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Incidental Computed Tomography Angiography Diagnosis of Colorectal Angiodysplasia in a Patient Presenting with Isolated Hematochezia

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ABSTRACT

Introduction: Lower gastrointestinal bleeding (LGIB) in older adults requires a precise diagnostic approach. While colonoscopy is the reference standard, multiphasic computed tomography angiography (CTA) is increasingly used for initial vascular mapping. **Case Presentation:** We present the case of an 80-year-old male evaluated for recurrent, isolated hematochezia. Pre-endoscopic CTA demonstrated a tortuous vascular network originating from the inferior mesenteric artery. This network involved the colon, rectosigmoid junction, and perirectal space, accompanied by mild mesenteric fat stranding. **Discussion:** The tomographic findings of arterial tortuosity and early venous return are consistent with colorectal angiodysplasia. This case illustrates the educational value of cross-sectional imaging in the preliminary workup of LGIB. CTA accurately localized the bleeding source, providing a useful anatomical roadmap to guide subsequent endoscopic or endovascular therapy.

KEYWORDS :

Colonic angiodysplasia, Hematochezia, Computed tomography angiography, Vascular ectasia, Lower gastrointestinal bleeding

MAIN ARTICLE

INTRODUCTION

Lower gastrointestinal bleeding (LGIB) is a common cause of emergency admission in the elderly. Although diverticular hemorrhage is the most prevalent etiology, vascular ectasias remain a major vascular cause of LGIB [1]. Lower gastrointestinal endoscopy is the reference standard for diagnosis and targeted therapy. However, multiphasic abdominopelvic computed tomography angiography (CTA) provides a non-invasive mapping of the splanchnic vasculature. This is particularly useful when active hemorrhage or poor bowel preparation limits endoscopic visualization. We report the case of an octogenarian in whom pre-endoscopic CTA demonstrated an inferior mesenteric artery angiodysplasia with colonic and perirectal involvement.

CASE PRESENTATION

An 80-year-old man with no significant past medical history was referred for evaluation of recurrent isolated hematochezia. He denied abdominal pain, weight loss, fever, or changes in bowel habits, including alternating diarrhea and constipation. On admission, he was hemodynamically stable (blood pressure: 130/75 mmHg; heart rate: 72 bpm). Abdominal and proctological examinations were unremarkable.

A contrast-enhanced multiphasic CT angiography (CTA) of the abdomen and pelvis was performed before the scheduled colonoscopy. Axial angiographic images demonstrated dilatation of the inferior mesenteric artery (IMA) and its proximal feeding vessels supplying the vascular malformation (Figure 1). Coronal maximum intensity projection (MIP) reconstructions showed the full anatomical extent of the lesion, with numerous tortuous vessels extending along the descending colon and rectosigmoid junction (Figure 2). Sagittal MIP images further demonstrated pelvic arteriovenous shunting associated with an ectatic perirectal vascular network (Figure 3). Standard axial images additionally revealed vascular tortuosity within the perirectal and pericolic spaces, accompanied by mild adjacent mesenteric fat stranding (Figure 4). Overall, the combination of marked arterial tortuosity, early venous opacification, and lesion distribution was highly suggestive of extensive colorectal and perirectal angiodysplasia.

DISCUSSION

The etiological assessment of lower gastrointestinal bleeding (LGIB) in older adults requires integration of clinical and imaging findings. Although diverticulosis remains the most common cause of LGIB, gastrointestinal angiodysplasia represents a significant vascular cause, accounting for up to 8% of acute bleeding episodes [1]. Angiodysplasias are acquired vascular malformations characterized by dilated mucosal and submucosal vessels. Their development is thought to be related to age-associated vascular degeneration and chronic low-grade venous obstruction [2,3].

The clinical presentation of our patient was consistent with the typical manifestations of angiodysplastic bleeding. Such bleeding is usually painless and intermittent, without obstructive or systemic symptoms. Although atypical presentations, including mechanical bowel obstruction, have been described [4], this patient exhibited the classic pattern of intermittent lower gastrointestinal hemorrhage.

