

Jejunal Angiodysplasia Presenting as Massive Gastrointestinal Bleeding: A Case Report

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ABSTRACT

Jejunal angiodysplasia is a rare cause of massive gastrointestinal bleeding and may be difficult to diagnose because conventional endoscopic investigations often fail to identify the bleeding source. We report the case of a 36-year-old man admitted to the intensive care unit with hemorrhagic shock secondary to massive gastrointestinal bleeding. Initial evaluation with esophagogastroduodenoscopy, colonoscopy and computed tomography angiography was unrevealing. Owing to persistent bleeding and ongoing transfusion requirements, selective mesenteric angiography was performed and demonstrated active bleeding from a jejunal angiodysplastic lesion. Superselective transcatheter embolization with absorbable gelatin sponge particles was successfully performed, resulting in immediate hemostasis, hemodynamic stabilization and complete resolution of the bleeding without recurrence. This case highlights the complementary role of mesenteric angiography as both a diagnostic and therapeutic modality in patients with life-threatening gastrointestinal bleeding when conventional investigations are inconclusive. Early recognition and timely endovascular intervention may improve outcomes and avoid the need for surgical treatment.

Keywords: Jejunal angiodysplasia ; Obscure gastrointestinal bleeding ; Mesenteric angiography ; Transcatheter arterial embolization ; Hemorrhagic shock ; Small bowel bleeding

Introduction

Intestinal angiodysplasia is an acquired vascular abnormality of the gastrointestinal tract. It is defined as a solitary or multiple superficial vascular lesion involving the mucosal and/or submucosal layers of the gastrointestinal wall, occurring in the absence of associated cutaneous or visceral angiomatous malformations^{1,2}. These lesions are a well-recognized cause of gastrointestinal bleeding and represent a major etiology of

obscure gastrointestinal hemorrhage, particularly when located within the small bowel, where diagnosis remains challenging^{3,4}, however, it may rarely cause massive gastrointestinal hemorrhage resulting in hemorrhagic shock. The diagnosis of small bowel angiodysplasias has historically been challenging because conventional imaging modalities, including scintigraphy, angiography, computed tomography and magnetic resonance imaging, exhibited limited sensitivity and specificity^{5,6}. We report the case of a 36-year-old man with hemorrhagic shock

secondary to massive gastrointestinal bleeding due to a jejunal angiodysplastic lesion, successfully diagnosed and treated by selective mesenteric angiography and superselective transcatheter embolization.

Case Presentation

A 36-year-old man was admitted to the intensive care unit with hemorrhagic shock secondary to acute upper gastrointestinal bleeding. His medical history was significant for cerebral palsy complicated by epilepsy, treated with sodium valproate (500 mg twice daily) and clobazam (5 mg/day), a previous history of pulmonary tuberculosis that had been successfully treated. One week before admission, he developed progressively recurrent episodes of hematemesis without associated abdominal pain, fever or jaundice. On admission, the patient presented with hemorrhagic shock, characterized by hypotension (blood pressure 70/50 mmHg), tachycardia (130 beats/min), cold extremities and marked mucocutaneous pallor. Neurological examination revealed that he was conscious and had preserved his baseline neurological status, with no clinical seizures, his pupils were equal and reactive to light. Respiratory examination revealed no significant abnormalities. Abdominal examination revealed a soft, non-distended and non-tender abdomen. Digital rectal examination confirmed the presence of melena. In view of the patient's hemodynamic instability, immediate resuscitative management was initiated, including intravenous fluid resuscitation, blood product transfusion and endotracheal intubation to secure the airway and facilitate hemodynamic stabilization. Initial laboratory investigations demonstrated severe acute blood loss anemia (hemoglobin: 5g/dl). Additional laboratory parameters were as follows: platelet : $58 \times 10^9/L$; prothrombin activity : 45%; blood urea : 0.4 g/l; serum creatinine : 7 mg/l; sodium : 143 mmol/l; potassium : 4.3 mmol/L; calcium : 85mg/L. Liver function tests were within normal limits. Emergency esophagogastroduodenoscopy was performed as the initial diagnostic procedure and revealed Los Angeles grade A reflux esophagitis and erosive pangastritis without evidence of active bleeding or stigmata of recent hemorrhage. Because these findings failed to account for the severity of the bleeding, colonoscopy and contrast-enhanced computed tomography angiography of the abdomen were subsequently performed; neither examination identified the bleeding source. Given the persistence of gastrointestinal bleeding despite initial investigations and ongoing transfusion requirements, selective mesenteric angiography was undertaken for both diagnostic and therapeutic purposes. Angiography demonstrated active contrast extravasation from a jejunal angiodysplastic lesion (**Figure 1**). Superselective transcatheter embolization with absorbable gelatin sponge particles was successfully performed, resulting in immediate hemostasis and complete cessation of bleeding. The patient's clinical course was uneventful thereafter, with complete resolution of gastrointestinal bleeding, rapid hemodynamic stabilization and no evidence of recurrent hemorrhage during hospitalization. Following successful liberation from mechanical ventilation, he was extubated and transferred to the gastroenterology department for continued monitoring and further management.

