EJCRIM
European Journal
of Case Reports
in Internal Medicine

COIL EMBOLIZATION OF AN APPENDICEAL ARTERY BLEED LEADING TO APPENDICITIS AND SURGICAL RESECTION

Omar Brijawi, Katherine Guardado, Khizar Ghuman, Frank Epitropoulos

Internal Medicine, Mount Carmel Health System, Grove City, USA

Corresponding author's e-mail: omarbrijawi@gmail.com

Received: 06/01/2026
Accepted: 13/01/2026
Published: 28/01/2026

Conflicts of Interests: The Authors declare that there are no competing interests.
Patient Consent: Signed patient consent for the publication of this case was obtained.
This article is licensed under a Commons Attribution Non-Commercial 4.0 License

How to cite this article: Brijawi O, Guardado K, Ghuman K, Epitropoulos F. Coil embolization of an appendiceal artery bleed leading to appendicitis and surgical resection. *EJCRIM* 2026;**13**:doi:10.12890/2026_006144

ABSTRACT

Background: Appendiceal bleeding is an infrequent cause of lower gastrointestinal bleeding (LGIB), accounting for only 0.014% of cases.

Case report: We present the case of a 48-year-old male on heparin who developed an acute LGIB from the appendicular artery requiring coil embolization and subsequently developed appendicitis.

Conclusion: This case highlights appendicitis as a potential complication of appendiceal artery embolization. Careful patient selection and consideration of alternative approaches, including upfront surgery or endoscopic therapy, are essential in managing appendiceal artery bleeds.

KEYWORDS

Lower gastrointestinal bleed, appendicitis, appendiceal bleed, coil embolization, appendectomy

LEARNING POINTS

- Expands the internist's differential and management strategy for obscure lower gastrointestinal bleeding.
- Identifies appendicitis as a real, not theoretical, complication of appendiceal artery embolization.

INTRODUCTION

Lower gastrointestinal bleeding (LGIB) accounts for approximately 20% of acute gastrointestinal bleeding cases, with appendiceal bleeding being exceptionally rare identified in only 0.014% of LGIB cases in a large retrospective study[1,2]. The appendix's small caliber, retrocecal location, and end-arterial blood supply make it an uncommon but potentially serious bleeding source. Reported causes include mucosal ulceration, diverticulitis, vascular malformations such as Dieulafoy's lesions, neoplasms, and inflammation[2–5].

Diagnosis is often delayed due to the intermittent nature of bleeding and limited endoscopic visibility[4]. Current guidelines recommend that hemodynamically unstable patients with suspected ongoing LGIB undergo urgent computed tomography (CT) angiography to locate the bleeding source, followed by endoscopic, surgical, or radiologic intervention[6,7]. Transcatheter arterial embolization (TAE) is a well-established technique for controlling gastrointestinal haemorrhage, though its application to the appendiceal artery is rarely reported. Given the appendix's reliance on a terminal branch of

EFIM
European Federation of Internal Medicine

Publisher
smc media srl

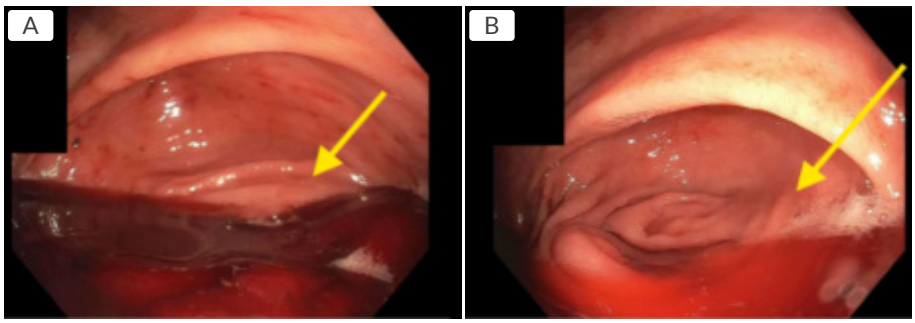


Figure 1. A) Red blood and clot seen in the cecum (yellow arrow); B) Colonoscopy examination of the appendiceal orifice with red blood and clot (yellow arrow), but no bleeding lesion identified.

the ileocolic artery for perfusion, embolization carries a theoretical risk of ischemia and appendicitis[6].

Here, we present a unique case of a 48-year-old male on heparin for acute coronary syndrome who developed acute LGIB localized to the appendiceal artery and managed with coil embolization. The patient subsequently developed acute appendicitis, requiring surgical intervention. This case highlights appendicitis as a rare complication of embolization therapy and emphasizes the importance of considering ischemic risks when managing obscure sources of LGIB.

