

A rare cause of upper gastrointestinal bleeding in the elderly: gastric arteriovenous malformation

Summary

The frequent causes of upper gastrointestinal bleeding, namely peptic ulcer disease, portal hypertension, gastroduodenal erosions, and reflux esophagitis, account for approximately 80% of episodes.¹ Gastrointestinal bleeding secondary to gastric arteriovenous malformation (AVM) is rarely reported in the literature.^{2,3} Here, we describe a new case of upper gastrointestinal bleeding secondary to an AVM located at the gastric tuberosity.

Keywords: arteriovenous malformation, gastrointestinal bleeding.

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Introduction

We present a case of a 65-year-old female patient with a history of type 2 diabetes mellitus managed with oral antidiabetic agents and lumbosciatalgia treated with NSAIDs. She was admitted to our institution due to hematemesis evolving over 48 hours, with stable hemodynamics and overall general condition. Physical examination revealed hemodynamically and respiratorily stable condition, with unremarkable abdominal findings but positive for melena on rectal examination. Laboratory investigations showed a hemoglobin level of 11 g/dL. Esophagogastroduodenoscopy (EGD) revealed a submucosal lesion with a tortuous, sinuous appearance on the greater curvature of the stomach, accompanied by a small ulceration without active bleeding. Subsequent abdominal CT-angiography demonstrated a tortuous submucosal vascular formation arising from the left gastric artery protruding into the gastric lumen, without contrast extravasation.^{4,9} Due to the unavailability of arterial embolization at our facility, gastric surgery was recommended; however, the patient declined surgical intervention. There were no further hemorrhagic episodes during a 9-month follow-up period.

Discussion

Arteriovenous malformations (AVMs) are congenital lesions involving abnormal connections between arteries and veins, likely resulting from developmental anomalies of the embryonic vascular plexus leading to impaired vascular maturation in specific areas, exacerbated by aging-related changes. Digestive AVMs represent only 1-2% of upper gastrointestinal bleeding cases, with the most common sites being the cecum and ascending colon. Gastric AVMs are relatively rare, and their etiology remains unclear, although degenerative changes in the digestive tract wall have been implicated. Literature suggests a mean age of 56 years at diagnosis, with a slight male predominance. Our case aligns with these demographics.

Classification proposed by Moore et al. in 1976 categorizes AVMs into three types: Type 1 (solitary, localized, microscopic lesions typically occurring later in life), Type 2 (congenital lesions present earlier in life), and Type 3 (gastrointestinal lesions associated with hereditary hemorrhagic telangiectasia). Our case would be classified as Type 1 based on the patient's age and the solitary lesion found.

Clinically, digestive AVMs may be asymptomatic or present with hematemesis, melena, or iron deficiency anemia. EGD is the primary diagnostic modality for upper gastrointestinal bleeding, aiding

in lesion localization, although its utility is limited during active bleeding. Macroscopically, gastric AVMs appear as bright red lesions, flat or nodular, sometimes resembling telangiectasia (Figure 1 & 2).



Figure 1 MAV on the greater curvature of the stomach.



Figure 2 Abdominal CT angiography revealing the gastric arteriovenous malformation at the level of the greater curvature of the stomach.

Digital subtraction angiography (DSA) serves as both a diagnostic tool and a therapeutic method for temporary hemostasis. Roy-Choudhury et al. demonstrated that contrast-enhanced multidetector CT scan with multiplanar reformation is more sensitive than DSA in detecting gastrointestinal arterial bleeding, owing to its lower threshold for detecting active arterial bleeding. Therapeutic management of hemorrhagic gastric AVMs may involve endoscopic, angiographic,

surgical, or combined approaches. While endoscopic coagulation or angiographic embolization may suffice for small gastric AVMs, complete resection is recommended for larger lesions or those with persistent bleeding.⁹⁻¹²

Conclusion

Gastric AVMs are a rare cause of upper gastrointestinal bleeding, warranting consideration when the source of bleeding cannot be identified during EGD.

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