CASE REPORT

Lower gastrointestinal bleeding in the elderly: a rare aetiology masquerading as a diverticular bleed

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SUMMARY

Bleeding per rectum is a relatively common acute surgical presentation. Common causes include diverticular disease, colitis, haemorrhoids, polyps, etc. An 83-year-old man with a history of recurrent rectosigmoid diverticulitis and bilateral internal iliac artery aneurysms for 2 years presented with rectal bleeding. He was suspected to have a diverticular bleed based on history and examination. A CT scan revealed a large haematoma adjacent to the right isolated internal iliac artery aneurysm (IIAA) almost indistinguishable from the adjacent rectosigmoid, consistent with a ruptured IIAA and an ileorectal fistula. The fistula was of a primary vascular enteric type and was accentuated by the inflammation arising from the diverticulitis. Hence, presence of more common or apparently obvious causes should not deter clinicians from thoroughly investigating the case. Rare causes should be kept in mind while dealing with common acute presentations, especially in elderly patients with multiple comorbidities.

BACKGROUND

Gastrointestinal (GI) bleeding is a common cause of hospitalisation, especially in the elderly. Acute colonic or lower GI bleeding has a reported annual incidence rate of 36/100 000 population.¹ The most common cause of lower GI bleeding is diverticulosis, others being haemorrhoids, inflammatory bowel disease, ischaemic colitis, carcinoma, vascular ectasia, rectal ulcer and radiation colitis/proctitis. Less common causes include stercoral ulcer and dieulafoy lesion of the small and large bowel. Incidence of lower GI bleeding is higher in the elderly as well as in men. This is due to a similar demographic profile found in common causes such as diverticular disease and vascular disease. Increased morbidity and mortality is found in elderly patients with lower GI bleeding due to comorbidities and polypharmacy. A recent study on acute lower GI bleeding reported a 46% rebleeding risk and overall mortality rate of 13% within 5 years after hospitalisation with higher rates in elderly patients >65 years and patients on antithrombotic drugs.²

We present the case of an acute lower GI bleeding in an elderly man with a background of diverticulitis and bilateral isolated internal iliac artery aneurysms (IIAAs).

An 83-year-old man presented in the emergency department, with a 10 h history of lower abdominal pain and bright red blood per rectum.

His medical history included longstanding atrial fibrillation for which he was anticoagulated using

warfarin and aspirin. He had a history of bleeding per rectum 2 years previously, requiring investigation with colonoscopy and CT scan. The CT scan had shown bilateral IIAAs with a right IIAA measuring 6.4 cm and a left IIAA of 2.5 cm (figure 1). The colonoscopy had revealed diverticular disease in the rectum and sigmoid, with external compression from the 6 cm IIAA.

On current examination, the patient was diaphoretic and tender in the right lower abdomen, with guarding. Severe ecchymosis over the right buttock was noted on inspection and a digital rectal examination (DRE) revealed a palpable pulsatile mass in the right rectal wall. Fresh rectal blood was noted at the DRE. Bilateral lower extremity pulses were palpable and normal.

INVESTIGATIONS

A full blood count revealed haemoglobin of 9 g/dL and white cell count of 16.7×10^9 . Midstream urine revealed haematuria (>100 red cells/mL).

The patient underwent an urgent CT scan of the abdomen and pelvis. This revealed an enlarged right IIAA measuring 7.8 cm (increased compared to the previous scan from 2013). Adjacent to this was a well-circumscribed haematoma about 10 cm in size, indistinguishable from the adjacent rectosigmoid, consistent with a ruptured left IIAA with a local aortoenteric fistula (figure 2).

DIFFERENTIAL DIAGNOSIS

The initial differential diagnosis was diverticular bleed compounded by warfarin and aspirin. It was only after a review of the history and the urgent CT scan that the possibility of an IIAA rupture and primary ileorectal fistula was considered.

TREATMENT

The patient was initially resuscitated with intravenous fluids and the required amount of blood products. However, his condition quickly deteriorated. After consultation with his family, it was deemed that he was not a candidate for emergency surgical intervention.

OUTCOME AND FOLLOW-UP

The patient died 3 h after presentation to the emergency department. Further review of his notes revealed that he had declined repair of his bilateral aneurysms.

