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CASE REPORT | SMALL BOWEL

Massive Gastrointestinal Bleeding From a Jejunal Dieulafoy's Lesion

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ABSTRACT

Dieulafoy's lesion is a histologically normal arteriole that has failed to progressively narrow as it navigates through the submucosa. It is a rare cause of massive gastrointestinal bleeding, occurring most often in the stomach, with only 1% of lesions occurring in the jejunum. We present the case of a 21-year-old man who presented with massive hematochezia ultimately attributed to a distal jejunal Dieulafoy's lesion, identified via an intraoperative surgically assisted deep enteroscopy. This case is unique not only regarding the unusual location of the lesion but also regarding the multidisciplinary approach necessitated for the management of this catastrophic hemorrhage that avoided surgical resection.

INTRODUCTION

Dieulafoy's lesions (DLs) are an important cause of gastrointestinal bleeding because they often present with life-threatening and obscure hemorrhage. It is estimated that DL causes 1%–2% of all gastrointestinal hemorrhages, most often found in the stomach or duodenum.[1–3] We report a 21-year-old man with a distal jejunal DL who presented with massive gastrointestinal hemorrhage and was managed with intraoperative surgically assisted deep enteroscopy.

CASE REPORT

A 21-year-old man presented with sudden onset of bloody stools immediately preceded by lower abdominal discomfort. He had previously been in good health with no relevant medical history, and his review of systems was otherwise normal. At the time of triage, he was afebrile, pulse 88 bpm, blood pressure 120/81 mm Hg, and a respiratory rate of 18/min. However, a few hours after the triage while in the waiting room, he abruptly became pale, diaphoretic, lethargic, and was found to be tachycardic (102 bpm) and hypotensive (75/57 mm Hg). His abdominal examination was benign, but rectal examination was significant for a large amount of dark red blood and clots. Initial laboratory test results revealed a significant leukocytosis of 22.55/mm^3, hemoglobin of 13.5 g/dL, platelet count of 208/mm^3, blood urea nitrogen of 15 mg/dL, creatinine of 1.55 mg/dL, international normalized ratio of 1.1, and lactate of 3.8 mmol/L. A massive transfusion protocol was initiated for hemorrhagic shock, and a computed tomography angiography (CTA) revealed active contrast extravasation in the small bowel, suspected to be in the distal jejunal/proximal ileum (Figure 1). He then underwent selective angiography of the celiac artery, superior mesenteric artery, and inferior mesenteric artery, all of which were negative for active extravasation. Because his bleeding persisted and he was unstable, an exploratory laparotomy was arranged, and gastroenterology was consulted for intraoperative endoscopic assistance.

Before performing the laparotomy, the patient underwent per oral push enteroscopy within the operating room. No evidence of hemorrhage was identified to the level of the proximal jejunum. Owing to continuous and profuse bleeding (for which he had required more than 10 units of blood transfusions) and unstable clinical status, we could not perform a single/double-balloon enteroscopy. The patient then underwent a laparotomy, and the bowel was advanced manually over the endoscope to the distal jejunum, at which point a spurting arterial hemorrhage was identified (Figure 2). A single external suture was placed by the surgical team, and an endoscopic

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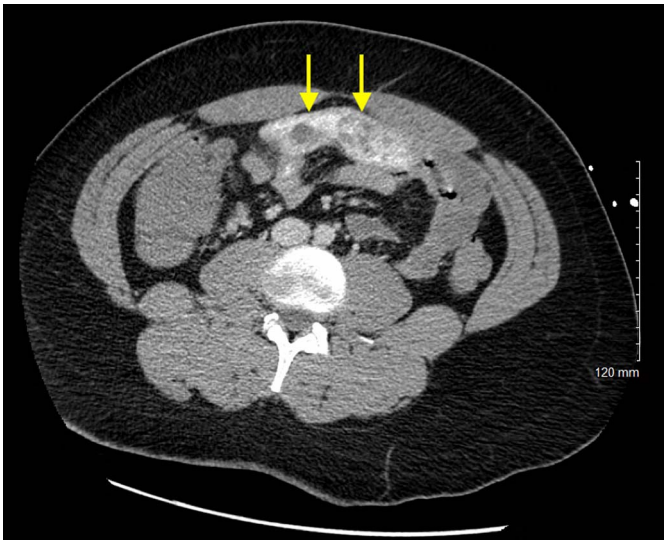

Figure 1. Abdominal computed tomography angiography with intravenous contrast showing intraluminal extravasation of the contrast suspected in proximal ileum or distal jejunum.

hemoclip was applied with complete hemostasis (Figure 3). The patient had no further bleeding and was ultimately discharged from the hospital after several days of close monitoring.

DISCUSSION

DLs are named after Georges Dieulafoy, a French surgeon, who initially called the lesions "exulceratio simplex" in the belief that these lesions were an early presentation of an ulcer. Most DLs are found in the proximal lesser curvature of the stomach, followed by the duodenum (50% of those in the duodenal bulb), but they can be found throughout the gastrointestinal tract.[1–4] DLs are typically found in men with advance aged, patients with cardiovascular and