CASE DESCRIPTION

A 48-year-old male with a past medical history of hypertension, hypothyroidism, recurrent major depressive disorder, and bipolar disorder presented to the emergency department with severe, retrosternal chest pain radiating to the bilateral jaw and arms. Initial laboratory evaluation demonstrated elevated high-sensitivity troponin levels at 36 ng/l, which subsequently rose to 67 ng/l, 141 ng/l, and 156 ng/l. He was initiated on acute coronary syndrome medical treatment with aspirin and heparin, with plans for cardiac catheterization in the morning. The patient denied chronic anticoagulation or nonsteroidal anti-inflammatory drug use before admission.

Overnight, the patient developed bloody bowel movements and was found unconscious. Heparin was discontinued due to concerns for an active gastrointestinal bleed. An electrocardiogram showed signs of acute ST-segment elevation myocardial infraction, and he was taken emergently to the catheterization lab, where he developed seizure-like activity requiring intubation. Ongoing haematochezia prompted the cessation of the catheterization.

The patient's haemoglobin dropped from 13.8 g/dl, on admission to 9 g/dl. Gastroenterology was consulted and performed a colonoscopy, which revealed diffuse bright red blood and clots throughout the colon with no identifiable source despite irrigation *(Fig. 1)*. Continued haemoglobin declined to 7.1 g/dl prompted mesenteric angiography, which showed active extravasation arising from the appendicular branch of the ileocolic artery with no focal lesion identified *(Fig. 2)*. Interventional radiology performed coil embolization of the appendiceal artery without continued active extravasation on post-procedure angiography.

Despite coil embolization, the patient continued to have melena and developed signs of peritonitis the following day. Repeat CT angiography showed no active bleeding but raised concern for mild acute appendicitis *(Fig. 3)*. General surgery was consulted, and an appendectomy was performed. He remained hemodynamically stable, did not require pressor support, and self-extubated without complications. Post-op and pathology findings were consistent with acute appendicitis, with no evidence of necrosis or perforation. No further gastrointestinal bleeding occurred, and the patient was discharged home in stable condition.

DISCUSSION

LGIB from appendiceal sources is uncommon, and optimal management strategies remain debated. While appendectomy is often considered definitive treatment, there are reports of successful colonoscopic clipping or endoscopic therapy at the appendiceal orifice to achieve hemostasis and stabilize patients prior to more definitive intervention[7]. These endoscopic approaches allow

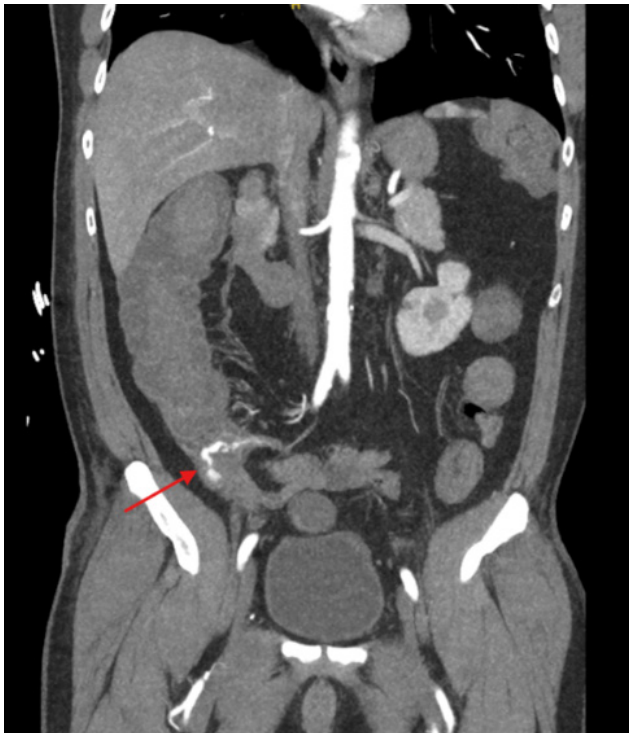


Figure 2. Computed tomography angiogram of the abdomen and pelvis showing active contrast extravasation noted at the base of the cecum and appendix (red arrow).

