

Gastric cavernous hemangioma in 48-years male patient: a rare case presenting upper gastrointestinal bleeding manifestations

Coana Sukmagautama¹, Aiman Hilmi Asaduddin², Ulya A'malia², Desy Puspa Putri¹

¹Internal Medicine Department, Faculty of Medicine, Universitas Sebelas Maret, Surakarta, Indonesia

²Faculty of Medicine, Universitas Sebelas Maret, Surakarta, Indonesia

ABSTRACT

Gastric hemangioma (GH) is a rare benign tumor that may cause to upper gastrointestinal bleeding. Furthermore, this condition could lead life-threatening conditions thus should be recognized sooner to minimize unnecessary invasive surgical intervention, and accident. We reported a 48 years old man which came to emergency room (ER) with the chief complaint of hematemesis and black stool accompanied by abdominal pain, cold sweat, body weakness and enlarger stomach. Physical examination showed slightly icteric eye, and conjunctival pallor. On palpation, the epigastric and right upper quadrant was tender, and occult blood was detected in the excrement. A minor microcytic hypochromic anemia, absolute neutrophilia, hypoalbuminemia, and an increase in urea and creatinine were determined by laboratory tests. Moreover, the esophagogastroduodenoscopy was performed, and showed broad mass with dilated blood vessels. The histopathological examination result showed gastric mass with the histological erythrocyte extravasation. The diagnosis was hematemesis melena owing to cavernous GH with differential diagnosis of hematoma, and other gastric mass, with anemia gravis. For the treatment, patient received fluid resuscitation, omeprazole, tranexamic acid, somatostatin, and antibiotics. He received two kolfs transfusion of packed red cell. Gastric hemangiomas are benign vascular tumors that can lead to severe gastrointestinal bleeding. These benign tumors are lesions that develop as a result of endothelial cell proliferation, and concomitant pericytic hyperplasia, which leads to a collection of dilated vessels. The cavernous subtype of GHs often comprises of bigger blood-filled areas and larger blood vessels. It is more likely for the cavernous GH to rupture, leading to substantial bleeding. Endoscopic assessment is important in the patients with upper GI bleeding, and GH appear as well-circumscribed vascular submucosal mass. Although this disease is benign with a lower recurrence, we suggest for further surgical treatment and the requirement for long-term follow-up to assess the outcome.

Keywords: Gastric cavernous hemangioma, Endoscopy, Histopathology.

(Please cite as: **Sukmagautama C, Asaduddin AH, A'malia U, Putri DP. Gastric cavernous hemangioma in 48-years male patient: a rare case presenting upper gastrointestinal bleeding manifestations. Gastroenterol Hepatol Bed Bench 2023;16(3):336-340. <https://doi.org/10.22037/ghfbb.v16i2.2773>).**

Introduction

Upper gastrointestinal bleeding can be danger if not managed timely or properly. Serious effects include respiratory distress, myocardial infarction, infection, shock, and, worst of all, fatality might result (1). In the third year of following admission, the mortality rates from all causes are close to 37% (2). Hematemesis and melena are both often seen clinical signs of upper gastrointestinal hemorrhage. Hematemesis is the process of having blood mingled with stomach contents

or regurgitated. Melena is a term used to describe black, dark, and tarry feces. Its distinctive odor is brought on by the action of intestinal bacteria and digestive enzymes on hemoglobin (1).

Gastric hemangioma (GH) is a rare benign tumor that usually develops from congenital abnormalities of the mesenchymal tissues, particularly angioblastic cells, and only accounts for 1.6% of benign tumors of stomach. It is one of the uncommon disorders that may lead to upper gastrointestinal bleeding (3, 4). It may be very difficult to detect the condition because of its rarity and unique features, which might pose a significant diagnostic problem and perhaps need surgical excision. Among the most common symptoms are epigastric discomfort, dyspepsia, and upper gastrointestinal bleeding, which can

Received: 01 February 2023 Accepted: 25 March 2023

Reprint or Correspondence: Aiman Hilmi Asaduddin, Faculty of Medicine, Universitas Sebelas Maret, Surakarta, Indonesia.

E-mail: aimanhilmi02@student.uns.ac.id

ORCID ID: 0000-0002-2518-1800

be gradual and subtle or acute and life-threatening conditions (4). However, this case should be recognized immediately to minimize unnecessary invasive surgical intervention. Herein, we describe an upper gastrointestinal bleeding caused by GH.

