

## Colonic Ischemia in an Elderly Male with Ischemic Heart Disease: An Uncommon Diagnosis Mimicking Inflammatory Bowel Disease

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### Abstract

**Background:** Colonic ischemia (CI) is the most prevalent form of gastrointestinal ischemia, frequently affecting elderly patients with underlying cardiovascular comorbidities.

**Case Report:** We present the case of a 72-year-old male with a history of ischemic heart disease (IHD) and hypertension who presented with acute abdominal pain and hematochezia. Diagnostic workup, including computed tomography (CT) angiography and colonoscopy, confirmed the diagnosis of segmental colonic ischemia affecting the splenic flexure and descending colon. This case underscores the critical importance of considering CI in the differential diagnosis of abdominal pain in high-risk patients and highlights the role of a multifaceted diagnostic approach. Management focused on supportive care, leading to a successful resolution. The case also discusses the potential pathophysiological links between IHD, certain cardiac medications, and the development of non-occlusive colonic ischemia.

**Keywords:** Colonic ischemia, Ischemic heart disease, CT angiography, Non-occlusive mesenteric ischemia, Colonoscopy.

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#### Introduction:

Colonic ischemia represents a spectrum of disease characterized by a sudden reduction in blood flow to the colon, leading to inflammation and potential tissue injury. It is a critical cause of lower gastrointestinal bleeding in the elderly population, with a higher incidence in individuals over the age of 60. Recognized risk factors include atherosclerosis, hypertension, congestive heart failure, diabetes mellitus and certain medications.<sup>1,2</sup>

The clinical presentation is often variable, ranging from mild, self-limiting abdominal pain and bloody diarrhea to severe fulminant colitis with perforation. The diagnosis can be challenging as it mimics other abdominal pathologies like inflammatory bowel disease or diverticulitis. Colonoscopy remains the gold standard for diagnosis, revealing characteristic findings such as mucosal edema, ulceration, petechiae and cyanosis, typically in watershed areas like the rectosigmoid junction and splenic flexure.<sup>3</sup>

In elderly patients presenting with acute abdominal pain, hypotension and hematochezia, the differential diagnosis is broad. Key considerations include ischemic colitis, acute mesenteric ischemia (AMI), Infectious Colitis, Inflammatory Bowel Disease (IBD), Pseudomembranous Colitis (C. difficile), colonic neoplasm with superimposed infection or ischemia, diverticulitis and small bowel obstruction or volvulus.<sup>4</sup>

We report a classic yet instructive case of colonic ischemia in a patient with known IHD, demonstrating a typical presentation, a standard diagnostic pathway, and a favorable outcome with conservative management. This report aims to reinforce clinical awareness of this condition.

#### Case Presentation:

A 72-year-old male presented to the gastroenterology department with a 2 days history of acute, crampy lower abdominal pain and the passage of bright red blood per rectum. The pain was moderate to severe in intensity, non-radiating and associated with tenesmus.

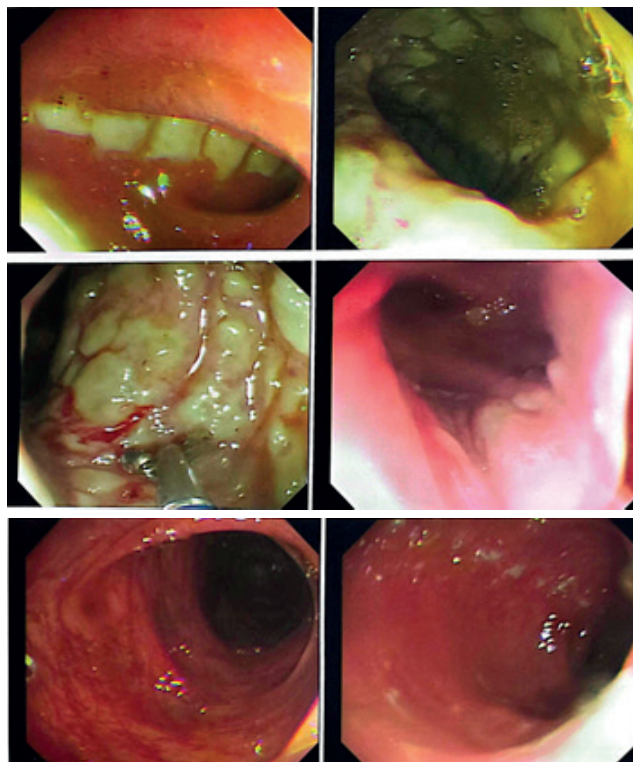
He reported passing three bloody bowel movements on the day of admission. He denied fever, vomiting, recent antibiotic use, or sick contacts.

