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Case Study

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TREATMENT BY EMBOLIZATION FOR DIEULAFOY'S LESION: A TWO CASE REPORTS

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ABSTRACT

Background: Dieulafoy's lesion is an uncommon and probably underdiagnosed cause of upper gastrointestinal massive bleeding. Endoscopic management is usually successful. However, if it fails, transarterial embolization can achieve hemostasis. **Case Presentation:** We report two interesting cases of upper gastro-intestinal bleeding caused by Dieulafoy's lesion. In the first case, management was based on combined endoscopic treatment and embolization. In the second case, transarterial embolization was performed after failure of endoscopic treatment. No recurrence was noted in the follow-up. **Conclusion:** On the basis of these observations, gastroenterologist should keep in mind Dieuelafoy's lesion as an aetiology of upper gastrointestinal haemorrhage. Radio-interventional treatment can achieve haemostasis if endoscopic management fails.

Case Presentations

Case1

A 50-years-old Moroccan man with a history of aspirin intake for headaches, surgery for abdominal hydatic cyst and smoking presented to the emergency department with black, tarry stools for the last 2 days followed by hematesis with no abdominal pain.

Clinical examination showed a conscious pale patient with tachycardia. Blood pressure was 90/50 mm Hg. Abdominal examination didn't show any tenderness or portal hypertension signs. Digital rectal exam showed melena.

Laboratory analysis revealed haemoglobin of 8.6 g/l. Other haematological and biochemical investigations were within normal limits.

Upper GI endoscopy revealed normal oesophagus and stomach. The duodenal bulb was erythematous but no bleeding stigma were seen. One day later, haemoglobin dropped to 4.4 g/l. Computed tomography angiography was performed after blood clot transfusion. It showed a slight dilation of the stomachic coronary artery and its fundic branches, as well as the gastroduodenal artery, with no visible image of extravasation; the stomachic coronary artery arises directly from the aorta just above the emergence of the celiac trunk. DL's lesion diagnostic was retained.

A second look gastroscopy was performed and showed a minimal bleeding from a three millimeter cardial ulceration, two clips were applied. Due to the high risk of recurrence, we decided to complete with a transarterial embolization. Catheterization of the left diaphragmatic artery reveals a dilated recurrent branch vascularizing an arterial network of the greater tuberosity, total embolization of this branch by coils. We then proceeded with catheterization of the splenic artery which also participates by the short gastrics, embolization by coils of the trunk of the splenic beyond the dorsal pancreatic artery. Catheterization of the left gastric artery (using a Simmons type 2, 4F probe) which also plays a major role, embolization by coils. (Figure 1).

Recovery was unremarkable and bleeding has not recurred in a follow up of two years.

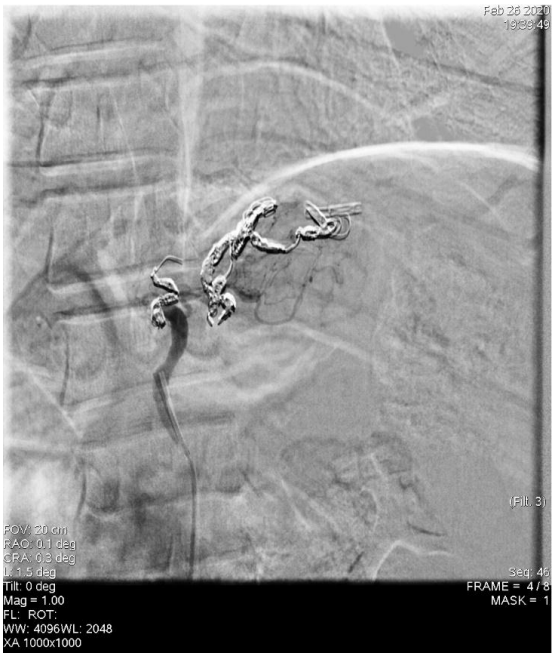

Figure 1: Subtracted frontal angiographic image after total embolization by coils of a dilated recurrent branch vascularizing an arterial network of the greater tuberosity.

Case2

A 42-years-old Moroccan man with a history of smoking, cannabis use and no non-steroidal anti-inflammatory drugs (NSAIDs) presented with hematesis with major asthenia and palor but no abdominal pain.

Clinical examination showed a conscious pale patient. Heart rate was 95 pulse per minute. Blood pressure was 85/50 mm Hg. Abdominal examination didn't show any tenderness or portal hypertension signs. Digital rectal exam showed melena.

Laboratory analysis revealed a very low haemoglobin of 1.6 g/l and acute kidney failure with creatinine up to 50 mg/l and urea at 3.22 g/l. Other haematological and biochemical investigations were within normal limits. Patient was admitted to the intensive care unit and blood and fluid resuscitation was administrated along with continuous intra venous proton pomp inhibitor.

An upper GI endoscopy revealed normal oesophagus and stomach. An active oozing bleeding at the bulbo-duodenal junction was visualised. Endoscopic adrenalin injection and three hemoclips were applied assuring a successful haemostasis. Patient was discharged after four days.