Case report

A 48 years old man came to the emergency room (ER) with the chief complaint of hematemesis and black stool accompanied by abdominal pain, cold sweat, body weakness, and stomach seemed enlarger for past weeks. He confirmed that he routinely consumed herbal medicine and alcohol as a youth. He had no history of intestinal hemorrhage, black stools, or bowel habit changes in the past. Previously, he had been confined to the hospital due to a biliary disorder. Moreover, patient denied for history of hypertension, trauma, diabetes, or

using antiplatelet, anticoagulant, and steroid.

On the arrival at ER, the patient was hemodynamically stable with the blood pressure (BP) was 121/78 mmHg, pulse 126 beats per minute (bpm), respiration rate (RR) 20x/minutes, SPO2 92%, body weight 70 kg, height 158 centimeter. A visual examination revealed paler conjunctiva and a little icterus. No murmurs or other abnormalities were detected; only normal cardiac sounds were audible. When the right upper quadrant and the epigastrium were palpated, there was soreness. During a rectal examination, feces that tested positive for occult blood were found. For the laboratory test at ER, the result was slight microcytic hypochromic anemia (Hb 12.7 g/dL, MCV 84.5/UM, MCH 29.3 pg), absolute neutrophilia (neutrophil 83.4%, leucocytes 23.85 x 10³/μl), hypoalbuminemia (3.2 g/dL), and elevation of urea (66 mg/dl) and creatinine (1.38 mg/dL) with the normal liver

