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CASE REPORT

NON-VARICEAL UPPER GASTROINTESTINAL BLEEDING FROM A DIEULAFOY LESION

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Abstract

Introduction. Dieulafoy's disease is an abnormal arterial flow that typically occurs in a gastric cavity underneath the mucous membrane and has an unusual course. It is uncommon, representing 5% of the non-variceal higher-order hemorrhages, and is associated with high morbidity and mortality.
Case presentation. We describe the case of a 47-year-old female patient with a family history of pulmonary fibrosis from her father and psoriasis from her mother. Without any significant prior medical history, the patient presented to the Emergency Department with epigastric abdominal pain accompanied by nausea and vomiting twice while drinking coffee, melodramatic evacuations, and a loss of alertness. The patient was given a blood transfusion at the hospital due to low hemoglobin. The left gastric artery was angiographically evaluated and embolized during the radiological intervention, revealing a Dieulafoy lesion. The procedure was executed without any complications, with symptoms remission. There were no symptoms'

Résumé

Hémorragie gastro-intestinale haute non variqueuse d'une lésion de Dieulafoy

Introduction. La maladie de Dieulafoy est un flux artériel anormal qui survient généralement dans une cavité gastrique sous la membrane muqueuse et a une évolution inhabituelle. Elle est rare, représentant 5 % des hémorragies non variqueuses d'ordre supérieur, et est associée à une morbidité et une mortalité élevées.
Présentation du cas. Nous décrivons le cas d'une patiente de 47 ans ayant des antécédents familiaux de fibrose pulmonaire du côté de son père et de psoriasis du côté de sa mère. Sans antécédent médical significatif, le patient s'est présenté aux urgences avec des douleurs abdominales épigastriques accompagnées de nausées et de vomissements à deux reprises en buvant du café, d'évacuations mélodramatiques et d'une perte de vigilance. Le patient a reçu une transfusion sanguine à l'hôpital en raison d'un faible taux d'hémoglobine. L'artère gastrique gauche a été évaluée angiographiquement et embolisée lors de l'intervention radiologique,

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recurrence, and the clinical evolution of the patient was good.

Conclusions. Dieulafoy's lesion is rare but must be considered in the differential diagnosis of gastrointestinal bleeding. The management by radiological or endoscopic techniques is recommended when possible.

Keywords: gastrointestinal bleeding, hematemesis, melena, Dieulafoy lesions.

révélant une lésion de Dieulafoy. L'intervention s'est déroulée sans aucune complication, avec une rémission des symptômes. Il n'y a pas eu de récidive des symptômes et l'évolution clinique du patient a été bonne.

Conclusions. La lésion de Dieulafoy est rare mais doit être évoquée dans le diagnostic différentiel d'hémorragie gastro-intestinale. La prise en charge par techniques radiologiques ou endoscopiques est recommandée lorsque cela est possible.

Mots-clés: hémorragie gastro-intestinale, hématémèse, méléna, lésions de Dieulafoy.

Introduction

In 1898, the French surgeon Paul Georges Dieulafoy described the Dieulafoy lesion (DL) as a massive gastric aneurism[1]. DLs have an increased prevalence in Caucasian males aged 65–79 years, over the past ten years[2]. Caucasians are impacted more than all other races combined[2]. The patient specific factors enhance the risk of bleeding from DLs, such as advanced age, numerous comorbidities, gastritis or duodenitis, liver cirrhosis, chronic renal disease, atrial fibrillation, alcohol abuse, and use of nonsteroidal anti-inflammatory drugs, antiplatelet medications, or anticoagulants[3]. A DL is a rare form of vascular abnormality characterized by an abnormally dilated small artery that runs in a tortuous path under the skin. The overlying mucosa is usually normal, and there are usually no bleeding symptoms. However, there is a massive blood loss from the DL, leading to death. DLs have been reported throughout the digestive tract, but most are found in the upper digestive tract, particularly in the stomach and duodenum. However, DLs are very rare in the duodenal diverticulum[4]. The artery has a diameter of 1–3 mm in the DL, almost ten times larger than typical arteries at the muscularis mucosae level, increasing the possibility of major bleeding. The lump typically develops 6–10 cm from the gastroduodenal junction. DLs are more frequently found in the slight curvature and the stomach (67%), as opposed to the lower section (25%)[5].