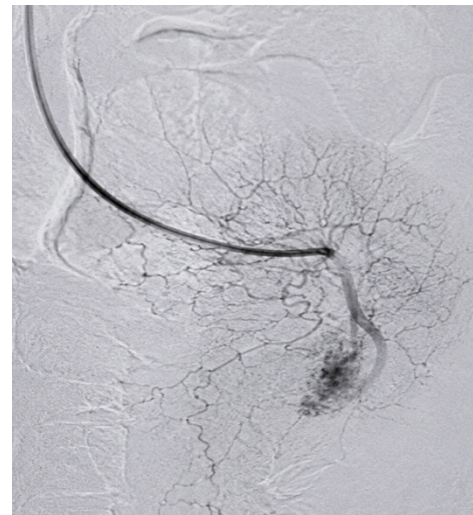


Figure 1: Selective mesenteric angiography demonstrating a bleeding jejunal angiodysplastic lesion with active contrast extravasation.

Discussion

Intestinal angiodysplasia is an acquired vascular abnormality of the gastrointestinal tract. Although gastrointestinal vascular malformations were first reported in 1839, the modern concept of intestinal angiodysplasia was not established until 1974. It is defined as a solitary or multiple superficial vascular lesion involving the mucosal and/or submucosal layers of the gastrointestinal wall, occurring in the absence of associated cutaneous or visceral angiomatous malformations^{1,2}. These lesions are a well-recognized cause of gastrointestinal bleeding and represent a major etiology of obscure gastrointestinal hemorrhage, particularly when located within the small bowel, where diagnosis remains challenging^{3,4}. Small bowel bleeding accounts for approximately 5-10% of all gastrointestinal hemorrhages. Among the various etiologies, angiodysplasias are recognized as the most common vascular lesions and the predominant cause of bleeding from the small intestine^{7,8}. Bleeding gastrointestinal angiodysplasias are frequently associated with advanced age and several comorbid conditions, particularly aortic stenosis (Heyde's syndrome) and chronic renal failure⁴. Acquired von Willebrand factor deficiency and platelet dysfunction are considered the main mechanisms promoting hemorrhage. Other reported associations include heart failure, chronic obstructive pulmonary disease, venous thromboembolism, cardiovascular disease and liver cirrhosis⁴. The diagnosis of small bowel angiodysplasias has historically been challenging because conventional imaging modalities, including scintigraphy, angiography, computed tomography and magnetic resonance imaging, exhibited limited sensitivity and specificity^{5,6}. Consequently, patients often required multiple investigations and hospitalizations before a definitive diagnosis was established. The advent of video capsule endoscopy (VCE) and device-assisted enteroscopy (DAE) has markedly improved the detection of small bowel vascular lesions⁹⁻¹¹. While DAE enables both diagnosis and endoscopic treatment, its invasive nature, higher cost and requirement for specialized expertise limit its use. Therefore, VCE is currently considered the first-line diagnostic modality for obscure gastrointestinal bleeding, where as DAE is primarily reserved for therapeutic intervention. Despite the superior diagnostic performance of video capsule endoscopy for the detection of small-bowel bleeding sources,

conventional angiography continues to play a pivotal role in selected clinical settings. In addition to accurately identifying the site of hemorrhage, angiography allows prompt therapeutic embolization during the same procedure, thereby offering a significant advantage in the management of life-threatening gastrointestinal bleeding. Consequently, its use is primarily advocated in patients with active hemorrhage and hemodynamic compromise, in whom rapid localization and definitive control of bleeding are imperative. The management of bleeding small bowel angiodysplasias is often more complex than that of gastric or colonic angiodysplasias owing to the relative inaccessibility of the small intestine⁴. As a result, these lesions continue to represent a significant therapeutic challenge. Endoscopic therapy is frequently used to treat small-intestinal angiodysplasias, although robust evidence supporting its long-term efficacy remains lacking¹². Endoscopic management of gastrointestinal angiodysplasias relies on the direct coagulation of vascular lesions using a variety of thermal modalities. Among these, argon plasma coagulation (APC) is the most widely utilized and extensively studied technique¹³⁻¹⁵. APC delivers a non-contact thermal current through ionized argon gas, allowing effective coagulation of vascular lesions while limiting the depth of tissue injury. Consequently, the risk of procedure-related perforation is low, making APC a safe and effective therapeutic option for the treatment of bleeding angiodysplasias¹⁶. Alternative endoscopic modalities, including monopolar and bipolar electrocoagulation as well as laser photocoagulation, have demonstrated comparable hemostatic efficacy. However, these techniques are associated with a higher risk of perforation, particularly in thin-walled segments of the gastrointestinal tract and laser therapy is further limited by its cost and the need for specialized expertise⁴. Selective transcatheter arterial embolization represents a highly effective therapeutic approach for small-bowel angiodysplasias with active bleeding, achieving hemostasis in approximately 80%–90% of cases¹⁷⁻¹⁹. Despite the risk of procedure-related complications, including bowel ischemia, thrombosis and vascular injury, its ability to provide rapid and definitive hemorrhage control makes it particularly valuable in hemodynamically unstable patients or when endoscopic treatment is technically challenging because of the inaccessibility of the small intestine⁴. Current guidelines support consideration of somatostatin analogues or thalidomide for recurrent bleeding after endoscopic therapy, despite the limited evidence base¹². Surgical resection remains the ultimate therapeutic option for patients with refractory bleeding angiodysplasias when endoscopic, radiological and pharmacological treatments have failed²⁰. Despite its high efficacy, surgery is now reserved for selected patients because of the significant perioperative risks associated with advanced age and multiple comorbidities²¹.

Conclusion

This case highlights that small bowel angiodysplasia, although uncommon, can present with life-threatening massive gastrointestinal bleeding. Prompt multidisciplinary management is essential and angiography plays a pivotal role by enabling both localization of the bleeding source and therapeutic embolization in hemodynamically unstable patients.

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