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CLINICAL VIGNETTE

Dieulafoy's Lesion: Something Not to Be Forgotten

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Case Report

An 86-year-old male with hypertension presented to the Emergency Department with hematemesis and melena. He was hypotensive with a hemoglobin of 7.1 grams/deciliter and was admitted to the hospital. The next day endoscopy was performed. There was Grade A esophagitis and old blood in the stomach, without ulcers or erosions. The duodenum was normal and the culprit lesion was first thought to be the esophagitis. He did well for a few days but developed melena and drop in his hemoglobin. He underwent a push enteroscopy to reevaluate the stomach and small intestines as well as a colonoscopy. There was fresh blood and blood clots in the fundus of the stomach. After clearing the clots there was an active bleeding consistent with a Dieulafoy's lesion a few centimeters from the gastroesophageal junction. Three metallic clips were placed for hemostasis and two milliliters 1:10,000 epinephrine injected submucosally around the site with successful hemostasis. The patient had no further melena and was discharged home a few days later.

General Discussion and Epidemiology

The incidence of acute gastrointestinal bleeding ranges from 50-150 per 100,000 of the population per year.[1] Five percent of bleeding is labeled as obscure. Obscure bleeding is defined as bleeding from a source that cannot be easily investigated with imaging or endoscopy. One common etiology of obscure bleeding is a Dieulafoy's lesion, which can result in life threatening hemorrhage.[2]

Dieulafoy's lesion is a developmental vascular malformation of the gastrointestinal tract. It was first described in 1898 by a French Surgeon, Paul Georges Dieulafoy, as "exulceratio simplex".[3] It involves a blood vessel with an abnormally wide diameter of 1 to 3 mm, protruding from the submucosa into the mucosa with a small mucosal defect.[4] It represents about 1%-2% of all causes of gastrointestinal bleeding.[5]

The mortality rate ranges from 9% and 13%,[6] due to diagnostic difficulties. It should be considered with recurrent unidentifiable hemodynamically unstable gastrointestinal bleeding. Episodes include massive intermittent arterial bleeding, usually with very small lesions without surrounding mucosal ulceration. Often repeated diagnostic tests and endoscopic procedures are needed.[7]

Clinical Presentation and Diagnostic Options

Approximately half of patients present with hematemesis and melena together, with less than 20% with melena alone.[6] The stomach is the most common site with 80-95% occurring 6-10 cm from the gastroesophageal junction, usually on the lesser curvature as with our patient.[8] About 30% are located outside of the stomach, most frequently in the duodenum followed by the colon.[9]

Two modalities for evaluation are endoscopy and imaging and it is usually diagnosed with endoscopy. The optimal time for endoscopy is during or immediately following an episode of bleeding. About half are identified during initial endoscopy, with 33% requiring additional endoscopy to identify the source of bleeding.[10] Possible findings for Dieulafoy's lesion include active arterial spurting, a protruding vessel within a minute mucosal defect, or an adherent clot to a minute defect or normal mucosa.[11] Endoscopic ultrasound has revealed submucosal vessels near the small mucosal defect.[12] Push enteroscopy and capsule endoscopy are also useful to localize small bowel Dieulafoy's lesions.[13]

Angiography is used when endoscopy is unable to localize the culprit lesion. The diagnosis of Dieulafoy's lesion is suggested if active bleeding is seen from a tortuous and ectatic artery. Angiography is especially helpful for colon lesions with poor bowel preparation or active bleeding.[13]

Management and Outcomes

The evolution of endoscopic techniques has greatly reduced the need for surgery in Dieulafoy's lesions. Surgery and selective arterial embolization are now used only for intractable bleeding with unsuccessful endoscopic therapy.[14] The three types of endoscopic therapy are regional injection, thermal, and mechanical.

Regional injection involves epinephrine or sclerotherapy. Epinephrine alone is not recommended when there is a risk of rebleeding. Sclerotherapy is less commonly used given perforation risks. Thermal therapy includes argon plasma coagulation (APC) and bipolar therapy, which are highly effective. The disadvantages of APC include situations where superficial therapy may not be adequate, and lack of ready availability. Mechanical treatment with hemoclips is a great option for Dieulafoy's lesions. Hemoclips are less likely than thermal treatments to cause necrosis. A disadvantage is difficulty to

deploy therapy due to location such as the proximal stomach that requires a retroflexed view.[15] Another technique is endoscopic band ligation, which is not used as frequently. A disadvantage is the longer time to assemble this device, and small studies have not shown a difference between hemoclips vs. endoscopic band ligation.[16] There are no guidelines recommending one therapy, but combined endoscopic therapies, as with our patient, have a lower re-bleeding rate vs. endoscopic monotherapy.[17]

Conclusion

Dieulafoy lesions can be covert in presentation, so it is important for clinicians to be aware of this entity. Lesions can cause life threatening hemorrhage especially if not identified promptly. Endoscopy remains the treatment of choice with combined techniques for definitive hemostasis. Dieulafoy's lesions should be included in the differential diagnosis of all obscure gastrointestinal bleeding.

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