While there are injuries throughout the entire gastrointestinal tract, no symptoms are usually apparent when this rare lesion first appears[6]. Gastrointestinal endoscopy is used to make the DL diagnosis. Most patients who present with bleeding require therapy to stop it, typically via minimally invasive techniques such as endoscopy or angiography; a few cases require surgery[7].

We present a clinical case of DL to highlight this rare disease, that should be considered in patients with painless, sudden onset, and recurrent upper gastrointestinal bleeding, prioritizing its diagnosis and treatment, because of high mortality.

Case presentation

A 47-year-old female patient from Tezontepec de Aldama, Hidalgo, Mexico, had the following personal history: an elbow-shaped gallbladder diagnosed 11 years ago, an episode of syncope of undetermined etiology, and typhoid fever at age 12 years. The patient presented to a private medical service for epigastric abdominal pain accompanied by nausea and recurrent brown granular vomiting, melenic stools, hematemesis, and loss of consciousness. Based on these findings, she was referred to the regional hospital, where she showed improvement and was discharged after one month.

One day later, she lost consciousness for 15 minutes and was admitted to the state hospital, presenting with drowsiness, moderate dehydration without cardiopulmonary alteration, pale skin, deep pain on deep palpation of the epigastrium, increased peristalsis frequency, and the following vital signs: blood pressure of 84/46 mmHg, mean arterial pressure of 58 mmHg, oxygen saturation of 92%, heart rate of 98 bpm, and temperature of 37.5°C. She presented a melenic stool soon after hospitalization and persistent non-perfusing mean arterial pressures. The laboratory studies performed are summarized in Table 1. The patient was transfused with two packed erythrocytes because the initial laboratory assessment revealed a hemoglobin level of 6.5 g/dL. A panendoscopy was required, to identify the cause of the gastrointestinal bleeding, confirming a DL in the gastric fundus. A hemoclip was successfully implanted, and the patient maintained a hemoglobin level of 9.1 g/dL during follow-up.

Three days later, the patient suddenly presented diaphoresis, decreased alertness, and pallor, with a blood pressure of 71/43 mmHg, oxygen saturation of 85%, heart rate of 68 bpm, respiratory rate of 20

Table 1. Summary of laboratory tests.

Laboratory data		*1st day*	*2nd day*	*3rd day*	*4th day*	*5th day*	*11th day (8h)*	*11th day (18h)*	*14th day*	*21th day*	*29th day*
gy	WBC count (million/mm^3)	12	7.43	9.1	7.4	11.4	8.2	17.1	7.9	5.4	3.74
	RBC count (million/mm^3)	2.09	2.68	3.14	3.09	2.31	2.69	3.1	2.72	2.88	3.25
	Hb (g/dL)	6.5	7.3	9.4	9.5	6.7	7.9	9.6	7.9	8.1	8.8
	Hct (%)	18.5	23.3	27.7	27.4	20.4	24.6	27.5	24.1	25	27.3
	Platelet count (million/mm^3)	234	202	312	290	305	318	250	279	392	327
	MCV µm^3	88.6	87	88.5	88.8	88.7	91.8	89	88.9	87.1	83.8
	MCH (pg/cell)	31.1	27.3	29.9	27.5	29	29.3	30.9	29	28.1	27.1
	Reticulocyte count (%)		3.54		5.78						1.83
Coagulation times	TP (s)	13.6				13.8		15.6	12.6	13.8	
	aPTT (s)	28.4				20.9		21	25.2	28.4	
	INR	1.19				1.21		1.37	1.1	1.21	
	Fibrinogen (mg/dL)	460				519		510	508	643	

Legend: aPTT – activated partial thromboplastin time, Hct – hematocrit, Hb – hemoglobin, INR – international normalized ratio, RBC – red blood cells, MCB – mean corpuscular volume, MCH – mean corpuscular hemoglobin, TP – prothrombin time, WBC – white blood cells.

