Massive lower gastrointestinal bleeding from jejunal diverticulum with an occult Dieulafoy’s lesion

Published on 08.07.2016

DOI: 10.1594/EURORAD/CASE.13781
ISSN: 1563-4086

Section: Abdominal imaging
Area of Interest: Small bowel
Procedure: Surgery
Imaging Technique: CT-Angiography
Special Focus: Diverticula Haemorrhage
Case Type: Clinical Cases

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Patient: 76 years, male

Clinical History:

A 76-year-old man with history of hypertension, diabetes and peptic ulcer, arrived at the emergency department for syncope and massive rectal bleeding. The patient, haemodynamically unstable, required blood transfusions. Urgent gastroscopy, colonoscopy and abdominal CT angiography were performed. The source of bleeding was identified by CT.

Imaging Findings:

The abdominal CT angiography demonstrated an active extravasation of intravenous contrast material into a 2 cm size diverticulum in proximal jejunum, 30 cm distal to the Treitz angle. An unenhanced CT scan (Fig. 1) performed immediately prior to the CT angiography showed no hyperattenuating material within the diverticulum. CT angiography images revealed a high-attenuation material within the diverticulum and jejunal lumen in the arterial phase (Fig. 2), which enlarged in the venous phase (Fig. 3). These findings were consistent with intraluminal contrast agent extravasation for arterial diverticular active bleeding. In addition, a collapsed inferior cava vein (Fig. 2) was an indicative sign of hypovolaemia secondly to the severe bleeding. The patient underwent immediate surgery and a jejunal resection was performed. Anatomophatological analysis detected an abnormal arterial vessel in the submucosa of the diverticulum, compatible with a Dieulafoy’s lesion (Fig. 4).

Discussion:

Lower gastrointestinal bleeding (distal to the Treitz angle) has a colorectal origin in 90% of the cases and small bowel origin in the remaining 10%. It manifests clinically as rectal bleeding, haematochezia or melaena. The most common causes are angiodysplasia and colonic diverticulosis [1].

Jejunal diverticulosis is a very rare entity with an incidence of 0.3 to 1.9%. It is mostly asymptomatic, although 10-30% of cases may be complicated with diverticulitis, obstruction, perforation or very rarely, lower gastrointestinal haemorrhage (3.4-8.1%) [2].

Dieulafoy’s lesion is a rare, but serious cause of gastrointestinal bleeding. A tortuous submucosal artery in the
gastrointestinal tract is present in this entity. The clinical presentation for most patients included melaena, haematemesis, haematochezia, and/or anaemia, which often causes haemodynamic instability with transfusion requirement, usually of multiple packed erythrocytes units. Most lesions are located in the stomach followed by duodenum/jejunum and large bowel [3, 4].

Both rare entities, jejunal diverticulum with an underlying Dielafoy’s lesion, were concurrent in our patient. In our case, the diverticulum as a cause of active bleeding was diagnosed by CT angiography, but the underlying Dielafoy’s lesion was detected by histopathology analysis after surgery. Dielafoy’s lesion typically appears at endoscopy as pigmented protuberances from exposed vessel stumps, with minimal surrounding erosion and no ulceration [5]. CT angiography can show the cause of active gastrointestinal bleeding in 80-85% of cases. The CT angiographic examination must be initiated with a preliminary unenhanced imaging series to depict any preexisting intraluminal hyperattenuating material. The appearance of active bleeding is that of an intraluminal blush of extravasated contrast in the arterial phase, which enlarges in the portal venous phase [6, 7].

Endoscopic therapy, such as thermal coagulation or band ligation, is typically effective for control of bleeding and ablation of the underlying vessel once the lesion has been identified. Rescue therapies, such as angiographic embolization or surgery, are considered in situations where endoscopic therapy has failed or is not feasible [5].

In conclusion, in patients with acute massive lower gastrointestinal bleeding, abdominal CT angiography is an accurate, rapid and non-invasive modality to depict and locate the source of bleeding [7].

**Differential Diagnosis List:** Dieulafoy’s vascular lesion in a massive bleeding jejunal diverticulum., Diverticular bleeding complication, Angiodisplasia, Peptic disease, Tumour, Dieulafoy’s lesion, Arteriovenous malformation

**Final Diagnosis:** Dieulafoy’s vascular lesion in a massive bleeding jejunal diverticulum.

**References:**


Figure 1

Description: Coronal (upper) and axial (lower) images. Diverticulum (white arrow) originating in the jejunum wall (*), with stranding of the adjacent fat (white arrowhead). There was no hyperattenuating material within the diverticulum lumen. **Origin:** Department of Radiology, Hospital Morales Meseguer, Murcia, Spain
Figure 2

Description: Coronal (upper) and axial (lower) images. Swirling jet of contrast material (black arrow) within the lumen of the diverticulum (white arrow). A collapsed inferior cava vein indicates hypovolaemia (white arrowhead). **Origin:** Department of Radiology, Hospital Morales Meseguer, Murcia, Spain
**Description:** Coronal (upper) and axial (lower) images. The amount of intraluminal contrast increases in diverticular (black arrowhead) and jejunal (black arrow) lumen in comparison with arterial phase. Hyperattenuating material in the colon suggests blood (white arrowhead). **Origin:** Department of Radiology, Hospital Morales Meseguer, Murcia, Spain
**Figure 4**

Description: Haematoxylin and eosin stain, 40x (a) and 100x (b) magnification. The analysis showed a persistent calibre artery in the intestinal submucosa of the diverticulum ("arterial vessel" in a and b) compatible with Dieulafoy's lesion. **Origin:** Department of Radiology, Hospital Morales Meseguer, Murcia, Spain