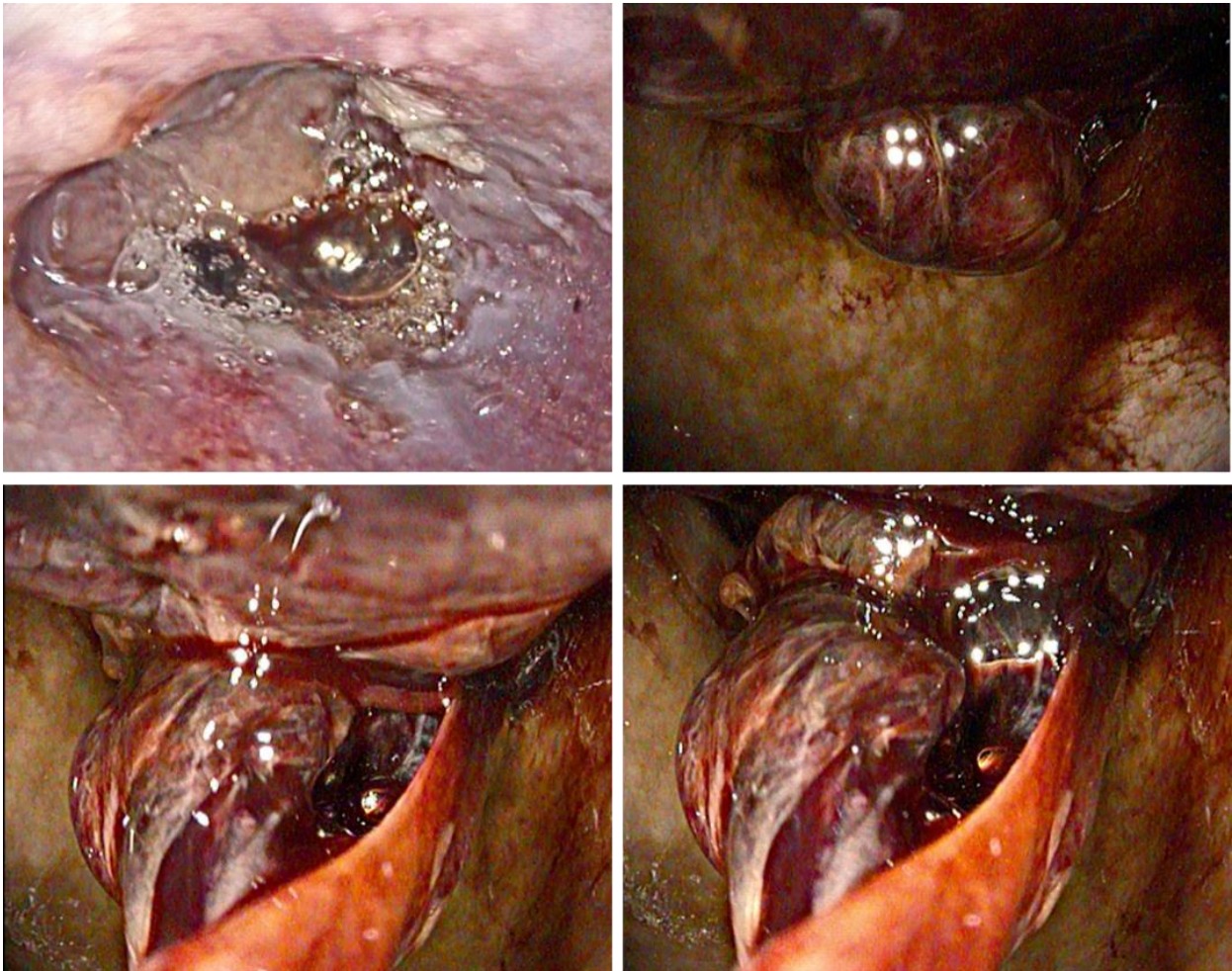


Figure 1. Esophagogastroduodenoscopy showed broad mass with dilated blood vessels extended from the gastric fundus via the angulus.

338 Gastric cavernous hemangioma: a rare case presenting upper gastrointestinal bleeding manifestations

function test, and normal prothrombin time test.

An upper esophagogastroduodenoscopy (EGD) was performed (Figure 1). The lower esophageal sphincter (LES) was not in a good condition. The entire area of gastric mucosa was hyperemic, and there was a gaping pylorus, and a broad mass with dilated blood vessels (hemangioma) that extended from the gastric fundus via the angulus. Duodenum was shown hyperemic. The results of the histopathological investigation showed a stomach mass with histological erythrocyte extravasation, which is a characteristic of hematomas and hemangiomas. The biopsy revealed tissue pieces without any evidence of cancer (Figure 2), including extensive extravasations of erythrocytes, necrotic tissue, lymphocytes, and macrophages. Thus, the patient was diagnosed as hematemesis melena owing to gastric cavernous hemangioma with differential diagnosis of hematoma and other gastric mass, with anemia gravis.

In the ER, the patient was given injection of omeprazole 40 mg, ondansetron 8 mg, tranexamic acid 500 ml, supportive therapy, and intravenous fluid resuscitation with the streamed nasogastric tube (NGT). Because of stability hemodynamic, he was transferred to the hospital. Ondansetron 8 mg/12 hours, tranexamic acid 500 mg/8 hours, omeprazole 40 mg in normal saline 25 cc on syringe pump, vitamin K 1 amp/18 hours, somatostatin 1 vial diluted in 50 cc normal saline, and injections of antibiotics ceftriaxone 2 gr/24 hours and metronidazole

500 mg/8 hours were all administered to him at the ward. Before there are no longer any blood products in NGT, patients are recommended to fast. At day 6 at the ward hospital, the patient still developed hematemesis and intermittent black stool, and the hemoglobin dropped to 5.9 g/L with MCV 86.4/UM, MCH 29.8 pg and absolute neutrophilia (neutrophil 81.6%, leucocytes $21.94 \times 10^3/\mu\text{l}$). Regarding these conditions, patient received two kolfs transfusion of packed red cell and emergently transferred to gastroenterology and hepatology sub-specialist for further treatment.

Discussion

Hemangiomas may occur in all organs, especially on the body surface as isolated or multiple lesions. But, hemangioma rarely observed in visceral organs, except the liver (5). Gastric hemangiomas, one of visceral hemangioma, are benign vascular tumors that can lead to severe gastrointestinal bleeding (5). These benign tumors are lesions that arise from endothelial cell proliferation together with concurrent pericytic hyperplasia or aberrant pericyte division, which results in a group of dilated vessels (6). Gastrointestinal hemangiomas were pathologically classified by Kaijser as Multiple phlebectasia, cavernous hemangioma, capillary hemangioma, and angiomatosis (7).

Between 40% and 60% of all gastrointestinal hemangiomas have multiple phlebectasia. Rarely, the

