Inferior Mesenteric Arteriovenous Fistula - Two case reports

Yeajin Moon, Byungkwon Ahn

Division of Colorectal, Department of Surgery, Kosin University Gospel Hospital, Busan, Korea

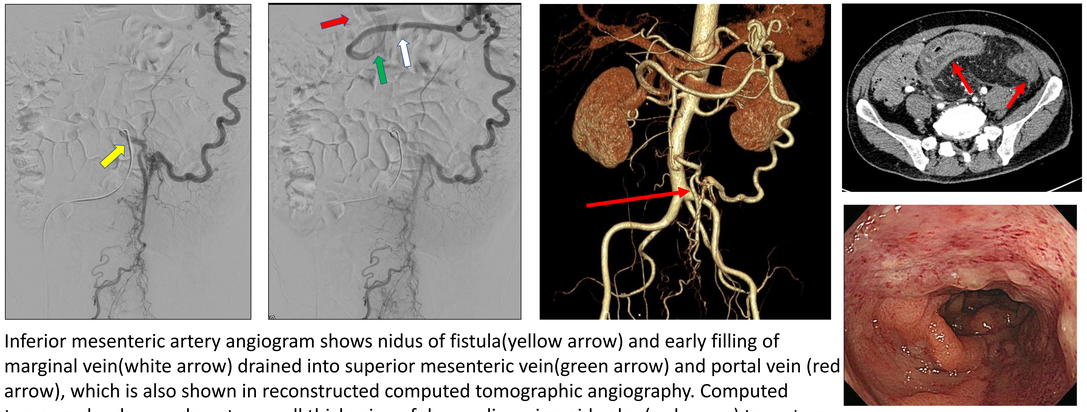
Background

Inferior mesenteric arteriovenous fistula (IMAVF) is an extremely rare vascular anomaly involving **an abnormal communication between the inferior mesenteric artery and vein**. With only 40 cases described in the literature, its etiology can be congenital, iatrogenic, traumatic, or idiopathic. The condition acts as a left-to-right shunt, leading to clinical complications such as ischemic colitis, portal hypertension, and heart failure. Due to the rarity and nonspecific presentation, diagnosis is challenging and often delayed until radiological or intraoperative examination.

We present **two rare instances of IMAVF** in patients of different ages, with **successful treatment through surgical intervention**.

Case 1

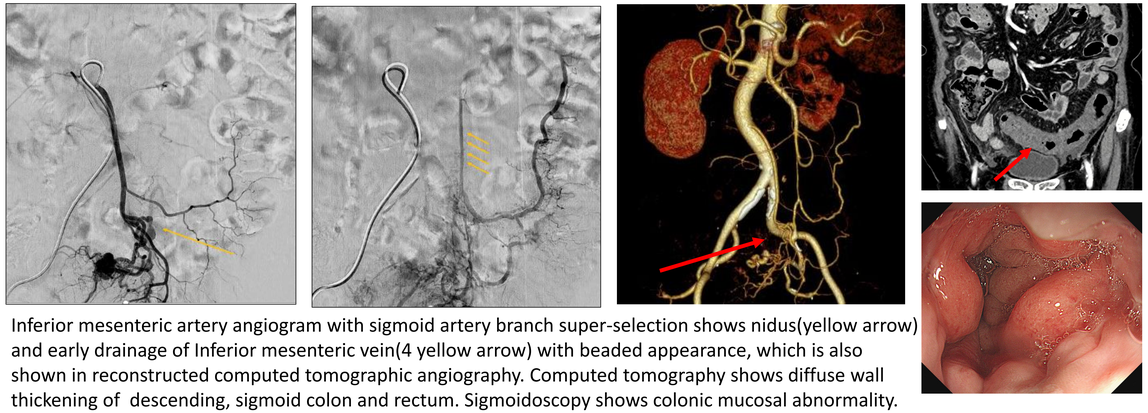
We report the case of a **56-year-old male patient** who presented with symptoms of ischemic colitis, including **abdominal pain and gastrointestinal bleeding**. Physical examination revealed a **palpable thrill and mass in the lower abdomen**. Multidetector computed tomography (CT) and angiography confirmed the diagnosis of an inferior mesenteric arteriovenous fistula, an unusual cause of his symptoms. **Surgical resection of the fistula** was successfully performed, and the patient recovered well without further complications. This case highlights **the importance of considering vascular anomalies in patients with ischemic colitis of unclear origin.**



Inferior mesenteric artery angiogram shows nidus of fistula(yellow arrow) and early filling of marginal vein(white arrow) drained into superior mesenteric vein(green arrow) and portal vein (red arrow), which is also shown in reconstructed computed tomographic angiography. Computed tomography shows edematous wall thickening of descending, sigmoid colon(red arrow) to rectum. Colonoscopy shows ischemic changes with ulcerative changes and mucosal edema.

Case 2

Ten years later, **a 76-year-old female patient** with a history of recurrent acute pyelonephritis (APN) and diverticulitis presented with similar symptoms, including intermittent abdominal pain, lower gastrointestinal bleeding, and signs of **portal hypertension**. Despite her past medical history, there was no significant history of trauma or recent abdominal surgery that could explain the development of the fistula. Imaging studies, including multidetector CT and angiography, revealed an arteriovenous fistula involving the inferior mesenteric artery and vein, contributing to ischemic colitis and portal hypertension. She underwent **successful laparoscopic colon resection**, resulting in complete resolution of her symptoms. This case highlights the **potential for idiopathic AVF to occur even in patients with a complex gastrointestinal history**, such as diverticulitis, further complicating the clinical presentation and diagnosis.



Inferior mesenteric artery angiogram with sigmoid artery branch super-selection shows nidus(yellow arrow) and early drainage of Inferior mesenteric vein(4 yellow arrow) with beaded appearance, which is also shown in reconstructed computed tomographic angiography. Computed tomography shows diffuse wall thickening of descending, sigmoid colon and rectum. Sigmoidoscopy shows colonic mucosal abnormality.

Conclusion

Both cases illustrate **the diagnostic challenges** posed by **inferior mesenteric arteriovenous fistulas** due to their **rarity and nonspecific clinical presentation**. Preoperative imaging, particularly CT and angiography, plays a crucial role in establishing the diagnosis. Surgical resection remains the definitive treatment with favorable outcomes. These cases emphasize the need for **awareness of this rare condition in patients presenting with ischemic colitis, portal hypertension, or unexplained abdominal symptoms**. Further study of its pathophysiology and long-term follow-up is warranted to better understand recurrence risks and outcomes.

sages2025.1c307b4