Case Report

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Recurrent Upper Gastrointestinal Bleeding Due to Dieulafoy's Lesion of the Stomach in a 38-Year-Old Male: A Case Report

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Abstract

Dieulafoy's lesion is a rare but potentially life-threatening cause of upper gastrointestinal (UGI) bleeding. It is characterized by a large-caliber, tortuous arteriole that erodes through the gastrointestinal mucosa without an associated ulcer. We report a case of a 38-year-old male with recurrent UGI bleeding requiring multiple transfusions, ultimately diagnosed with a Dieulafoy's lesion of the stomach. Endoscopic intervention using hemoclips successfully achieved hemostasis. This case highlights the importance of early endoscopic evaluation in patients with recurrent gastrointestinal bleeding and demonstrates the efficacy of endoscopic hemoclipping as a first-line treatment modality.

Keywords: Dieulafoy's lesion, Upper gastrointestinal bleeding, Hemoclip, Endoscopic hemostasis.

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Introduction:

Upper gastrointestinal bleeding is a medical emergency, and a Dieulafoy's lesion represents a potentially serious underlying cause. It accounts for approximately 6% of non-variceal upper gastrointestinal bleeding and 1% to 2% of all cases of gastrointestinal bleeding[1]. A Dieulafoy's lesion is marked by an unusually large arteriole that extends from the submucosal layer. Even in the absence of visible abnormalities like ulcers or erosions, this twisted artery can become compromised and lead to severe, active, pulsatile bleeding[2]. These lesions are most commonly located in the proximal stomach, typically along the lesser curvature. Despite their rarity, their clinical significance lies in the difficulty of diagnosis and the potential for massive, life-threatening bleeding.

Case Presentation:

A previously healthy, 38-year-old male presented with the complaints of sudden onset multiple episodes of melena for two days. There was no history of vomiting, hematemesis, abdominal pain, anorexia, weight loss, jaundice or abdominal distension. He denied recent use of any non-steroidal anti-inflammatory drugs (NSAIDs), anticoagulants or alcohol abuse. His past history, social history and family history were unremarkable.

On examination, the patient was pale and tachycardic but conscious, with a blood pressure of 90/60 mmHg and a pulse rate of 110 bpm. There was no stigmata of chronic liver disease. Initial laboratory investigations revealed a hemoglobin level of 2.8 g/dL with normal platelet count. His liver function test, serum creatinine and electrolytes were normal and viral markers were negative. The patient required a transfusion of multiple units of packed red blood cells. After initial stabilization, an esophagogastroduodenoscopy (EGD) was performed which revealed no evidence of bleeding lesion. The patient was managed conservatively with injection PPI drip and improved clinically. As there were no further bleeding episodes during hospitalization, he was discharged and advised to follow up. But a few days later, he was readmitted to our department with one episode of hematemesis and three to four episodes of melena. He was found profoundly anemic and weak, so 3 units of packed red blood cells transfusion was given and a second look endoscopy was performed.

Endoscopy revealed a pulsatile arterial bleeding point on the lesser curvature of the stomach without evidence of surrounding ulceration or mass lesion—characteristic of a Dieulafoy's lesion (Figure 1). Endoscopic hemostasis was achieved by the application of hemoclips at the bleeding site, resulting in immediate cessation of bleeding (Figure 2).

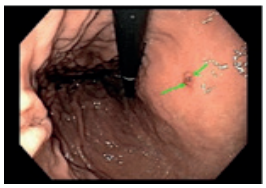

Figure 1: Endoscopic finding of Dieulafoy's lesion at upper body of stomach along the lesser curvature, protruding vessel with a minute mucosal defect and normal surrounding mucosa.

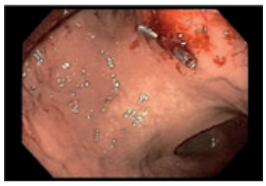

Figure 2: Endoscopic hemoclip application to Dieulafoy's lesion.

The patient was monitored post-procedure and remained stable. No further episodes of bleeding occurred and he was discharged after five days of hospitalization. At a follow-up visit of three months, the patient gave no history of GI bleeding.