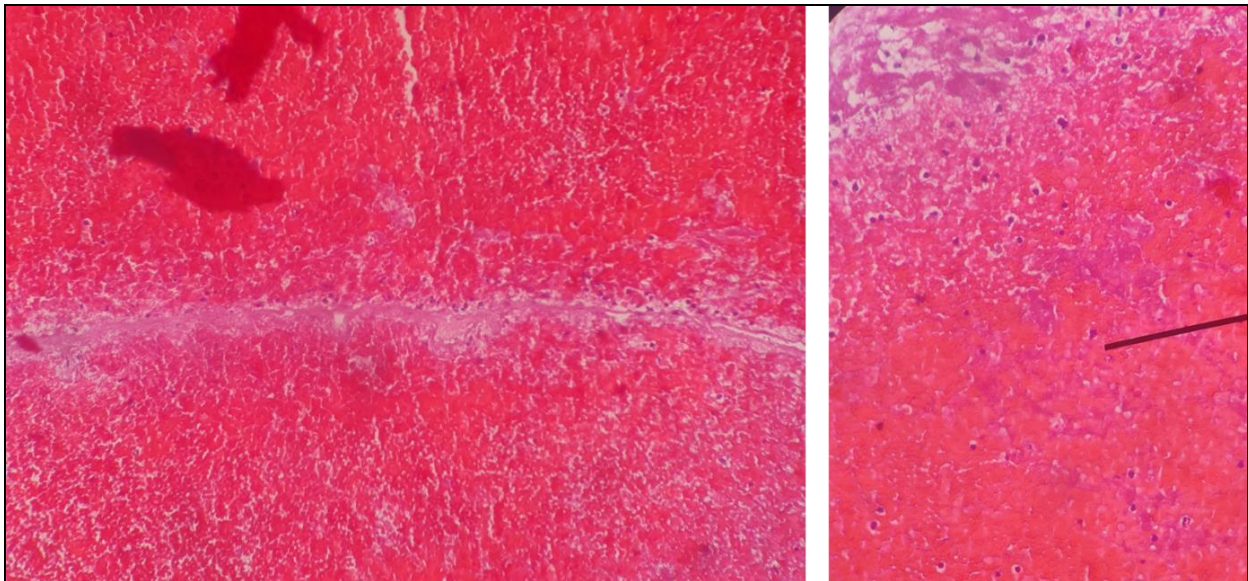


Figure 2. Histopathological examination result revealed gastric mass with the histological erythrocyte extravasation that could be found in hemangioma (Hematoxylin-Eosin Staining; Left 40x, Right 100x).

muscularis propria, and the subserosa have also been the site of these 1–5 mm lesions, which typically affect the submucosa. An autosomal dominant form found in Osler-Rendu-Weber illness and a non-hereditary variety were identified. Both methods carry a considerable risk of bleeding (8). The cavernous subtype, on the other hand, often consists of bigger blood vessels with broader gaps (caverns) or sinuses that are coated with one or more layers of endothelial cells (9). Thus, the cavernous GH are more prone to rupture, which resulting in significant bleeding (6). Besides, capillary hemangioma, which represent fewer than 10% of all hemangiomas, is a proliferation of small capillaries composed of thin-walled, blood-filled spaces lined by endothelial cells (9). This capillary subtype is usually solitary, well-circumscribed intraluminal growths around 1 cm in diameter (8). Another hemangioma is linked to hemangiomatosis, which frequently associated with extragastrintestinal hemangioma. It consisted between 2% and 12% of all hemangiomas and cannot be distinguished from diffuse cavernous hemangioma grossly (8). In this instance, the EGD examination revealed a wide mass that matched a gastric cavernous hemangioma and had dilated blood vessels extending from the fundus through the angulus.

GHs are frequently found asymptomatic, and mostly identified accidentally advance imaging techniques. Epigastric pain and concomitant GI bleeding are the characteristic signs of symptomatic GH, with heavy sudden onset, occasionally recurrent bleeding from cavernous-type tumors presenting with anemia, hematemesis, and/or melena symptoms (4, 6, 10, 11). In our case, the patient present all of those symptoms, and planned for EGD examination. Therefore, USG, endoscopic USG, CT, abdominal magnetic resonance imaging (MRI), and angiography are essential components of the imaging modality. As non-invasive preoperative evidence of resectability (7), radiological examinations are advantageous for demonstrating the location and structure. The combination between imaging and endoscopic assessment may provide more effective, especially with the occurrence of phleboliths as pathognomonic presentation of GHs in CT-scan (6). Thus, our patient was not examined for imaging modality because there was gastrointestinal warning sign, which were hematemesis and melena. Endoscopic assessment is

importance in the patients with upper GI bleeding. In most cases, GH manifests as well-defined, vascular submucosal masses that range in color from bluish-black to brilliant red, with or without calcification (6, 12). We only found vascular submucosal mass ranging from gastric fundus through the angulus.

