

A Case of Massive Lower Gastrointestinal Bleeding: Superior Rectal Artery Pseudoaneurysm

Dear Editor,

While most cases of acute lower gastrointestinal (GI) bleeding resolve spontaneously following supportive management, 10% to 15% of patients in whom bleeding persists require further diagnostic and therapeutic intervention.¹

The most common causes of massive lower GI bleeding are diverticular disease and angiodysplasia.² Massive lower GI bleeding resulting from a pseudoaneurysm is less common, but is an important consideration following a recent procedural or surgical intervention. Here we report a rare case of acute massive lower GI bleeding resulting from an iatrogenic traumatic superior rectal artery pseudoaneurysm.

Case Report

A 26-year-old Chinese man, with no prior medical history, underwent a screening colonoscopy at a medical centre due to occasional bleeding per rectum, haemorrhoids and an underlying strong family history of colon carcinoma. Polypectomy and ligation of haemorrhoids was also performed; the histology of the polypectomy specimen was reported as rectal mucosa. The patient was brought to our Emergency Department via ambulance 10 days later presenting with sudden onset lower abdominal pain associated with fresh per rectal bleeding.

On arrival at the Emergency Department, the patient was in hypovolaemic shock. His blood pressure was 78/53mmHg, pulse rate 87 beats/minute, and respiratory rate 18 breaths/minute. There was mild lower abdominal tenderness but his abdomen was not guarded. Proctoscopy examination revealed copious amount of proximal fresh bleeding with multiple blood clots.

Multiple adrenaline-soaked gauze were applied to the anal canal. Three large-bore IV lines were inserted and 1.5 litres of crystalloid fluid were promptly administered. His blood pressure was refractory to fluid resuscitation. A bedside haemoglobin measurement read 5.1g/dL. He was given a further one litre of colloid, and transfused with 2 packs of emergency O positive blood and 2 packs of rapid-matched red blood cells. The patient was initially scheduled for examination under anaesthesia and colonoscopy in the Emergency Operating Theatre. However as the patient's

condition remained unstable despite fluid resuscitation and with the histology report available, the colorectal consultant suspected an arterial bleed and decided to arrange an emergency mesenteric angiogram instead. The radiologist was informed and the patient was transferred to the angiography suite for a computerised tomography (CT) mesenteric angiogram with possible embolisation.

Urgent angiography via the right common femoral artery showed 2 superior rectal artery pseudoaneurysms in relation to the rectal wall with massive contrast extravasation (Fig.1). The superior rectal artery was superselectively embolised with glue (N-butyl cyanoacrylate), with complete haemostasis achieved post embolisation (Fig. 2). Further transfusion of 4 packs of red blood cells, one pack of cryosupernatant plasma and one litre of fresh frozen plasma were administered in the angiography suite.

The patient remained stable. Flexible sigmoidoscopy performed on day 3 of admission showed 2 ulcers over the lower rectum at the proximal aspect of the anal cushions, one deeper ulcer with histoacryl extruding from it but no active bleeding. His haemoglobin level increased to 9.6g/dL after 2 further packs of red blood cell transfusion. He recovered well and was discharged on day 5.

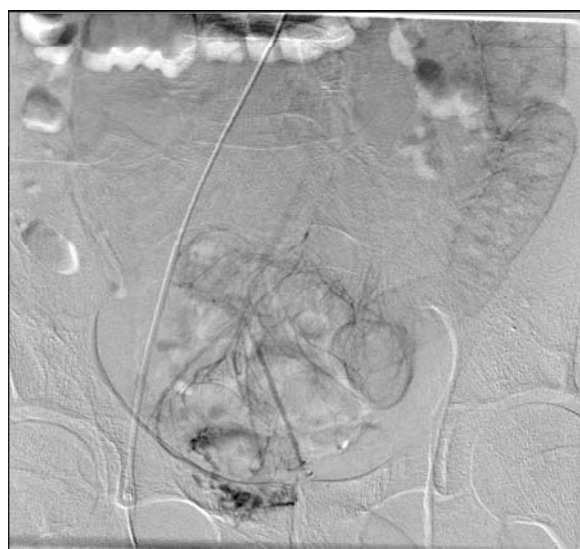


Fig. 1. Mesenteric angiogram demonstrating contrast extravasation from the superior rectal artery.