Discussion:

Dieulafoy's disease is a well-known entity characterized by a bleeding or clot-bearing artery protruding into the intestinal lumen without surrounding ulceration. It may occur anywhere in the gastrointestinal tract but predominantly in the gastro-oesophageal junction and the stomach along the lesser curvature[3]. It is believed to occur more frequently in males than females, with a male-to-female ratio of 2:1 and typically presents at a median age of 54 years.

Paul Georges Dieulafoy (1839–1911), a pathology professor in Paris, France, was the first to report on 10 patients who experienced severe haematemesis caused by a bleeding gastric vessel, despite the absence of ulceration. He documented these cases in the first three lectures of the 1897–1898 edition of Clinique Médicale de l'Hôtel-Dieu. Dieulafoy determined that the condition differed from a typical gastric ulcer and termed it "exulceratio simplex," a term that later became known as the "Dieulafoy lesion"[4].

The precise cause of the bleeding remains unclear to this day. Various theories have been suggested to explain how the rupture and resulting severe hemorrhage occur. One proposed mechanism emphasizes the role of mucosal atrophy and ischemia. According to this theory, the pulsation of a large, thick submucosal artery exerts pressure on the overlying epithelial layer, eventually causing a minor erosion and rupture of the vessel into the gastrointestinal lumen[5].

Most patients with Dieulafoy's lesions typically experience a sudden, severe and recurrent episode of painless hematemesis. In some cases, melena or hematochezia may also occur. Additionally, patients might show signs of anemia such as dizziness, lightheadedness or difficulty breathing[6].

Endoscopy remains the gold standard for diagnosis and treatment. The endoscopic detection rate of Dieulafoy lesions exceeds 90%. However, identifying the lesion can be challenging during the initial bleeding phase due to its small size, intermittent bleeding, and the absence of overt mucosal pathology. As a result, approximately 6% of patients require more than three endoscopic procedures to achieve an accurate diagnosis[7].

As with any severe and acute gastrointestinal bleeding, initial management of a recently bleeding Dieulafoy's lesion prioritizes volume resuscitation to prevent systemic hypotension and subsequent end-organ damage to the heart, brain or kidneys due to hypoperfusion. This involves the placement of multiple, reliable, large-bore intravenous lines. Resuscitation typically begins with crystalloid solutions such as normal saline or Ringer's lactate. However, transfusion of packed red blood cells is often necessary-following blood typing and crossmatching-based on the rate of bleeding and serial hematocrit measurements. Due to the significant blood loss associated with Dieulafoy's lesions, patients frequently require transfusion of three or more units of packed erythrocytes[4]. Our patient required multiple transfusions too. Medical management is generally considered to play a limited role in treating Dieulafoy's lesions with endoscopic therapy and surgical intervention being the primary approaches. Endoscopic treatment has the advantages of being simple in operation, which is easily replicated, micro traumatic, safe & useful and can be performed during the examination.

Endoscopic hemostatic methods include submucosal injection, electrocoagulation, laser therapy, thermal probes, microwave therapy, band ligation, and hemoclip application. Reported success rates exceed 80% and decrease re-bleeding rates to less than 10% within the first 7 days. The mortality rate has declined from 60–70% to approximately 20% due to advancements in treatment8. In this case, hemoclip application proved to be effective in achieving hemostasis and preventing recurrence.

Angiography with gel-foam embolization is an infrequently used treatment option, typically reserved as a last resort when endoscopic methods are unsuccessful. While it can be effective, there is a potential risk of ischemia in the tissue supplied by the embolized artery. This approach is less effective when the bleeding site is fed by multiple collateral vessels. Surgery remains the final option for patients with persistent, uncontrolled bleeding; however, it is associated with a higher mortality rate, largely because these patients are often hemodynamically unstable by the time surgical intervention is considered[9].

Early recognition and prompt endoscopic intervention are essential to prevent morbidity and mortality and alternatives to replace more invasive angiographic and surgical management as was described to be the best practice management. This case underscores the need for high suspicion of Dieulafoy's lesion in patients with unexplained, recurrent UGI bleeding.

Conclusion:

Dieulafoy's lesion, though rare, should be considered in the differential diagnosis of recurrent UGI bleeding. Endoscopic therapy with hemoclips is a safe and effective treatment modality. Timely intervention can significantly reduce morbidity and improve outcomes.

Conflict of Interest: The authors declare no conflict of interest.

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