From a diagnostic perspective, colonoscopy remains the reference examination for the evaluation of LGIB. However, its diagnostic yield may be limited by the intermittent nature of bleeding. This case highlights the educational value of CT angiography (CTA) in identifying the bleeding source and characterizing the underlying vascular abnormality. Kennedy et al. [5] demonstrated the high sensitivity of CTA in detecting active gastrointestinal hemorrhage, establishing it as a robust first-line diagnostic tool. Furthermore, Raman et al. [6] emphasized the critical role of advanced volume visualization techniques in multidetector CT (MDCT) for optimizing the detection of subtle vascular lesions. In our patient, CTA with volume visualization demonstrated marked arterial tortuosity arising from the inferior mesenteric artery, with involvement of the colonic, sigmoid, and perirectal territories. The presence of early venous filling further supported the diagnosis of arteriovenous shunting.

When evaluating these tomographic findings, the differential diagnosis should include other causes of LGIB. Diverticular bleeding can present similarly but typically lacks the characteristic early venous return of arteriovenous malformations. Colorectal malignancies or ischemic colitis should also be considered; however, they generally present with distinct morphological features such as focal bowel wall thickening or mass effect, which were absent in this case. The associated localized mesenteric fat stranding observed on imaging should be interpreted cautiously. This finding may reflect local vascular congestion and chronic inflammatory changes related to the underlying vascular malformation rather than an acute ischemic process.

Angiodysplasia may also be associated with systemic conditions reflecting increased vascular fragility, including cardiovascular disease, chronic kidney disease, and acquired coagulation abnormalities [7]. Beyond diagnosis, accurate radiological mapping of the abnormal vessels has important therapeutic implications. Management options for angiodysplasia range from endoscopic argon plasma coagulation (APC) to surgical resection or endovascular techniques [8]. In the present case, transcatheter arterial embolization was not performed. Because the patient remained hemodynamically stable with intermittent, self-limiting bleeding, first-line endoscopic management was preferred to mitigate the potential risk of embolization-induced bowel ischemia. Nevertheless, the detailed information provided by CTA serves as a useful anatomical guide should selective transcatheter embolization become necessary for recurrent severe bleeding.

CONCLUSION

This case emphasizes the role of computed tomography angiography in the evaluation of hematochezia in older adults. The preliminary identification of an inferior mesenteric angiodysplasia validates the utility of CTA for three-dimensional vascular mapping. This objective radiological approach accelerates diagnostic orientation and informs the subsequent therapeutic algorithm.

FIGURES :

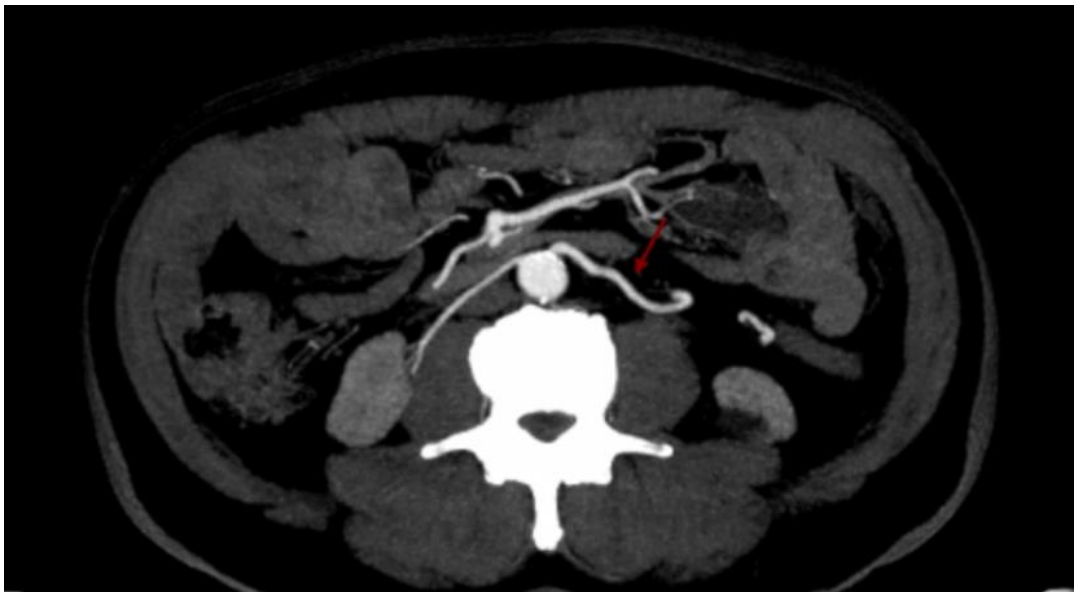

Figure 1: *Axial contrast-enhanced angiographic image demonstrating the origin of the inferior mesenteric artery (IMA) and the proximal feeding vessels of the vascular anomaly (red arrow).*