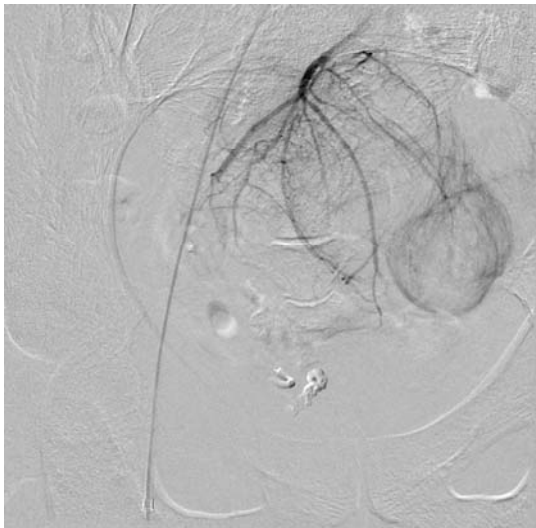


Fig. 2. Mesenteric angiogram post embolisation with no further contrast extravasation.

Discussion

The superior rectal artery is the continuation of the inferior mesenteric artery. It supplies blood to the rectum to the level of the internal anal sphincter, and communicates with the middle rectal artery and inferior rectal artery at the lower end of the rectum. Rectal artery pseudoaneurysms are rare. Moreover, only one case report currently exists in the literature of massive lower GI bleeding resulting from a superior rectal artery pseudoaneurysm.³

The majority of cases of acute lower GI bleeding are self-limiting with conservative management. However in 10% to 15% of the patients, bleeding persists with haemodynamic compromise, requiring further urgent intervention.¹ Classically, colonoscopy is considered the first-line procedure of choice for both diagnostic and therapeutic purposes; adrenaline injection or thermal coagulation may be applied if the bleeding source is visualised. However, drawbacks to colonoscopy in the acute setting include poor visualisation in an unprepared colon, particularly in cases of massive bleeding, and the risks of sedation in an unstable patient. If colonoscopy fails to control the bleeding, surgical intervention with bowel resection may be the next invasive option. However, this also carries significant morbidity and mortality, thus with the advancement of interventional radiology, embolisation has become a more attractive alternative.⁴

In the early days of transcatheter embolisation for lower GI haemorrhage, complications of bowel ischaemia and strictures were common. These problems were partly due to the use of large catheters as well as the paucity of vascular collaterals in the lower GI tract.⁵ With the refinement of

embolisation materials including micro-catheters and the development of superselective embolisation techniques, outcomes have considerably improved.

Recent studies have shown superselective embolisation to be a safe and effective modality for the treatment of lower GI haemorrhage, terminating bleeding in 85% to 97% of cases with a reduced rate of colonic ischaemia reported at around 3% to 4%.^{6,7} Re-bleeding is the other main complication of superselective embolisation, with a reported rate of around 15%.⁴ It is postulated that the site of bleeding and underlying diagnosis may influence embolisation outcomes: re-bleeding appears less likely if the site of bleeding is located within the colon compared to the small bowel, and greater success and lower re-bleeding rates have been observed for diverticular bleeding compared to other aetiologies.^{7,8} Given recent improved results, superselective embolisation has emerged as a successful modality for the treatment of acute lower GI haemorrhage in patients with haemodynamic instability.⁷

In our patient, angiography with superselective embolisation was performed as the first-line diagnostic and therapeutic procedure for an acute massive lower GI haemorrhage as arterial bleeding was strongly suspected. Superselective embolisation was effective in terminating the bleeding, with no post-procedural complications observed.

Rectal artery pseudoaneurysms are rare. We propose that mesenteric angiography with superselective embolisation represents a valid diagnostic and therapeutic option if arterial bleeding from a pseudoaneurysm is strongly suspected in an unstable patient presenting with acute massive lower GI bleeding.

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