An unusual cause of hemorrhagic shock: gastric Dieulafoy's lesion

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ABSTRACT

Dieulafoy's lesion (DL) related massive gastrointestinal bleeding is a rare and mortal health condition. DL is a superficial vascular lesion of the gastric mucose that is mostly located in the proximal part of the stomach which is difficult to diagnose. Endoscopy is a safe and effective method for diagnosis and treatment. However, emergency surgery should be essential for diagnosis and treatment. Here we present a succesfull clinical and surgical management of a case with massive gastrointestinal bleeding related to gastric DL.

Keywords: Dieulafoy's lesion, hemorrhagia, shock

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Dieulafoy's lesion (DL) is a rare cause of gastrointestinal bleeding that prolonged diagnosis usually presents with life-threatening health conditions. It was identified by Gallard for the first time in 1884 and was named by the French surgeon Georges Dieulafoy in 1898 [1]. DL is described as a large arteriolar lesion protruding from the mucosal defects by erosion in the submucosa which may cause massive bleeding. DL is observed especially in male (Male/Female: 2/1) and elderly patients presenting with multiple co-morbidities including, hypertension, cardiovascular disease, chronic kidney disease and diabetes [2]. In regard to these co-morbidities, non-steroidal anti-inflammatory drugs, aspirin and warfarin use have also been linked to DL [3]. The effects of smoking and alcohol consumption in DL are controversial [4].

DL presents with recurrent massive bleeding attacks and clinical manifestation varies between obvious and obscure hematemesis and/or melena findings [5]. Therefore, intermittent clinical course of DL complicates the initial diagnosis and appropriate treatment. Gastrointestinal endoscopy, angiography, scintigraphy and surgery are diagnostic and therapeutic options in DL. Definitive diagnosis and treatment of DL is challenging and depends on the clinicians' experience.

This article is aimed to provide a review of diagnostic and therapeutic approaches to the DL presented with hemorrhagic shock during hospitalization and a clinical perspective for clinicians even in challenging diagnosis with complicated clinical courses.

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CASE PRESENTATION

A 62-year-old male patient was admitted to the emergency room with black, tarry defecation for three days and skin paleness. His past medical records demonstrated several admissions to the emergency room with gastrointestinal bleeding symptoms. He had no remarkable history of alcohol and tobacco consumption and non-steroidal anti-inflammatory drug use. He was hypotensive (80/60 mmHg), tachypneic (18 counts/min.) and in poor general condition. Physical examination was normal except for melena at rectal examination. Complete blood count test revealed severe anemia with hemoglobin level 7.8 g/dl and hematocrit level 21.8%. The patient's oral intake was stopped, and proton pump inhibitor infusion was started. Hemodynamic status was stabilized with intravenous hydration and two units of erythrocyte suspensions. Emergency esophagogastroduodenoscopy showed no evidence of such lesion with active bleeding. In colonoscopy signs of bleeding was observed but an active bleeding was not observed. To localize the hemorrhage, technetium 99m-labeled red blood cell scintigraphy was performed but no extravasations of radionuclide were observed into the gastrointestinal tract. On the third day of hospitalization, patients general status was unexpectedly deteriorated and hemoglobin levels were reduced to 6.1 mg/dl. Patient was consulted to the general surgery department and emergency surgery was planned. At the operation theatre, patient was in hemorrhagic shock with blood pressure of 60/20 mmHg, pulse of 120 beat/min and hemoglobin level of 3.9 mg/dl. Midline laparotomy evidenced massively dilated stomach with a possible gastric bleeding. Gastrotomy was performed and 2000 cc hemorrhagic fluid was aspirated. Further evaluation of the gastric mucosa demonstrated an active bleeding submucosal artery protruding to the mucosa at the proximal part of the corpus close to the lesser curvature (Figure 1) . Wedge resection and primary closure with interrupted sutures were performed. Nasogastric and abdominal drains were inserted. Intraoperatively, patient had four units of erythrocyte suspensions and transferred to the intensive care unit for close monitoring. Postoperative follow-up was uneventful. Nasogastric and abdominal drains were removed on postoperative fourth day. Patient was discharged on postoperative 11th day without any complications.

DISCUSSION

In the literature 1-2% of all gastrointestinal bleedings were associated with DL. Almost 80% of DL occurs in upper part of the stomach within 6 cm of the gastroesophageal junction, most commonly in the small curvature. Other extragastric localizations are duodenum (14%), colon (5%), Billroth II anastamoses (5%), jejunum (1%) and esophagus (1%)(6). Initial gastrointestinal endoscopy evaluates 70% of the lesions effectively, but two or more

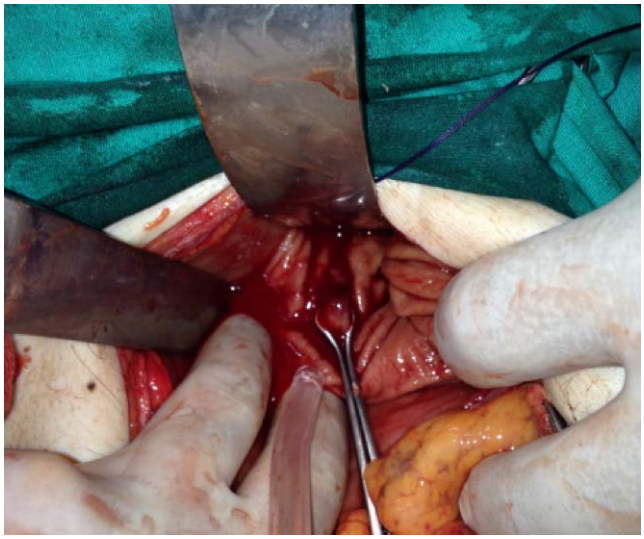

Figure 1. Peroperative pathognomonic view of pulsatile bleeding Dieulafoy's lesion with erosion of mucosa.

