was noted to be 8.5 g/dL. Due to the patient's drop in hemoglobin and persistent rectal bleeding, a capsule endoscopy is planned to rule out small bowel lesions. Colorectal surgery was also consulted for internal hemorrhoid management however, no surgical intervention at that time.

The patient's hemoglobin continued to drop, requiring a blood transfusion. A repeat CT angiography of the abdomen and pelvis was performed, which showed a small focus of active contrast extravasation in the rectum with intraluminal blood in the left colon and rectum, which was not seen on the prior imaging (Figure 1).

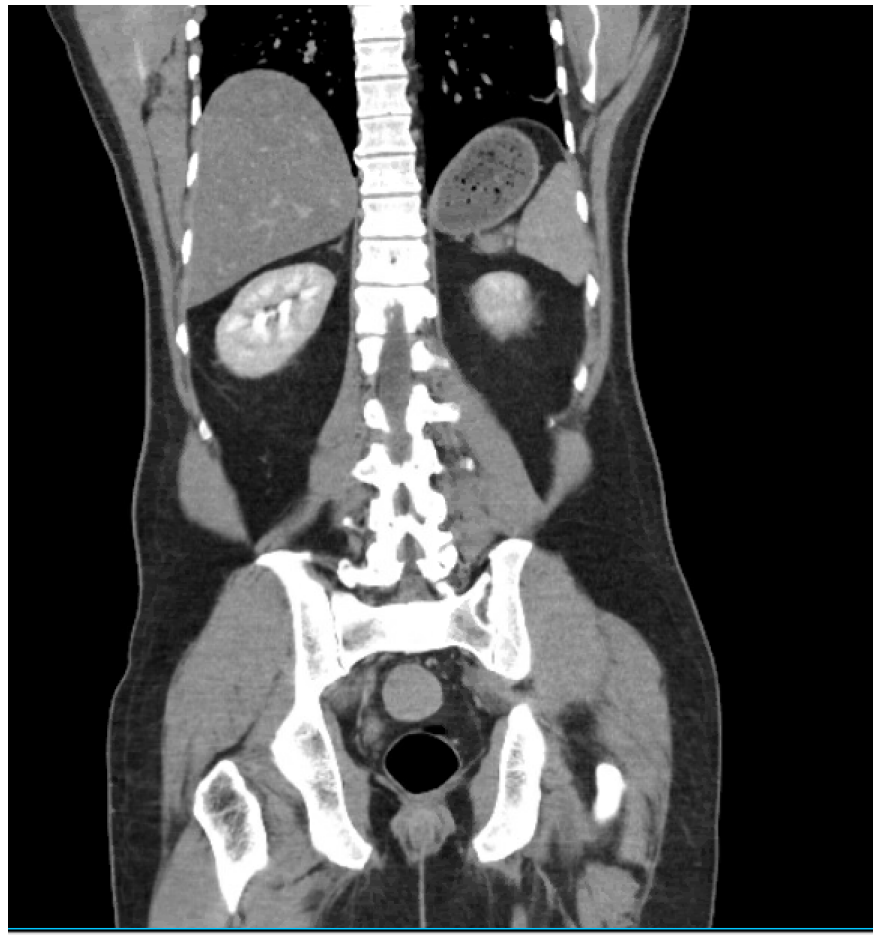


Figure 1: Computer Tomography of Chest Abdomen and Pelvis with Contrast, Coronal View, showing a small focus of active contrast extravasation in the rectum with intraluminal blood in the left colon and rectum.

At this time, surgery was planned for surgical intervention with hemorrhoidectomy and recommended for a repeat colonoscopy postoperatively as the patient had blood in ascending colon on prior colonoscopy. However, the patient had a hypotensive episode after having a large bloody bowel movement. At that time, the patient was undergoing a blood transfusion. His blood pressure was noted to be 89/56, and he had a heart rate of 107 bpm. At that time, the patient endorsed dizziness, and he was given a 1 L IV fluid bolus with improvement of his blood pressure to 113/72 mmHg. However patient became more disoriented. Critical care was consulted, and an additional unit of RBC, FFP, and platelets was recommended. Surgery was contacted, and a proctoscopy was performed bedside, which showed a large amount of clots however, will believed to be unlikely due to hemorrhoidal bleeding. The patient was transferred to the ICU for further monitoring. The following day, the patient had a colonoscopy performed to evaluate the etiology of lower GI bleeding further, which showed an ascending colon Dieulafoy lesion with active bleeding (Figure 2&3). The site was treated with an epinephrine injection and three hemostatic endoscopic clips.



Figure 2: Colonoscopy showing ascending colon dieulafoy lesion with active bleeding.