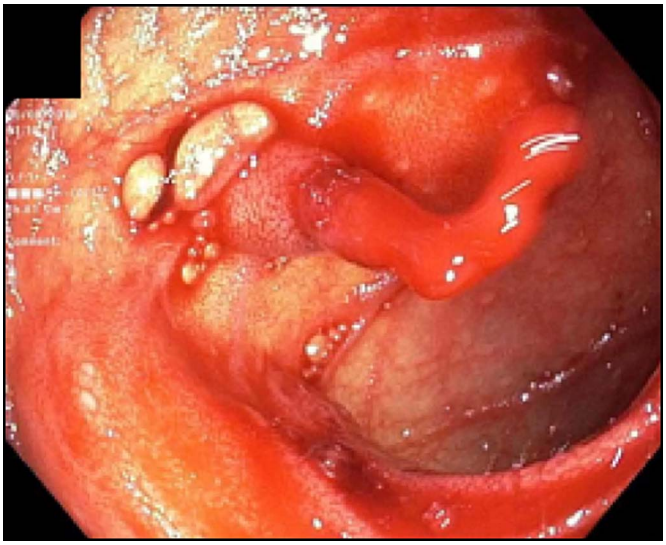

Figure 2. Intraoperative oral push enteroscopy showing an actively bleeding jejunal Dieulafoy's lesions.

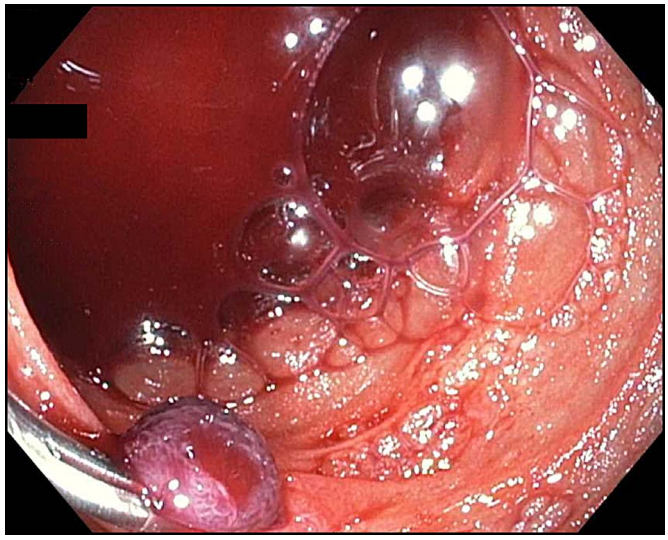

Figure 3. Adequate hemostasis achieved through the application of an operative suture by surgery team and hemoclip placement over the bleeding lesion.

renal disease, diabetics, and alcoholics.[1,2,4] Our case is atypical in that we had a young, healthy patient with a distal jejunal lesion.

DLs present in a varied manner, including melena with or without hematemesis, hematochezia, or massive gastrointestinal hemorrhage such as in our patient. The diagnosis is usually made by endoscopy but can be challenging. Repeated endoscopies are often needed when bleeding is small and intermittent.[1] There are commonly agreed endoscopic criteria in diagnosing DL: (i) active bleeding from a small mucosal defect, (ii) a protruding vessel with or without hemorrhage through a small mucosal defect, and (iii) a dense adherent clot with a thin connection to a small mucosal defect or normal mucosa—all of which are surrounded by normal mucosa. These lesions are defined as histologically normal submucosal arteries that do not progressively taper as they traverse through the mucosa.[1] Owing to the bleeding pattern of a DL, endoscopy sometimes fails to identify the lesion.[5] If endoscopy fails, CTA, conventional angiography, or technetium-99-tagged red blood cells can be useful to make the diagnosis. In our patient, CTA showed a source of bleeding in the distal jejunum. However, conventional angiography failed to demonstrate extravasation.

Treatment of DLs depends on the presentation, location, and available expertise. Endoscopic management is the first line of therapeutic intervention, and to reach distal locations, either single or double balloon-assisted enteroscopy can be instrumental. However, in our case, this option was not available because the patient was clinically unstable. Regional injection with epinephrine (dilution, 1:10 000) is a popular, inexpensive treatment modality, but it carries a high rate of rebleeding if used alone and hence is always coupled with another intervention.[6–8] Injecting sclerosants like ethanol or polidocanol has been successfully used to achieve hemostasis in a few previous case reports.[7,9] Thermal coagulation using contact (bipolar or monopolar probes) or noncontact (argon

plasma coagulation) techniques or mechanical interventions include placing hemoclips, over-the-scope clips, or banding can also be performed.[10–12] Banding may be difficult in a jejunal DL because of its location, distance from the incisors, and reinserting the endoscope can be a time-consuming process. Advances in endoscopy have lowered the mortality from 80% to <10%.[1] There are estimates that 3%–16% of all DL hemorrhages will ultimately require bowel resection.[1] Previously, bowel resection was the first-line treatment, but it is currently considered the last resort, and laparoscopic wedge resection can be performed.[14]

DLs can be a cause of dramatic gastrointestinal bleeding, and endoscopic management is the preferred treatment approach. We adapted a multidisciplinary approach by intraoperative per oral push enteroscopy in coordination with the surgical team who sutured the bleeding lesion from the external aspect and then we applied a hemoclip. The endoscopic-surgical combined cases reported in the literature describe DLs that are identified through endoscopy and then subsequently resected.[13] The outcome of this intraoperative endoscopy was successful and not commonly performed, but in our unstable patient, it avoided the need for a partial small bowel resection or enterotomy.

DISCLOSURES

Author contributions: P. Jaiswal and M. Joseph-Talreja are joint first authors for this article. P. Jaiswal, M. Joseph-Talreja, and JA Teotico wrote the manuscript. E. Grossman revised the manuscript for intellectual content and approved the final manuscript. P. Jaiswal is the article guarantor.

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