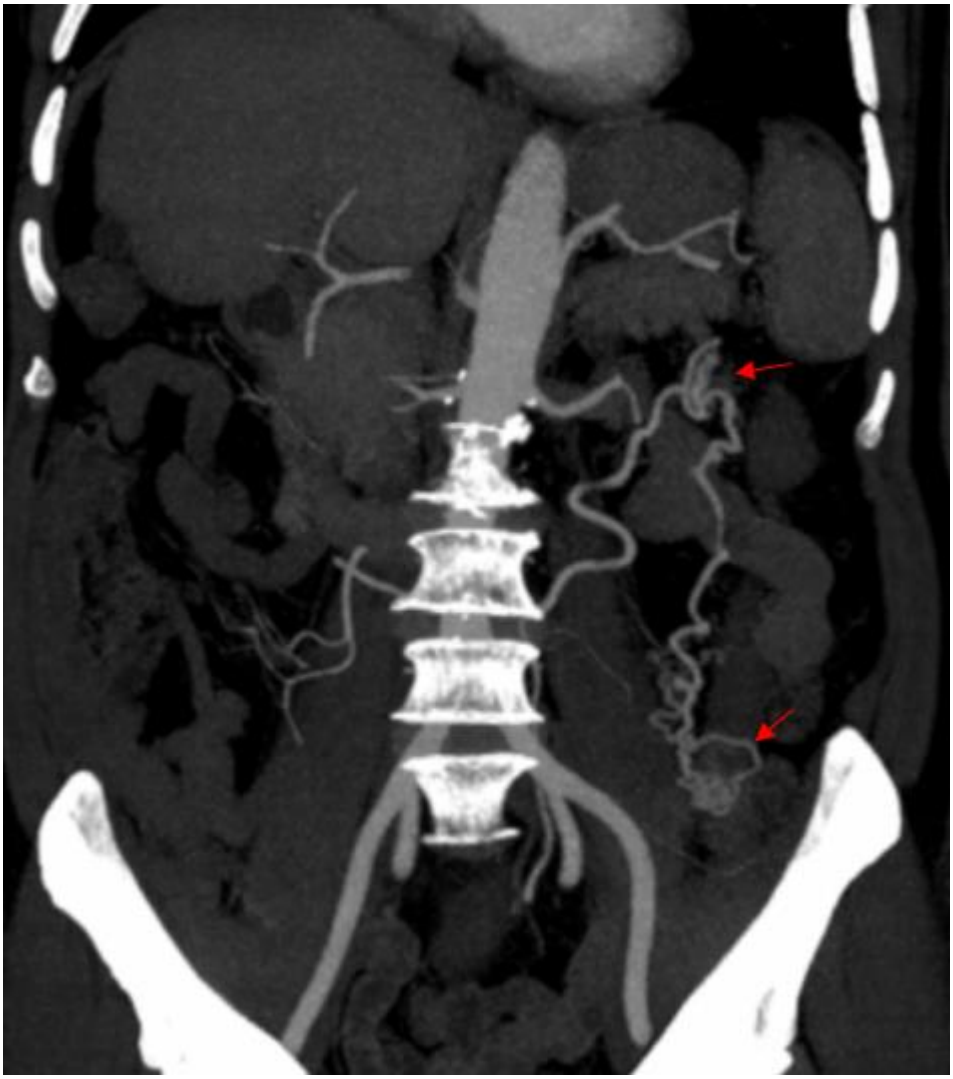

Figure 2 : *Coronal maximum intensity projection (MIP) CT angiographic reconstruction demonstrating the anatomical extent of the vascular malformation and the distribution of tortuous abnormal vessels along the left colon and rectosigmoid junction (red arrows).*

Figure 3:*Sagittal maximum intensity projection (MIP) CT angiographic reconstruction demonstrating the pelvic arteriovenous shunting and ectatic perirectal vascular network (red arrow).*

Figure 4 **:** *Standard axial image illustrating vascular tortuosity within the perirectal and pericolic spaces, accompanied by mild mesenteric fat stranding (red arrow).*

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