



Combined Management Approach for Gastric & Extra-Gastric Dieulafoy's Lesions



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Abstract

Introduction: Dieulafoy's lesions are under-diagnosed and with considerable rate of re-bleeding. They are common causes of obscure gastrointestinal bleeding. These are 3 cases of Dieulafoy's lesion, one gastric & two are extra-gastric. The first case was an 11-year-old girl presented by recurrent hematemesis & melena. She was secured by endoscopic banding after adrenaline injection. The second case was a 19-year-old male who had multiple recurrent attacks of melena. Initial upper endoscopy was normal but angiography showed contrast extravasation at the first part of duodenum secured by coil embolization but another bleeding episode occurred 3 weeks later from an aberrant nearby vessel that was secured by endoscopic hemoclippping. The third patient was a 47-year-old man presented by hematochezia. Colonoscopy showed oozing from an aberrant vessel in the descending colon secured by endoscopic argon plasma coagulation and hemoclippping. Two days later, all three patients underwent endoscopic ultrasonography (EUS) which confirmed complete hemostasis.

Conclusion: GI endoscopy plus angiography followed by EUS is an effective approach for a better management (diagnosis, treatment & follow up) of bleeding Dieulafoy's lesions with a markedly lower rate of recurrence & mortality.

Keywords: Dieulafoy's lesion; Obscure; GI bleeding; Endoscopy; CT angiography; Hemoclips

Introduction

Dieulafoy's lesion is one of the main causes in the differential diagnosis of obscure & recurrent GI bleeding. It is a vascular abnormality in which a large, aberrant, dilated and tortuous artery is present in the submucosa of GIT & erodes the overlying mucosa without obvious ulceration [1].

Gallard was the first to report Dieulafoy's lesion in 1884. However, Georges Dieulafoy was the first to precisely describe the lesion fourteen years later in the autopsies of three young, male patients who died after a massive bleeding from large blood vessels within the stomach associated with small ulcers, which he called (exulceratio simplex) [2].

Dieulafoy's lesion accounts for up to 7 % of cases of acute upper GI bleeding with considerable rate of re-bleeding ranging from 10-40% & it may cause massive and fatal GI bleeding unless the patient is promptly & adequately resuscitated [3].

With the advances in diagnostic & therapeutic endoscopic techniques, endoscopy has replaced surgery as the standard approach for management of bleeding Dieulafoy's lesion with good & long-term hemostasis & prognosis after endoscopic treatment [4]. Here by after patients' approval, we present three cases of Dieulafoy's lesion.

Case 1

An 11-year-old girl presented to ER with the second episode of hematemesis & melena. The previous episode occurred 6 days earlier, for which upper & lower GI endoscopy were done showing no specific cause of bleeding. In that previous episode, the patient was resuscitated by intravenous (IV) fluid & blood transfusion then discharged home after stabilization & cessation of bleeding. There was no history of abdominal pain, vomiting, hematochezia, diarrhea or constipation in both episodes. There was neither a history of previous liver or bleeding disorders nor a history of NSAIDs intake. Examination showed afebrile patient with a pulse: 113 beats/min, blood pressure: 90/50 mmHg and respiratory rate: 18/min. Systemic examination showed no abnormalities. Investigations showed a hemoglobin level of 7.8 gm/dl, platelet count of 221×10^3 /dl, white cell count of 9×10^3 /dl, normal liver & kidney function tests with negative hepatitis markers. Resuscitation was done by IV fluids & blood transfusion. After repeated gastric wash with ice-cold saline through a nasogastric tube, upper GI endoscopy showed an aberrant bleeding vessel on the lesser curvature 2.5cm from the cardia. Endoscopic injection of adrenaline followed by band ligation & mucosal tattooing of the site of the bleeding vessel were done with proper hemostasis.

Case 2

A 19-year-old male patient presented to ER with the fifth episode of melena. The previous three episodes occurred one month earlier, associated with hematemesis of fresh & clotted blood, for which upper & lower GI endoscopy were done showing only mild antral gastritis not explaining the severity of bleeding. For those previous episodes, the patient received blood transfusion & PPI infusion then discharged on oral PPI treatment. The fourth attack occurred at home on the day before without medical consultation. There was no abdominal pain, hematemesis, diarrhea or constipation. There was neither history of previous liver or bleeding disorders nor a history of NSAIDs intake over the past one year. Examination showed afebrile patient with pulse: 105 beats/min, blood pressure: 110/60 mmHg and respiratory rate: 17/min.

Systemic examination showed no abnormalities. Investigations showed a hemoglobin level of 10 gm/dl, platelet count of 253×10^3 /dl, white cell count of 6.1×10^3 /dl, normal liver & kidney function tests with negative hepatitis markers but positive stool antigen for H. Pylori. Resuscitation was done by IV fluids. Upper GI endoscopy was done on the day of admission revealing no specific cause of bleeding. CT celiac & mesenteric angiography was done in the next day showing an extravasation from a branch of the pancreatico-duodenal arcade in the first part of duodenum. The bleeding vessel was secured by coil embolisation & the site of extravasation was marked by endoscopic tattooing. No further bleeding occurred for 2 weeks with stable hemoglobin level on follow up. However, after 23 days, the patient developed another attack of melena with drop of hemoglobin from 12.4 to 9.6 gm/dl. Upper GI endoscopy was performed & showing another small DL next to the first one at the site of tattooing. The lesion was secured with hemoclips with no further bleeding or drop in hemoglobin after 10 months of follow-up.