Three weeks later, he was readmitted with melena and deglobulisation. Upper GI endoscopy showed the same aspect as the first one. We tried again endoscopic management with adrenalin injection and two haemoclips (Figure 2) but a massive haemorrhagic recurrence occurred.

Along with resuscitation measures, an arterial embolization was performed by puncture of the right femoral artery, catheterization of the celiac trunk and the superior mesenteric artery on 2 cobra and siemens catheters then, the opacification of the gastro-duodenal artery and hence of the antero-superior duodeno-pancreatic arcades does not reveal any extravasation or arterial abnormality. A probabilistic embolization of the anterosuperior arches in contact with hemoclips placed before. bleeding has not recurred in a two months follow up.

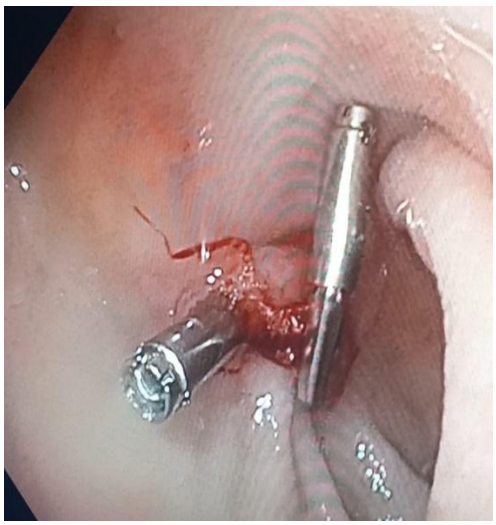

Figure 2: Dieulafoy's lesion of the bulbo-duodenal junction after hemoclips placement. Mucosa surrounding the bleeding site is normal.

DISCUSSION

DLs lesions are a rare and possibly life threatening cause of GI bleeding. It was originally described by Gallardin in 1884 and more accurately characterized by the French surgeon Georges Dieulafoy in 1998.[1]

Diagnosis is made by endoscopy in patients who presents for GI bleeding. The endoscopic criteria for DLs include several parameters: 1) active arterial spurting or micropulsative streaming from a tiny mucosal defect or through the normal surrounding mucosa; 2) visualization of a protruding vessel with or without active bleeding within a tiny mucosal defect or through the normal surrounding mucosa; and/or 3) fresh, densely adherent clot(s) with a narrow point of attachment to a tiny mucosal defect or to normal appearing mucosa.[2]

Following these criteria, diagnosis is most easily performed during or immediately following an episode of bleeding, but the endoscopic diagnosis may be difficult. Therefore, multiple endoscopies are often necessary for diagnosis.[3,4]

The most common site for DLs lesion is the stomach (71%) followed by the duodenum and that in 15% of cases. Other sites can be oesophagus, colon, rectum, small intestine or gastric anastomosis.[1]

Based on the location and feasibility, endoscopic treatment associating injection to thermal or mechanical therapies is the first line approach. Using epinephrine for initial injection, followed by other treatments, appears to be a favorable technique for managing acute bleeding as it offers the benefits of providing temporary haemostasis and better visualisation of the bleeding site.[5] The mechanical therapies available are hemoclips and band ligation. Thermal ones are argon plasma coagulation or heater probe coagulation.[4]

Many articles in the literature have shown that mechanical hemostasis using banding or hemoclips is the safest and most effective endoscopic technique used to stop the bleeding of these lesions with a success rate varying from 90 to 95%.[1,6]

In the case of failure, a repeat endoscopy may assure haemostasis. If not, angiography may also be used for both localization and therapy by embolization of the bleeding site.[7] Indications for selective angiography in DL's lesion are failed endoscopic therapy, lower GI bleeding or lesions beyond reach of therapeutic endoscopy and poor candidates for surgery.[8]

The success rate of Dieulafoy's lesion embolization is not constant. In gastric localisations, a review by Reilly and Al Kawas reported that three of four patients were treated successfully with gelfoam embolization.[9] Alshumrani and Almuaikeel reported a decreasing but persistence of upper GI bleeding after embolization of gastric DL's lesion wich was surgically managed afterward.[8]

For duodenal localisations, Alomari and al reported a successful embolization for a bleeding Dieulafoy's lesion in a 14-years-old girl with reccurent GI bleeding.[10] On the other hand Lee and al detailed the case of a embolization failure that was successfully managed with endoscopic hemoclipping for Dieulafoy-like lesion at the brim of a periampullary diverticulum.[11]

In the two cases we report, bleeding was successfully managed by combining endoscopy and embolization in one case and by embolization after endoscopy failure in the second one.

In the remain cases where bleeding persist, surgery is the last line therapy.[1]

CONCLUSION

Dieulafoy's lesion is a rare but life threatening condition. Gastroenterologist should keep it in mind as a differential diagnosis of obscure gastro-intestinal bleeding.

Current management is based on endoscopy as a first line therapy. In refractory cases, transarterial embolization is then proposed.

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