breaths per minute, and temperature of 36.5°C. She was stabilized by loading with Hartmann's solution. Another emergency panendoscopy was performed, which observed hematic remains in the distal third of the esophagus and a large, organized clot in the stomach that covered 40% of the gastric lumen, which could not be aspirated. The patient continued to have asthenia, adynamia, and a tendency toward drowsiness. A nasogastric tube was placed, and she presented four 800 mL melenic stools. She was again transfused with red blood cell concentrate, leading to a hemoglobin level of 7.4 g/dL.

The patient was given a packed erythrocyte when her symptoms persisted, and another panendoscopy was performed to complete the study. This time, an active bleeding vessel was observed and triple-clipped to stop the blood flow. After this operation, the patient started a liquid diet and showed clinical improvement. Then, a control panendoscopy showed a DL with stigmata from recent bleeding and hemoclips, upper digestive bleeding in remission, sclerotherapy, and the insertion of hemoclips. It was decided to be referred to the interventional radiology department due to these findings.

Finally, interventional radiology was used to perform diagnostic arteriography and embolization of upper digestive tract bleeding, reporting the location of the anatomical variant based on the appearance of the left hepatic artery. Left gastric artery angiography found prominent arteries up to 1 mm in diameter. The left stomach artery's distal section was embolized. After treatment, the patient showed improvement and could tolerate a liquid oral diet. Before increasing activity levels, the patient must show no changes of the cardiovascular system, must have normal oral mucosa, a soft, depressible abdomen, peristalsis, a sufficient tolerance to nutrition, no signs of bleeding, and no melenic stools. The patient was discharged from the hospital with a hemoglobin level of 8.8 g/dL, a blood pressure of 115/69 mmHg, a heart rate of 69 bpm, a respiratory rate of 19 breaths per minute, a temperature of 36°C, and an oxygen saturation of 96%.

Discussion

DLs can cause severe bleeding if left untreated, and are a rare but significant cause of gastrointestinal

hemorrhage. Endoscopic treatment is preferred because of its high success rate[8]. Endoscopic band ligation and hemostatic clipping are the most successful procedures for DLs, with cyanoacrylate and hemoclip placement effectively stopping DL bleeding[9,10]. In addition, a recent meta-analysis of 1280 patients with non-variceal upper gastrointestinal hemorrhage showed that Hemospray TC-325, a powder that can halt bleeding for up to 72 hours, has significantly greater technical and clinical effectiveness than conventional hemostatic methods[11].

Various endoscopic approaches have been described to achieve hemostasis. However, some patients may experience fresh bleeding after receiving endoscopic therapy. The DL endoscopic diagnostic criteria include the following: active arterial flow or micropulsatile flow from a tiny (<3 mm) mucosal change, direct visualization of the protruding vessel with or without active bleeding within the mucosal defect and normal mucosa along the periphery, and indications of a densely adherent clot with a tight attachment point to a mucosal defect or normal appearing mucosa[12]. It is not unusual to need numerous endoscopies to make a diagnosis[13]. It has also been advised to use angiography to identify bleeding sources that are inaccessible by endoscopy[7].

Conclusion

DL is rare but must be considered in the differential diagnosis of gastrointestinal bleeding. The management by radiological or endoscopic techniques is recommended where possible.

Authors Contribution:

Conceptualization: O.M.G.C., S.A.A.M., A.A.R. Formal analysis: J.A.I.V., A.A.R. Supervision: J.A.I.V. Writing – original draft: J.A.I.V., M.S.G. Writing – review & editing: J.A.I.V., M.S.G. J.A. All the authors have read and agreed with the final version of article.

Compliance with Ethical Requirements

"The authors declare no conflict of interest regarding this article". "The authors declare that all the procedures and experiments of this study respect the ethical standards in the Helsinki Declaration of 1975, as revised in 2008(5), as well as the national law. Informed consent was obtained from the patient included in the study".

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