Case 3

A 47-year-old smoker, diabetic & hypertensive man presented to ER with three attacks of fresh bright-red bleeding per rectum over the past 2 days. There was no abdominal pain, vomiting, hematemesis, melena, diarrhea or constipation. The patient was on metformin & lisinopril only with no recent history of NSAIDs over the past 3 months. He had no history of previous gastrointestinal, liver or bleeding disorders. Examination showed afebrile patient with pulse 110 beats/min, blood pressure 90/50 mmHg and respiratory rate of 20/min. Systemic & local PR examinations showed no abnormalities. Investigations showed a hemoglobin level of 8.5 gm/dl, platelet count of 196×10^3 /dl, white cell count of 4.5×10^3 /dl, normal liver & kidney function tests with negative hepatitis markers. Resuscitation was done by oxygen therapy, IV fluids & blood transfusion. An initial ileocolonoscopy was done on the day of admission during active bleeding but revealed no specific abnormality & the site of bleeding couldn't be localized.

The patient underwent colonic preparation with continuous resuscitation & CT angiography was performed on the next day revealing contrast extravasation from a tortuous ectatic vessel in

the territory of inferior mesenteric artery, this was immediately followed by a second session of colonoscopy that revealed a pulsatile bleeding vessel in the descending colon with active oozing & a normal mucosa around the bleeding vessel. The patient was secured by argon plasma coagulation (APC) followed by endoscopic hemoclippping with good hemostasis.

Two days following initial endoscopy, all three patients underwent endoscopic ultrasonography which confirmed complete hemostasis. After 9-16 months of follow up, all the three patients had no recurrent bleeding episodes with stable hemoglobin levels.

Discussion

Dieulafoy's lesion is an aberrant, dilated & tortuous submucosal vessel, 1-5 mm in diameter that can penetrate & rupture through the mucosa producing severe & life-threatening gastrointestinal bleeding [5].

Dieulafoy's lesion is one of the most under-diagnosed conditions in patients with obscure GI bleeding. It was first reported by Gallard in 1884. However, Paul Georges Dieulafoy was the first to describe the lesion in a series of three patients in 1898 [6].

Dieulafoy's lesion was described in multiple previous studies & case series in different parts of the GIT from esophagus to rectum with the proximal portion of stomach along the lesser curvature is the most common site for Dieulafoy's lesion [7].

Endoscopy remains the best diagnostic & therapeutic modality in most patients although multiple long endoscopic sessions may be needed for obtaining a definite diagnosis. Contrast-enhanced CT, angiography and surgical interventions are other diagnostic & therapeutic approaches in patients with a Dieulafoy lesion [8]. The main challenges in management of this lesion were difficult localization especially during active bleeding and the high rate of recurrence of bleeding after the initial endoscopic or angiographic therapy [9]. Here, we described a series of 3 patients, presented with significant GI bleeding from different sites of the GIT, stomach, duodenum & colon.

The presentation of our cases was also characterized by either recurrent previous episodes of bleeding that passed undiagnosed even with endoscopic evaluation in case 1, repeated bleeding during hospital admission from a second Dieulafoy's lesion after initial therapy by a non-endoscopic modality in case 2, or a massive initial bleeding from the colon during which colonoscopy couldn't localize the bleeding site in case 3.

The diagnosis was mainly by visualization of the site of the lesion by upper or lower GI endoscopy aided by CT celiac & mesenteric angiography for initial localization of the site of bleeding & the type of the bleeding vessel especially in cases presented by active massive bleeding or poor colonic preparation in whom the endoscopic visualization is not possible.

The management approach in our case series depended on using more than one therapeutic modality. In case 1, we used

endoscopic adrenaline injection with band ligation & mucosal tattooing for a gastric lesion. In case 2, we used combined angiographic & endoscopic hemoclippping with mucosal tattooing for multiple duodenal Dieulafoy's lesions. In case 3, we applied endoscopic APC & hemoclippping for a colonic lesion. All cases were followed by EUS for confirmation of proper hemostasis & absence of recurrence. All patients show no recurrence of bleeding with stable hemoglobin levels after a follow up period of 9-16 months.

Conclusion

Dieulafoy's lesion is an important cause of obscure GI bleeding & may be present in any part of GIT. CT celiac & mesenteric angiography is helpful in diagnosis in addition to GI endoscopy especially in patients presenting by massive GI bleeding with difficult endoscopic visualization & poor preparation. Also, combined endoscopic & angiographic or multiple endoscopic modalities of therapy are better used in patients with Dieulafoy's lesion to provide better hemostasis & reduce the recurrence of bleeding. Finally, proper hemostasis & absent recurrence of bleeding can be confirmed days or weeks after treatment using endoscopic ultrasound.

Conflict of Interest

The Authors declare that there is no conflict of interest & informed consents were obtained from the patients &/or their first-degree relatives.

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