Coil occlusion of anal cushions in severe lower gastrointestinal haemorrhage

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A B S T R A C T

Coil occlusion of colonic vessels is uncommon due to a risk of colonic ischemia and perforation, and should only be performed as a bridge to emergent surgery. Colonic haemorrhage can occur in haemorrhoidal disease which is managed conservatively in most cases. Endovascular management of haemorrhoids has been described in a non acute setting with effective results and little complications. We present a case of a 46-year-old male admitted with haemorrhage secondary to abnormal vascular rests within the anal cushions, similar to that described in haemorrhoidal disease. Both clinical and endoscopic examination did not identify haemorrhoids; however, catheter angiogram identified ectatic distal rectal arteries with arterial blush demonstrating a haemorrhagic focus. This was subsequently embolised. The patient experienced no ischemic complications or further haemorrhage. Endovascular management in this setting has both a diagnostic and therapeutic benefit allowing rapid effective management of the patient.

Keywords: Gastrointestinal haemorrhage; Therapeutics

Introduction

Endovascular coil embolization is a well established method of managing acute haemorrhage in the upper gastrointestinal (GI) tract. In the lower GI tract, endovascular management is less established due to the increased risk of infarction and should only be performed as a temporising measure as a bridge to emergent surgery.

A recent case series by Vidal et al described the safe and effective coil occlusion of the distal superior rectal arteries for symptomatic bleeding haemorrhoids. Frequently, cases of haemorrhoidal bleeding are chronic, are diagnosed clinically and managed surgically. However, endovascular embolisation of the haemorrhoid is a less invasive method of managing acute and chronic complications of haemorrhoids. This technique has a low complication rate with a recent case series reporting no ischemia or haemorrhage. Comparatively, traditional surgical techniques have an estimated 15% to 20% complication rate including haemorrhage, stenosis and urinary retention.

Haemorrhoidal disease is a common anorectal condition with a prevalence of 38.4%, and a common cause of haemorrhage. Patients with haemorrhoidal disease experience a broad spectrum of symptoms, which can impact on their quality of life. Pain is a typical debilitating symptom secondary to fissures and acute thrombosis, less commonly this condition can result in chronic or acute haemorrhage which can potentially be life threatening.

Traditional treatment includes conservative management typically dietary measures and analgesia. More invasive treatment is required in approximately 10% of cases. Surgical management involves resecting the haemorrhoidal cushions with ligation of the vascular pedicle.

There are less invasive surgical options practiced including Longo’s procedure. This consists of ligating the terminal superior rectal arterial branches and resecting a ring of rectal mucosa.

A less invasive method to achieve the same objectives has been developed in the form of Doppler guided haemorrhoidal arterial ligation. This involves ligation of the distal rectal arteries identified with Doppler ultrasound.

Case Report

A 46-year-old male presented with a history of recurrent bright red blood per rectum, requiring repeated transfusions. The haemoglobin level had reduced to 6 g/dL which requiring urgent
Clinical examination and endoscopic interrogation of the upper and lower GI tract did not reveal the cause of bleeding. No haemorrhoids were identified at clinical examination or colonoscopy.

With no apparent source for symptomatic pronounced bleeding a catheter angiogram was arranged to investigate further. Catheter angiography was performed in the coeliac axis, superior mesenteric artery and internal iliac artery which demonstrated no obvious haemorrhagic source.

The inferior mesenteric artery (IMA) was cannulated with a SIM 2, 5 F, 100 cm catheter (Terumo Europe N.V, Leuven, Belgium) and the angiogram initially demonstrated no obvious haemorrhagic focus (Fig. 1). However, a selective angiogram of the distal IMA vessels with a 2.8 F Progreat (Terumo Europe N.V) revealed a subtle, late blush in the superior rectal arteries along the anal margins, with a prominent feeding vessel bilaterally, in keeping with mucosal rests similar to those noted in haemorrhoidal haemorrhage (Fig. 2). At this stage, it was not possible to select these vessels due to a combination of tortuosity and significant vascular spasm.

A repeat catheter angiogram was performed 5 days later due to persistent bleeding. The IMA was cannulated with a SIM 2, 5 F, 100 cm catheter. A smaller 2.4 F Progreat microcatheter (Terumo Europe N.V) was used to select the distal superior rectal arteries; however, there was insufficient length to reach the abnormal feeding vessel. To allow the Progreat (Terumo Europe N.V) to gain access to the distal vessels the SIM 2 catheter was manually shortened by 30 cm at the hub end. Glyceryl trinitrate (Hameln Pharmaceuticals Ltd., Gloucester, UK) was required to dilate the distal vessels allowing placement of two, 2 mm diameter pushable microcoils (Boston Scientific, St. Albans, UK) to reduce inflow (Fig. 3). No abnormality was identified in the left superior rectal artery on this occasion and therefore blind coiling of these vessels was

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**Fig. 1.** Initial angiogram of the Inferior mesenteric artery shows no obvious haemorrhagic focus.

**Fig. 2.** Distal selective inferior mesenteric artery catheter angiogram shows an ectatic vessel (arrow) with arterial blush in keeping with an abnormal mucosal rest similar to those seen in haemorrhagic haemorrhoids.

**Fig. 3.** Oblique view shows coil deployment in the distal right superior rectal artery (arrow).

**Fig. 4.** (A) A 2 mm coil within micro catheter prior to placement in the distal left superior rectal artery (arrow). (B) Angiogram post deployment (arrow).
not attempted because of uncertainty regarding propagating ischemia.

Ten months later the patient was readmitted with recurrent fresh rectal bleeding. Further catheter angiography was performed demonstrating sustained occlusion of the right sided vessels. The left sided vessels were identified although appeared less prominent with no abnormal blush on this occasion. In view of the recurrent bleeding, and lack of complication from the previous coil embolization on the contralateral side, the left sided vessels were coiled with two, 2 mm diameter pushable microcoils (Fig. 4). The patient was discharged with no reported recurrent bleeding or ischemic complications over a one-year follow-up period.

Discussion

This was a case of a vascular malformation with angiography demonstrating vascular rests in the anal cushions similar to those seen haemorrhoidal haemorrhage. This reiterates the reported diagnostic benefit of angiography demonstrating the source of the occult haemorrhage not identified on clinical examination or endoscopy.14

There are a variety of methods for managing haemorrhoids ranging from conservative to invasive surgery. However, in the acute setting an effective timely management is required.

This demonstrates the strengths of endovascular diagnosis and management in cases of occult lower GI haemorrhage.15 Additionally, an endovascular approach allows the identification of all the contributing vessels and therefore subsequent accurate embolization.

Vidal et al3 have reported that coil occlusion of the rectal vessels below the level of the pubic symphysis can be achieved without complication. This case series described the use of the ‘emborrhoid’ technique in treating haemorrhoids with 100% technical success and 72% clinical success at one month.3 Additionally, no significant complications were described. However, it is essential to examine the iliac arteries to ensure there are no contributing rectal vessels.

This case demonstrates that the endovascular method of treating haemorrhoids in the non-acute setting can also be an effective diagnostic and therapeutic option for non-haemorrhoidal bleeding in the acute setting.

Conflicts of Interest

No potential conflict of interest relevant to this article was reported.

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