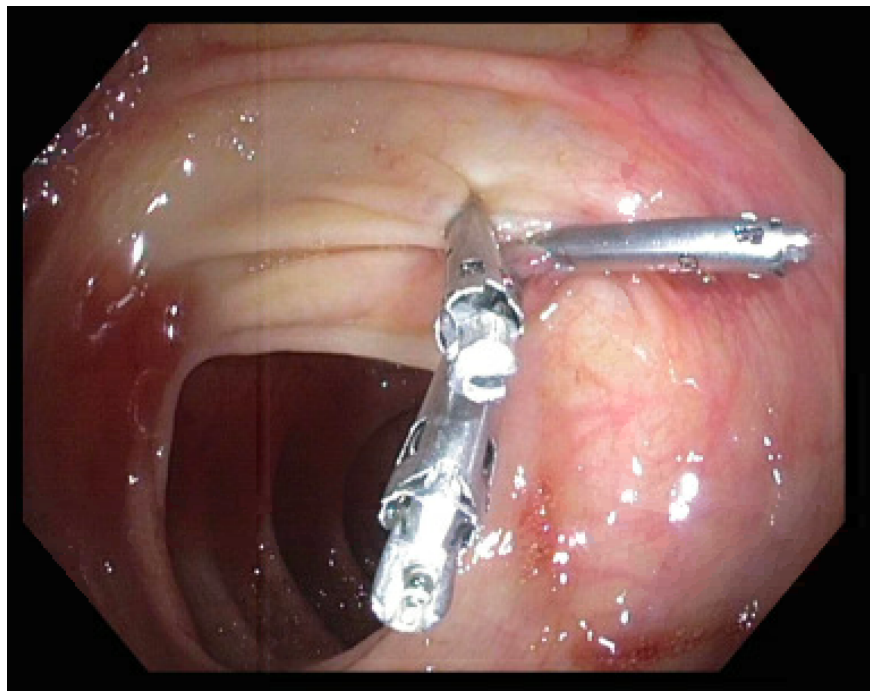


Figure 3: Colonoscopy showing lesion with endoscopic clips.

### Outcome and follow-up:

After this intervention, the patient's bleeding slowly resolved. The patient's clinical status improved, and the patient was subsequently discharged.

### Discussion:

Lower gastrointestinal bleeding (LGIB) is less common than upper intestinal bleeding and can account for about 30% of major GI bleeding that requires hospitalization [1].

Lower GI bleeding has a myriad of causes with common etiologies such as diverticulosis, angioectasias, ischemic colitis, neoplasm, and hemorrhoids [1]. However, there are less common causes, such as Dieulafoy Lesions [1]. They account for about 2% of all acute GI bleeds [3]. Dieulafoy lesions in the lower GI tract are rare, accounting for approximately 5% of total cases [3]. There is a higher predilection for males, and typically occurs after the 5th decade [3].

Dieulafoy lesions are vascular malformations of the gastrointestinal tract [2]. It is an enlarged submucosal blood vessel that can bleed without the presence of ulcers or erosions [2]. Dieulafoy lesions are believed to occur due to pulsations or an abnormally large artery that could disrupt the mucosal lining, exposing the artery and causing possible bleeding [2]. Arterial thrombosis can allow for necrosis of the arterial wall, possibly causing rupture [3]. However, the risk of bleeding can be enhanced by other factors, including the use of NSAIDs, tobacco, alcohol, and peptic ulcer disease [2]. It is possible that mucosal irritation by feces can also contribute to colonic Dieulafoy lesions [3]. Typically found in the upper GI tract, it is often found in the stomach [2]. Specifically seen in the lesser curvature, within 6 cm of the gastroesophageal junction, given its arterial blood supply from the branches of the left gastric artery [2]. Extragastric lesions can occur; however, are rarer in presentation [2]. In a study by Baxter et al., colonic sites were reported in less than 2% of cases [4].

Upon endoscopic evaluation, the following criteria are necessary for diagnosis: Normal mucosa around the defect, with active pulsatile bleeding that is less than 3 mm [2]. A visualized protruding vessel from a defect

or normal mucosa [2]. A fresh clot attached to the defect of normal mucosa is observed [2].

Treatment for Dieulafoy lesions is endoscopic intervention, with mechanical hemostasis being the safest modality [2]. Banding ligation and hemoclips are often utilized, and combined therapy is superior relative to monotherapy[2]. Hemostasis is successful in 80-85% of cases treated with endoscopy [2]. Areas can be marked with India ink for further identification if further intervention is warranted [2]. However, if endoscopic treatment is not therapeutic, surgical interventions such as wide wedge resection or partial/wedge gastrectomy can be considered [2]. In our patient, hemostasis was achieved via hemoclips and epinephrine injection and did not report any further rebleeding.

### Conclusion:

Given the wide range of differential diagnoses involved when working up hematochezia. Prompt identification of the source is needed in order to prevent significant morbidity and mortality. Although rare, Dieulafoy lesions should be excluded as a primary cause, as swift intervention is associated with hemostasis in the majority of cases.

### References:

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