endoscopies may be required with 6% of patients to establish the diagnosis [1]. Endoscopy is recommended as the first line treatment option for bleeding control. Various techniques have been described including, epinephrine injection and sclerotheapy, thermal-electrocoagulation, heater probe or argon coagulation, elastic band ligation, hemoclips, or combination of them. Hemostasis can be achieved with these methods up to 90% of bleeding lesions. Advances in endoscopic management has decreased the mortality rates from 80% to 8.6% [7]. However, the risk of recurrence in mono-therapy is documented 9-40% more than compared to patients undergoing combined methods [8]. Recurrences are observed mostly during hospitalization and are associated with epinephrine monotherapy, arterial bleeding demonstrated at endoscopy and contralateral circulation or incomplete embolisation of the feeding artery after embolization therapy [9, 10]. Therefore, the choice of technique depends on the patient, lesion type, localization and the experience of the clinician [11].

Surgical treatment of DL is significantly decreased in time due to efficient therapeutic role of endoscopic management with satisfactory clinical outcomes. Recent studies have demonstrated that surgical treatment is required only in 4-8% of patients [12]. Nowadays, surgery is required for recurrent lesions after angiographic and endoscopic treatment failure. Surgery is also recommended for extra-gastric localized DL especially in lower gastrointestinal tract. The suggested surgical treatment for gastric DL is laparotomy with extensive gastrotomy and resection of the entire lesion including the thick submucosal artery. Laparoscopic management of DL with accurate endoscopic diagnosis preoperatively has been demonstrated in few cases [13, 14], but has not been widely accepted.

CONCLUSION

Our case demonstrated a rare clinical presentation of DL with acute hemorrhagic shock during hospitalization. In such cases, gold standard diagnostic tools, endoscopy and scintigraphy are unable to detect the pathognomonic findings of DL. Patients presenting with intermittent gastrointestinal bleeding episodes with high clinical suspicion of DL, should be hospitalized immediately and evaluated with short-term endoscopic monitoring to avoid life-threatening complication of DL.

Authors' contributions

AE, HP and OY collected the information, reviewed the literature and wrote the manuscript. MFF, KŞ critically reviewed the manuscript and approved the final form. All authors read and approved the final manuscript.

Informed consent

Written informed consent was obtained from the patients for publication of this case report and any accompanying images.

Conflict of interest

The authors declared that there are no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

REFERENCES

[1] Baxter M, Aly EH. Dieulafoy's lesion: current trends in diagnosis and management. Ann R Coll Surg Eng 2010;92:548-54.
[2] Norton ID, Petersen BT, Sorbi D, Balm RK, Alexander GL, Gostout CJ. Management and long-term prognosis of Dieulafoy lesion. Gastrointest Endosc 1999;50:762-7.
[3] Chaer RA, Helton WS. Dieulafoy's disease. J Am Coll Surg 2003;196:290-6.
[4] Veldhuyzen van Zanten SJ, Bartelsman JF, Schipper ME, Tytgat GN. Recurrent massive haematemesis from Dieulafoy vascular malformations--a review of 101 cases. Gut 1986;27:213-22.
[5] al-Mishlab T, Amin AM, Ellul JP. Dieulafoy's lesion: an obscure cause of GI bleeding. J R Coll Surg of Edinb 1999;44:222-5.
[6] Strong RW. Dieulafoy's disease--a distinct clinical entity. Aust N Z J Surg 1984;54:337-9.
[7] Romaozinho JM, Pontes JM, Lerias C, Ferreira M, Freitas D. Dieulafoy's lesion: management and long-term outcome. Endoscopy 2004;36:416-20.
[8] Lee YT, Walmsley RS, Leong RW, Sung JJ. Dieulafoy's lesion. Gastrointest Endosc 2003;58:236-43.
[9] Jamanca-Poma Y, Velasco-Guardado A, Pinero-Perez C, Calderon-Begazo R, Umana-Mejia J, Geijo-Martinez F, et al. Prognostic factors for recurrence of gastrointestinal bleeding due to Dieulafoy's lesion. World J Gastroenterol 2012;18):5734-8.
[10] Alshumrani G, Almuaikeel M. Angiographic findings and endovascular embolization in Dieulafoy disease: a case report and literature review. Diagn Interv Radiol 2006;12:151-4.
[11] Ding YJ, Zhao L, Liu J, Luo HS. Clinical and endoscopic analysis of gastric Dieulafoy's lesion. World J Gastroenterol 2010;16:631-5.
[12] Beyazit Y, Dişibeyaz S, Suvak B, Purnak T, Torun S, Parlak E. [Evaluation of treatment results among patients with acute

gastrointestinal bleeding due to Dieulafoy's lesion admitted to the emergency department] Ulus Travma Acil Cerrahi Derg 2013;19:133-9. [Article in Turkish]
[13] Hoffman A, Kunert A, Lahat A, Volkov A, Zmora O, Rosin D. Laparoscopic resection of gastric Dieulafoy lesion following preoperative tattooing. Isr Med Assoc J 2011;13:187-8.
[14] Sai Prasad TR, Lim KH, Lim KH, Yap TL. Bleeding jejunal Dieulafoy pseudopolyp: capsule endoscopic detection and laparoscopic-assisted resection. J Laparoendosc Adv Surg Tech A 2007;17:509-12.