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CASE REPORT | INFLAMMATORY BOWEL DISEASE

Hemorrhagic Shock Presenting as the First Manifestation of Inflammatory Stricturing Crohn's Disease

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ABSTRACT

While hematochezia is common in Crohn's disease (CD), severe gastrointestinal hemorrhage causing hemodynamic instability is rare. Strictures, another frequent complication, usually cause obstructive symptoms. We report the first case of hemorrhagic shock from ulcerated ileal strictures as the initial presentation of CD. Standard endoscopy and abdominal imaging did not identify the bleeding source, but capsule endoscopy detected ulcerated strictures confirmed by double-balloon enteroscopy. The patient underwent small bowel resection to reduce rebleeding risk and was started on anti-tumor necrosis factor therapy. This atypical presentation of stricturing CD with hemorrhagic shock underscores the importance of small bowel enteroscopy in guiding clinical decisions.

KEYWORDS: IBD; GI bleed; capsule endoscopy; enteroscopy

INTRODUCTION

Profuse hematochezia and hemorrhagic shock are rare complications of Crohn's disease (CD) with an estimated incidence of 0.9% to 4%.[1,2] In ulcerative colitis, hematochezia typically occurs with pancolitis from widespread mucosal ulceration, whereas in CD, it is usually caused by focal erosion into an adjacent vessel.[3,4] Some studies have suggested male patients with CD demonstrate higher risk of severe hematochezia, while others reported no sex differences.[1–3,5–7] Hemorrhagic shock from hematochezia is associated with higher mortality and rebleeding rates (35%–41%).[1–8] Initial management involves resuscitation and identification of the bleeding source, which most commonly in CD is in the ileum.[1–7] Diagnostic and therapeutic options include endoscopy, angioembolization, and surgery depending on the location, severity, and stability of the bleed. Given the immediate life-threatening risks of hemorrhagic shock and the inability of medical management alone to reliably prevent rebleeding, surgical management may be required to achieve hemostasis and mitigate recurrence.[7–9] While hemorrhagic shock as the initial CD presentation is already rare, hemorrhagic shock associated with stricturing CD as the initial presentation has never been reported.[10,11] This case report describes the first known case of stricturing CD presenting as hemorrhagic shock.

CASE REPORT

A 30-year-old Asian man with no family history of inflammatory bowel disease (IBD) or autoimmune diseases presented with 1 week of melena, abdominal discomfort, and nausea. The patient denied medical history, family history, or medication use. On admission, he was found to be anemic with hemoglobin of 10.9 g/dL and normotensive; however, he suddenly developed acute gastrointestinal (GI) hemorrhage with 1 syncopal episode, hypotension, and tachycardia, requiring transfer to the intensive care unit for vasopressors and serial transfusions for a repeat hemoglobin of 5.9 g/dL.

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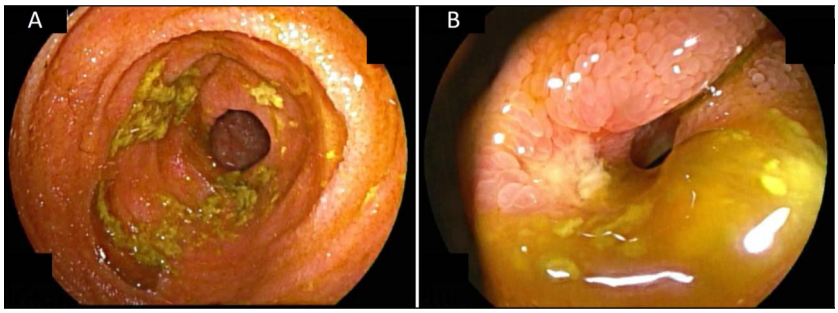

Figure 1. Anterograde double-balloon enteroscopy visualization of distal ileum (A) fibrotic stricture and (B) ulcerated fibrotic stricture.

Abdominal and pelvic computed tomography angiography showed no signs of active extravasation or perforation. Emergent endoscopic evaluation was performed with esophagogastroduodenoscopy showing mild gastritis without signs of recent bleeding. Colonoscopy revealed blood throughout the colon up to the distal ileum, with normal visualized mucosa. Meckel scan was negative. The patient required 11 units of blood products and was eventually weaned off pressors following cessation of active bleeding.

Given the patient's bleeding source could not be isolated on esophagogastroduodenoscopy, colonoscopy, and abdominal imaging, the patient's small bowel was assessed. Magnetic resonance enterography was unremarkable; however, a subsequent capsule endoscopy identified multiple focally ulcerated strictures with mild oozing concerning for CD. Anterograde and retrograde double-balloon enteroscopy identified 5 strictures in the distal ileum, with the initial stricture appearing fibrotic and subsequent 4 ulcerated (Figures 1 and 2). The retained capsule endoscopy was retrieved at the most distal stricture 65 cm from the ileocecal valve.

Owing to the severity of hemorrhagic shock and small bowel stenosis caused by the strictures, the consensus at our hospital's multidisciplinary IBD conference was to proceed with laparoscopic small bowel resection. A 45 cm section of bowel containing 5 strictures and creeping fat was resected with guidance from tattoo markings flanking the strictured area during enteroscopy, allowing for precise surgical planning and bowel preservation. Final pathology revealed moderate active chronic ileitis with focal erosions and intramural lymphoid aggregates without granulomas or dysplasia (Figure 3). After the patient recovered from surgery, he was started on infliximab as an outpatient.