The diagnosis of this case was acquired by histopathology examination, which showed histological erythrocyte extravasation without sign of malignancy. Previous study described that extravasated red blood cells are frequently identified in anastomosing hemangioma (13). The submucosal placement and dense vascular character of such lesions, however, restrict the significance of endoscopic biopsy investigation for the histological identification of hemangiomas (4). Endoscopic biopsy was thus unable to provide a firm diagnosis. Severe hemorrhage may occur in terms of rupture of GH, which lead to rapid hemodynamic decompensation and should be treated emergently (6). Our patient showed signs of hemodynamic compromise, which was treated with adequate fluid resuscitation and blood transfusion. The combination of somatostatin and omeprazole has been suggested in a prior research as a potentially effective therapy option for the management of acute upper gastrointestinal bleeding (14). Somatostatin analogue was given to decrease the portal pressure and antibiotics should be started to reduce the risks of infection (15). However, surgical involvement is considered as the main curative treatment following supportive pharmacotherapy in adult patients with no reports of recurrence after complete resection (6).

Conclusion

We reported a case of gastric cavernous hemangioma in 48-years male patient originating from the gastric fundus via the angulus. Despite biopsy examination is limited because of the submucosal localization and dense vascular nature of such lesions, our assessment showed histological erythrocyte extravasation without sign of malignancy, which could be found in hemangioma or hematoma. Although the current condition is benign and has a low recurrence rate, we recommend further surgical treatment and the need for long-term follow-up to evaluate the results.

Acknowledgement

We would like to extend our gratitude to our patient who have consent to this study and colleagues who provided valuable suggestions about the manuscript.

Conflict of interests

Authors have no potential conflicts of interest to disclose.

References

1. DiGregorio AM, Alvey H. Gastrointestinal bleeding [Internet]. Treasure Island (FL): StatPearls Publishing. 2022 [cited 2023 Feb 1]. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK537291/>.
2. Roberts SE, Button LA, Williams JG. Prognosis following upper gastrointestinal bleeding. *PLoS ONE* 2012;7:49507.
3. Ojili V, Tirumani SH, Gunabushanam G, Nagar A, Surabhi VR, Chintapalli KN, et al. Abdominal hemangiomas: a pictorial review of unusual, atypical, and rare types. *Can Assoc Radiol J* 2013;64:18–27.
4. Basbug. Isolated cavernous hemangioma: a rare benign lesion of the stomach. *J Clin Med Res* 2012;4:354-7.
5. Kaya H, Gokce IK, Gungor S, Turgut H, Ozdemir R. A newborn with gastric hemangioma treated using propranolol. *Pediatr Gastroenterol Hepatol Nutr* 2018;21:341–6.
6. Sun A, Sun J, Sun CK. Cavernous gastric hemangioma as an unusual cause of upper gastrointestinal bleeding in a young woman. *Case Rep Gastroenterol* 2022;16:1–7.
7. Zong L, Chen P, Shi GH, Wang L. Gastric cavernous hemangioma: a rare case with upper gastrointestinal bleeding. *Oncol Lett* 2011;2:1073–5.
8. Bruneton JN. Benign Vascular Tumors. In: Bruneton JN, editor. *Imaging of gastrointestinal tract tumors* [Internet]. Berlin, Heidelberg: Springer Berlin Heidelberg. 1990. p. 60–4. Available from: https://doi.org/10.1007/978-3-642-83825-5_6.
9. Levy AD, Abbott RM, Rohrmann J, Frazier AA, Kende A. Gastrointestinal hemangiomas: imaging findings with pathologic correlation in pediatric and adult patients. *Am J Roentgenol* 2001;177:1073–81.
10. Marino D, Ferreira K, Hussain Z. A rare case of gastrointestinal bleeding: gastric cavernous hemangioma. *Am J Gastroenterol* 116:S989–90.
11. Watanabe Y, Takahashi K, Yokoyama J, Terai S. Gastric cavernous hemangioma resected by endoscopic submucosal dissection. *Intern Med* 2018;57:2269–70.
12. de Beaux AC. *Gastrointestinal Disease: An Endoscopic Approach*. 2nd ed. A. J. DiMarino and S. B. Benjamin (eds) 285 × 223 mm. Pp. 1488. Illustrated. 2002. Slack Incorporated: Thorofare, New Jersey. £245.00. *Br J Surg* 2003;90:251.
13. Lappa E, Drakos E. Anastomosing hemangioma: short review of a benign mimicker of angiosarcoma. *Arch Pathol Lab Med* 2020;144:240-4.
14. Feng L, Fu J. Somatostatin plus gastroscopic administration of omeprazole for the treatment of acute upper gastrointestinal bleeding: an exploration of a promising alternative. *Evid Based Complement Alternat Med* 2022;2022:6329592.
15. Albeldawi M, Qadeer MA, Vargo JJ. Managing acute upper GI bleeding, preventing recurrences. *Clevel Clin J Med* 2010;77:131–42.