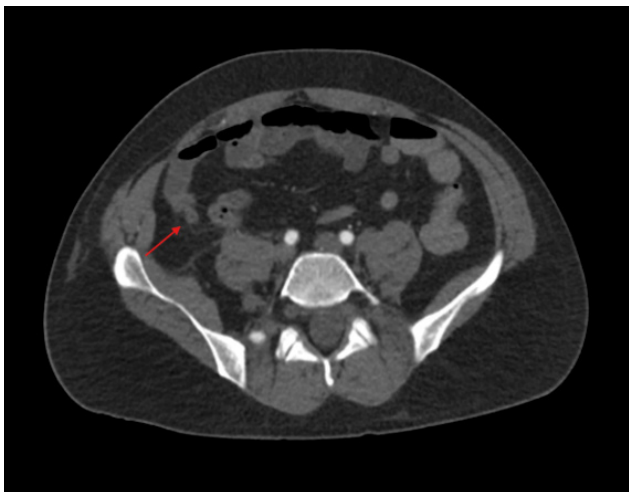


Figure 3. Repeat computed tomography angiogram of abdomen and pelvis showing no active gastrointestinal haemorrhage but suspicion for mild acute appendicitis (red arrow).

temporary control of bleeding and can be advantageous when surgical risk is high or when bleeding is identified early.

The appendix receives blood from a single terminal branch of the ileocolic artery, making it particularly susceptible to ischemic injury following embolization. Ischemic complications after embolization of end-arteries are well documented in the interventional literature, and post-embolization ischemia may manifest as abdominal pain, peritonitis, or imaging findings consistent with appendicitis. Recent reports have specifically described ischemic appendicitis following selective angioembolization for lower gastrointestinal bleeding secondary to post-polypectomy syndrome, reinforcing that this risk is clinically recognized rather than theoretical[8]. In practice, embolization may control hemorrhage but at the expense of ischemia, potentially leading to additional imaging, interventions, and operative management.

In our patient, colonoscopy failed to localize the source due to diffuse bleeding, prompting angiographic localization and subsequent coil embolization. Although initial hemostasis was achieved, the patient developed ongoing melena with clinical and radiographic features of appendicitis. Given the end-arterial blood supply of the appendix, appendicitis following embolization likely reflects ischemic sequelae rather than an unrelated inflammatory process.

The optimal management of appendiceal bleeding should therefore involve a multidisciplinary approach, with early surgical consultation and consideration of endoscopic methods when feasible. In stable patients with identifiable appendiceal bleeding on colonoscopy, endoscopic clipping or other hemostatic techniques can be attempted prior to embolization or surgery, potentially reducing the need for repeated imaging and interventional procedures. Likewise, in patients with significant comorbidity or poor surgical candidacy, selective embolization can be effective but requires vigilant post-procedure surveillance for ischemic complications.

This case underscores the need for clear clinical reasoning when selecting among surgical, endoscopic, and radiologic options for obscure LGIB, considering the risk of post-embolization ischemia and the resources required for repeated interventions.

REFERENCES

1. Saydam S, Molnar M, Vora P. The global epidemiology of upper and lower gastrointestinal bleeding in the general population: a systematic review. *World J Gastrointest Surg* 2023;**15**:723–739. doi: 10.4240/wjgs.v15.i4.723
2. Xing XC, Yang JL, Xiao X. Clinical features, treatments and prognosis of appendiceal bleeding: a case series study. *BMC Gastroenterol* 2023;**23**:377. doi: 10.1186/s12876-023-03025-6
3. Zhou SY, Guo MD, Ye XH. Appendiceal bleeding: A case report. *World J Clin Cases* 2022;**10**:6314-6318. doi: 10.12998/wjcc.v10.i18.6314
4. Siddiqui A, Zafar N, Hakiminezhad M, Jamal Z, Alam I, Khawaja Z. Beyond the Usual Suspects: Appendiceal Bleeding as the Surprising Cause of Lower Gastrointestinal (GI) Bleeding. *Cureus* 2024;**16**:e76663. doi: 10.7759/cureus.76663
5. Oakland K, Chadwick G, East JE, Guy R, Humphries A, Jairath Vet, al. Diagnosis and management of acute lower gastrointestinal bleeding: guidelines from the British Society of Gastroenterology. *Gut* 2019;**68**:776-789. doi: 10.1136/gutjnl-2018-317807
6. Hosse C, Moos M, Becker LS, Sieren M, Müller L, Stoehr F, et al. Trans-arterial embolization for treatment of acute lower gastrointestinal bleeding-a multicenter analysis. *Eur Radiol* 2025;**35**:2746-2754. doi: 10.1007/s00330-024-11102-x
7. Park I, Kwon CI, Ko KH, Hong SP, Park PW. Colonoscopic clipping as a treatment for appendiceal bleeding. *Gut Liver* 2010;**4**:411-414. doi: 10.5009/gnl.2010.4.3.411
8. Crawford LS, Jafri NS, Foote D, Felinski MM, Walker PA, Bajwa KS, et al. Isolated ischaemic appendicitis as a rare complication of selective angioembolization for lower gastrointestinal bleed. *ANZ J Surg* 2023;**93**:404-406. doi: 10.1111/ans.17850