Unusual association of diseases/symptoms

An unusual cause of lower gastrointestinal haemorrhage

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A previously unreported cause of lower gastrointestinal haemorrhage in a 63-year-old female patient on clopidogrel for cardiac comorbidities is presented. Endoscopy suggested a small bowel or colonic aetiology but failed to accurately localise the source. The patient became haemodynamically unstable despite conservative management and temporary cessation of clopidogrel. CT angiography demonstrated a pseudoaneurysm arising from the superior rectal artery. Percutaneous embolisation using coils was performed to successfully occlude the pseudoaneurysm, prevent further haemorrhage and avoid emergency colonic resection.

BACKGROUND

Massive lower gastrointestinal (GI) haemorrhage is most commonly due to diverticulosis. Other causes include vascular anomalies, ischaemic colitis, inflammatory bowel disease, haemorrhoids and neoplasms.

Visceral artery aneurysms are rare (incidence 0.01–0.2%).¹ They are normally asymptomatic and found incidentally. Despite this they are treated due to the high risk of rupture. Inferior mesenteric artery aneurysms account for 1% of all visceral artery aneurysms. To our knowledge,

Figure 1 Axial contrast enhanced CT (arteriographic phase) demonstrating the pseudoaneurysm (arrow) as a bulbous vascular sac. The adjacent sigmoid mesentery is inflamed.

Figure 2 Volume rendered maximum intensity projection CT. The superior rectal artery can be seen as a vertically orientation vessel leading to the pseudoaneurysm (arrow).

this is the first reported case of a non-traumatic superior rectal artery pseudoaneurysm causing a lower GI bleed. The incidence of superior rectal artery aneurysms and pseudoaneurysms is unknown. Only one case has been reported, which highlighted a lower GI bleed caused by a traumatic pseudoaneurysm of the superior rectal artery secondary to previous surgery.²

This case report highlights the use of CT angiography as a modality to identify unusual causes of GI bleeding when endoscopy has not been fruitful. A systematic approach to GI investigations is important to identify both common and unusual causes. Visceral aneurysms and pseudoaneurysms can cause GI haemorrhage and extraluminal haemorrhage into the peritoneal cavity. Radiological embolisation is the treatment of choice although surgery can be employed if embolisation fails.

CASE PRESENTATION

A 63-year-old woman presented to the emergency department with a 5 day history of fresh per rectal bleeding. She had central, colicky abdominal pain and feeling light headed. She had no history of weight loss or change in bowel habit. Her comorbidities included cardiac syndrome X, previous TIAs and breast cancer (treated with wide local excision and radiotherapy). Her regular medications included clopidogrel, bisoprolol, isosorbide

mononitrate, diltiazem and nicorandil. She was allergic to aspirin. On examination, she looked pale with a blood pressure (BP) of 102/66, pulse 65 bpm (regular), oxygen saturations of 100% on air. Her abdomen was soft and tender below the umbilicus. There were no palpable masses and bowel sounds were present. Per rectal examination revealed no haemorrhoids or masses, but altered blood was observed. Antiplatelet agents were withheld, but she continued to bleed and became haemodynamically unstable (BP 98/55, HR 85). Haemoglobin on admission was 10.9 and this fell to 7.5 5 days later. ECG showed ischaemic changes. She was transfused with three units of packed red cells.

INVESTIGATIONS

Flexible sigmoidoscopy revealed florid localised sigmoid diverticuloses. Patchy associated erythema was also observed. She had sizeable haemorrhoids. There were no mass lesions.

Oesophageogastroduodenoscopy revealed mild antral gastritis, with normal mucosal appearances and no bleeding points.

As all the usual investigations for a lower GI bleed revealed no source, a CT angiogram was carried out. This demonstrated a pseudoaneurysm arising from the superior rectal artery (figures 1 and 2).

Figure 3 (A) Pre-embolisation selective inferior mesenteric arteriogram demonstrates the pseudoaneurysm arising from the proximal superior rectal artery. The distal branches supplying the rectum are clearly seen. (B) Post embolisation arteriogram. Coils have been placed at the origin of the pseudoaneurysm, causing thrombosis of the aneurysm sac. The distal superior rectal artery has been preserved.

DIFFERENTIAL DIAGNOSIS

Diverticular disease, vascular malformations (angiodysplasia), ischaemic colitis, haemorrhoids, inflammatory bowel disease (eg, ulcerative proctitis, Crohn's disease), neoplasia (carcinoma or polyps) and radiation enteropathy.

TREATMENT

The pseudoaneurysm was occluded by percutaneous coil embolisation under fluoroscopic guidance (figure 3).

OUTCOME AND FOLLOW-UP

Postembolisation, the patient had deep pelvic pain thought to be due to temporary arterial spasm causing loss of antegrade flow in the distal superior rectal artery. This resolved over 24 h and the patient was monitored for sepsis secondary to rectal ischaemia. She was discharged 8 days post embolisation and during this period there were no further episodes of per rectal bleeding. Prior to discharge, she was restarted on clopidogrel.

DISCUSSION

Lower GI haemorrhage is a common (20–27 cases per 100 000 in the Western world) and life-threatening condition with a mortality of 10–20%.³ There are many conditions that present with per rectal bleeding, the most common of which is diverticulosis. Accurately identifying the source of bleeding is critical to effective treatment. Systematic evaluation of the source of bleeding is important. The usual investigations include upper GI endoscopy and colonoscopy. Sometimes however, an endoscopy may be inconclusive. Increasing data highlights the importance of CT angiography as a rapid, non-invasive method of accurately localizing the site of bleeding.^{4 5} A recent meta-analysis assessing the accuracy of CT angiography in the diagnosis of acute GI bleeding showed a pooled sensitivity of 89% (95% CI 82 to 94%) and specificity of 85% (95% CI 74 to 92%).⁶

Visceral artery aneurysms are rare (incidence 0.01–0.2%).¹ They are normally asymptomatic and found incidentally. Despite this they are treated due to the high risk of rupture. The most commonly affected vessels include

splenic, hepatic, superior mesenteric and coeliac artery.^{7–9} Pseudoaneurysms arise from a disruption in arterial wall, with blood dissecting into the tissues around the damaged artery creating a perfused sac that communicates with the arterial lumen. They may be traumatic, iatrogenic (from surgical, endoscopic or radiological interventional procedures) or arise from inflammatory or infectious conditions.^{10–12} The cause of this patient's pseudoaneurysm is acute diverticulitis. Radiological embolisation is the treatment of choice although surgery can be employed when embolisation fails. The percutaneous approach offers a non-invasive solution in treating aneurysms that are difficult to manage surgically.¹³ This approach further allows surgical intervention should a percutaneous approach not be successful.^{11 14 15}

Learning points

- ▶ Systematic GI investigations need to be carried out to pick up both common and unusual causes of per rectal bleeding.
- ▶ CT angiography is an important non-invasive, sensitive and widely available modality to identify the cause of GI bleeding when endoscopy has failed.
- ▶ Radiological embolisation approach offers a minimally invasive solution in treating aneurysms that are difficult to operate surgically.

Competing interests None.

Patient consent Obtained.

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