Esophageal Dieulafoy Lesion: A Rare Cause of Upper Gastrointestinal Bleeding

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**INTRODUCTION**

Named after French surgeon Georges Dieulafoy, Dieulafoy lesions are uncommon but important causes of acute gastrointestinal (GI) bleeding which can be massive and life threatening.\(^1\) Dieulafoy lesions are known to occur anywhere in GI tract but are rarely reported in the esophagus and lower GI tract. Diagnosed endoscopically, they are amenable to treatment but pose a threat of rebleeding after the first intervention. We present a case of 91 year-old female with acute upper GI bleeding due to an esophageal Dieulafoy lesion.

**Case Report**

A 91 year-old African American woman presented with acute left upper extremity pain to emergency department (ED). She was taken to the operating room (OR) for acute limb ischemia. She experienced an episode of hematemesis in the post anesthesia care unit (PACU) with 300 ml of coffee ground aspirate in the nasogastric (NG) tube. She was transferred to intensive care unit (ICU) for hypovolemic shock and respiratory failure. Laboratory studies were significant for drop in hemoglobin from her baseline of 13.6 g/dL to 10.6 g/dL in 12 hours, indicating acute blood loss anemia. Emergent bedside esophagogastroduodenoscopy (EGD) showed coffee ground material in the stomach, necessitating lavage. A single, ectatic blood vessel with stigmata of recent bleeding was visualized in the lower third of the esophagus (Figure 1). The vessel was injected with four cc of 1:10,000 solution of epinephrine, and one hemostatic clip was placed to prevent recurrent bleeding (Figures 2 & 3). She was monitored in the ICU for recurrent bleeding, but she remained stable afterwards with no further rebleeding.

(continued on page 62)
DISCUSSION
Dieulafoy lesions are a rare cause of acute nonvariceal GI bleeding, responsible for approximately 1.5% of acute upper GI bleeding.\(^2\) They can be associated with massive, life threatening bleeding. Initially reported in the stomach only, Dieulafoy lesion have been known to occur elsewhere in GI tract and extraintestinal locations. Most of these lesions, 75-90%, occur in the stomach, generally along the lesser curvature, within five cm of the gastro-esophageal junction. Rarely they can occur in small bowel (around 14-18%) and even more rarely in esophagus (roughly 8%).\(^3,4,5\)

A Dieulafoy lesion is a congenital arteriovenous malformation which bleeds in arterial pulsatile fashion. Unlike normal arteries which go through narrowing of their caliber as they approach the mucosa, the Dieulafoy is a “caliber persistent artery” maintaining its caliber through the submucosa to the mucosa.\(^4\) The caliber of artery is in the range of 1-3 mm, which is approximately 10 times the normal caliber of mucosal capillaries. The mechanism of bleeding is erosion secondary to pulsations of the artery, rather than primary ulceration of mucosa. The mechanism and processes by which the artery maintains its caliber and tortuosity is largely unknown.\(^3\) Bleeding is mostly seen in men with comorbidities such as hypertension, cardiovascular disease, chronic kidney disease, diabetes mellitus or alcohol abuse.\(^4\) Endoscopy is the diagnostic modality of choice. On endoscopy, it appears as a stream of arterial blood emanating from mucosa. A nonbleeding Dieulafoy lesion appears as a raised nipple or visible vessel without an associated ulcer. The diagnosis rates for initial endoscopy range from 49% to 63%, and repeat endoscopy is often required (6%) due to intermittent bleeding.\(^6\) Repeat endoscopy timed as close as possible to a rebleeding event is crucial for the diagnosis. Endoscopic criteria for diagnosis of a Dieulafoy lesion has been established and includes (i) active arterial oozing/spurting from a small defect in the mucosa, (ii) visualization of a small vessel protruding from normal mucosa, (iii) fresh blood clot adherent to a defect of normal mucosa.\(^7\)
Esophageal Dieulafoy Lesion: A Rare Cause of Upper Gastrointestinal Bleeding

A CASE REPORT

(continued from page 62)

of blood flow following intervention. In view of unknown pathophysiology, there is little evidence to support acid suppression therapy to prevent rebleeding. If endoscopy fails, angiography is used as diagnostic intervention as in other causes of GI bleeding. Rebleeding is treated with repeat endoscopic hemostasis, angiographic embolization or surgical wedge resection of the lesion. The long-term rate of rebleeding is low once a Dieulafoy lesion is completely eradicated.

CONCLUSION

Dieulafoy lesions are one of the lesser known cause of massive upper GI bleeding with the stomach being the most common site. This condition can be encountered in any age group. Early endoscopy is essential to identify the source of bleeding and manage it appropriately. It is important to involve gastroenterology, critical care, interventional radiology and surgery in the management of these patients.

References


POSITION AVAILABLE

Johns Hopkins University School of Medicine, Division of Gastroenterology is looking for a gastroenterology hospitalist with experience in ERCP, EUS, and enteroscopy. Applicants should have at least five years of post fellowship experience in gastroenterology and have completed a two year advanced interventional endoscopy fellowship. Experience in motility and fluency in Spanish helpful.

For further information please contact:
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