DISCUSSION

Hemorrhagic shock from CD presents a diagnostic and therapeutic challenge, especially as the initial presentation. Given its rarity, other etiologies of GI bleeding should be considered first. For this young man with low pretest probability for IBD, we ruled out Meckel diverticulum with a tagged red blood cell scan. Double-balloon enteroscopy made the diagnosis of CD based on multiple ulcerated strictures in the ileum, with pathology providing confirmation.

Strictures in CD typically affect the small bowel but can arise anywhere within the GI tract.[12] Around 10% of patients present with strictures at diagnosis, and nearly half progress to a stricturing phenotype within 10 years.[13] While strictures typically present with obstruction, this patient's prominent symptom was hemorrhagic shock. Magnetic resonance enterography, while valuable for assessing small bowel pathology, has lower sensitivity for strictures than capsule endoscopy and was not able to discern small bowel pathologies in our patient.[14] We demonstrate the importance of small bowel enteroscopy as an essential diagnostic tool, identifying the bleeding source beyond the reach of standard endoscopy and undetected by computed tomography and MRI.

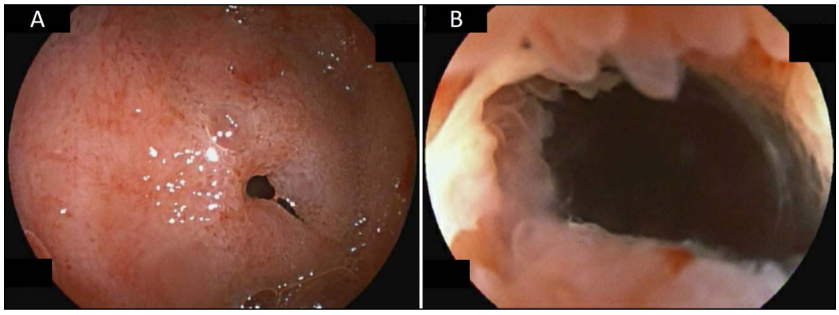

Figure 2. Retrograde double-balloon enteroscopy visualization of distal ileum (A) fibrotic stricture with surrounding inflammation, which is (B) not passable.

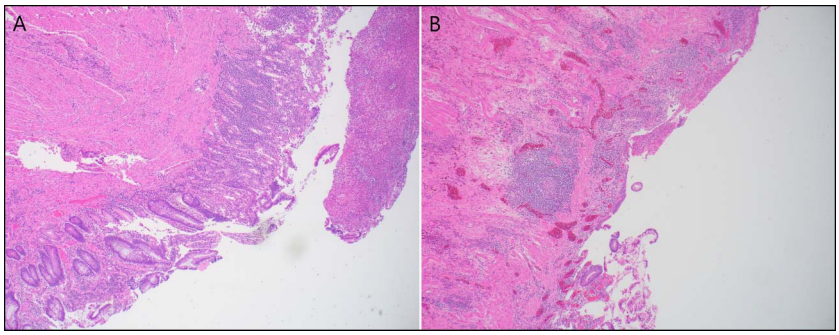

Figure 3. Biopsies from the laparoscopic small bowel resection demonstrate (A) crypt drop-off, architectural distortion, and basal dense lymphoplasmacytic infiltration and (B) focal mucosal erosion and transmural inflammation. Magnification: 150×.

Significant GI bleeding in CD commonly arises from transmural inflammation with focal erosion into a vessel but is rarely reported with strictures. A pediatric case series highlighted 3 patients with strictures that presented with GI bleeding without obstruction, but the etiologies were suspected to be from necrotizing enterocolitis.[15] Furthermore, these cases presented as chronic GI bleeding without hemodynamic compromise. To our knowledge, this is the first documented case of stricturing CD causing hemorrhagic shock as the initial presentation.

Strictures are classified as inflammatory, fibrostenotic, or mixed.[16] Inflammatory strictures often respond to medical management with anti-tumor necrosis factor agents, while fibrostenotic strictures typically require endoscopic or surgical intervention.[13,15,16] The strictures in this patient were likely mixed, with the ulceration caused by vascular compromise with subsequent focal inflammatory necrosis.

Hemorrhagic shock from CD is rare, and no standardized management guidelines exist. Surgical management must balance the risk of postoperative complications, especially the risk of short bowel syndrome against the need for definitive control of bleeding.[9] The decision for surgical management in this case was driven by the severity of hemorrhagic shock, limitation of alternative therapeutic options, and significant small bowel strictures that needed resection. Steroids were contraindicated in the setting of GI hemorrhage, and biologics were limited by delayed onset. Endoscopic and radiological interventions, while effective for localized bleeding, are less effective with diffuse or inaccessible bleeding sources such as the small bowel.[11] None of these options could simultaneously address both intestinal hemorrhage and the small bowel strictures, making surgical resection the optimal choice. Given the aggressive presentation in this young patient, infliximab was initiated after surgical recovery to reduce the risk of CD progression.[17]

DISCLOSURES

Author contributions: M. Sumethasorn and P. Lee wrote the manuscript. NK Mann, SM Choi, G-Q Xiao, and B. Zhang produced the figures and captions. NK Mann, SM Choi, G-Q Xiao, B. Zhang, and C. Cherfane critically reviewed the manuscript. B. Zhang is the article guarantor. All authors were involved in the clinical care of the patient.

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Informed consent was obtained for this case report.

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