DISCUSSION

Rupture of isolated IIAAs as a cause of life-threatening lower GI bleeding is rare and has only

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Figure 1 Initial CT scan demonstrating bilateral isolated internal iliac artery aneurysms (blue arrow).

been reported in five cases in the literature, to the best of our knowledge.³

To date, only 55 cases of IIIAA have been reported in the literature as these aneurysms most commonly coexist with aortic aneurysms.³

Vascular-enteric fistulas are primary when arising de novo (spontaneous or due to infection, malignancy or radiotherapy) and secondary when occurring in patients with a history of vascular surgery/prosthetic grafts. Primary aortoenteric or ileoenteric fistulas are less common than secondary, with an incidence of only 0.07% in the general population.⁴

IIIAs have a high mortality rate of 67% due to risk of rupture with conservative management⁵ and a mortality rate of 10% with open surgical treatment.⁶

IIIAs can also present with abdominal pain, a rectal mass, testicular pain, hydronephrosis and urinary symptoms such as haematuria, constipation, lumbar pain and radiculopathy. Wilhelm *et al* reported symptomatic IIIAs as being larger in size and therefore at a higher risk of rupture. When palpable rectally alone, the average aneurysm size is 10.6 and 9.6 cm when palpable either abdominally or rectally.⁴

Contrast-enhanced CT scan is the investigation of choice for diagnosis and further delineation of IIIAs. Management of IIIAs involves ligation, with or without endoaneurysmorrhaphy/extra-anatomic bypass procedures. Endovascular repair of these aneurysms is emerging as a popular alternative to traditional operative treatment, especially in asymptomatic cases.⁷

Secondary vascular-enteric fistulae often occur after an aortic or aortoiliac reconstruction with a prosthetic graft. Primary vascular-enteric fistulae are most often related to spontaneous erosion of the aneurysm into the digestive tract. They occur commonly between the aorta and oesophagus or duodenum and are very rare between the iliac artery and rectum.⁴ These

fistulae can leak causing catastrophic bleeding. They are often preceded by intermittent bleeding termed as 'herald bleed' and/or a symptom-free interval that makes diagnosis of these fistulae difficult. CT scan during an active bleeding episode may reveal contrast leaking within the bowel, as was seen in this case. Even so, only a minority (<40%) are diagnosed prior to emergency surgery and the mortality rate in the postoperative period can be almost 50%.^{4 8 9}

In our case, the primary fistula developed due to inflammation arising from chronic rectosigmoid diverticulitis. The patient had bilateral IIIAA (left<right) and the increasing size of the left IIIAA led to rupture of the aneurysm into the perirectal/perianal area and subsequently the rectum, with catastrophic bleeding.

Learning points

- Presence of more common causes of lower gastrointestinal (GI) bleeding such as diverticulitis and antithrombotic agents should not distract clinicians.
- A thorough chart review, physical examination and relevant investigations are invaluable to determine the accurate diagnosis.
- Rupture of isolated internal iliac artery aneurysm (IIIAA) and a primary ileoenteric fistula are rare causes of lower GI bleeding.
- Primary ileoenteric fistulae can arise secondary to inflammation from diverticular disease in the presence of IIIAA.
- Elderly patients with lower GI bleeding and multiple comorbidities have higher rates of mortality.

Figure 2 CT scan on day of presentation revealing a ruptured isolated internal iliac artery aneurysm with haematoma and possible ileorectal fistula (blue arrow).

This sequence of events is unique and unusual and, to our knowledge, has not been reported previously.

In this acute presentation of lower GI bleeding, the patient had a background of diverticulitis and was on warfarin and aspirin. Considering that this scenario is a common presentation in patients with acute lower GI bleeding, it was considered to be the first differential diagnosis. It was only with a complete physical examination, chart review and imaging results, that the diagnosis of an IIIAA rupture and associated possible ileorectal fistula was made.

Hence, rare causes of common acute surgical presentations should be kept in mind especially in high-risk cohorts such as the elderly with multiple comorbidities.

Contributors NB wrote the case and all the authors have participated equally in reviewing and final editing of the case.

Competing interests None declared.

Patient consent Obtained.

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