His past medical history was significant for ischemic heart disease status post percutaneous coronary intervention (PCI) with drug-eluting stent placement to the left anterior descending artery 04 years prior, well-controlled hypertension and dyslipidemia. His home medications included aspirin 75 mg daily, atorvastatin 10 mg daily, and metoprolol succinate 50 mg daily. He had no known drug allergies. On physical examination, the patient was alert and mildly distressed due to abdominal pain. Vital signs revealed a blood pressure of 150/85 mmHg, heart rate of 92 bpm, afebrile and oxygen saturation of 98% on room air.

Abdominal examination revealed a soft, non-distended abdomen with mild tenderness to palpation in the left lower quadrant without guarding or rebound. Bowel sounds were normoactive. Digital rectal exam confirmed hematochezia. Initial laboratory investigations were notable for a leukocyte count of  $12.5 \times 10^9/L$  (reference range: 4.0-11.0) with neutrophilia. Hemoglobin was 12.8 g/dL (baseline 14.5), suggesting acute blood loss. Serum lactate, renal function and electrolytes were within normal limits. Electrocardiogram showed normal sinus rhythm with no acute ischemic changes.

A contrast-enhanced CT scan of the abdomen and pelvis was performed to evaluate the cause of hematochezia. The scan revealed circumferential wall thickening and submucosal edema involving the descending colon and splenic flexure. There was no evidence of pneumatosis intestinals, portal venous gas, or frank perforation. CT angiographic images on next day showed patency of the celiac, superior mesenteric, and inferior mesenteric arteries without occlusive thrombus; scattered atherosclerosis was present. The small bowel appeared normal.

The patient was admitted for conservative management. He was managed as nil per os (NPO), received intravenous hydration, and was started on broad-spectrum antibiotics (piperacillin-tazobactam) empirically. Cardiology was consulted and it was deemed safe to continue his dual antiplatelet therapy given his recent cardiac stent history. On hospital day 3, a colonoscopy was performed after a gentle bowel preparation. The examination revealed a segmental area of erythematous, edematous and ulcerated mucosa with scattered petechiae extending from the splenic flexure to the mid-descending colon (Figure 1). The appearance was classic for ischemic colitis. The mucosa in the proximal colon appeared normal. Biopsies were obtained from the affected area.



**Figure 1:** Colonoscopic image showing ulcerated, hemorrhagic, and edematous mucosa in the descending colon, consistent with ischemia.

Histopathological examination of the biopsy specimens confirmed the diagnosis, showing mucosal necrosis, hemorrhage, cryptitis, and ghost cells; findings pathognomonic for ischemic colitis.

### Discussion:

This case illustrates a typical presentation of colonic ischemia in a high-risk individual. Our patient possessed multiple classic risk factors: advanced age, hypertension and significant underlying atherosclerotic cardiovascular disease (IHD). The pathogenesis in this case is likely multifactorial, attributed to non-occlusive mesenteric ischemia (NOMI). NOMI occurs due to low-flow states without a major vascular occlusion, often triggered by systemic hypoperfusion, vasoconstriction, or a combination of both.<sup>4</sup> The patient's IHD is a key component, as a compromised cardiac output can lead to reduced splanchnic perfusion. Furthermore, his medication regimen, specifically the beta-blocker (metoprolol), may have contributed by promoting mesenteric vasoconstriction and reducing cardiac output, a known but often overlooked potential precipitant of CI.<sup>4</sup> The role of dual antiplatelet therapy (aspirin and clopidogrel) in causing hematochezia is undeniable, but it is more likely that these agents exacerbated the bleeding from a primary ischemic insult rather than caused it de novo. The diagnosis was efficiently established using a combination of CT angiography and colonoscopy. CT is excellent for ruling out other acute abdominal pathologies and assessing the major vessels, while colonoscopy provides direct visualization and allows for histological confirmation, which is

crucial for definitive diagnosis and ruling out other mimics like IBD or infection.<sup>3,5</sup>

Management of CI is primarily supportive in non-gangrenous cases, focusing on bowel rest, intravenous fluids, and treatment of underlying comorbidities.<sup>6,7,8</sup> The decision to continue dual antiplatelet therapy was complex but was made in conjunction with cardiology due to the high risk of in-stent thrombosis, outweighing the potential risk of continued bleeding from the self-limiting ischemic colitis.<sup>9,10</sup>

This case reinforces that CI should be high on the differential for any elderly patient with cardiovascular risk factors presenting with abdominal pain and hematochezia. A high index of suspicion and a structured diagnostic approach are key to preventing unnecessary interventions and ensuring a positive outcome.

### Conclusion:

Colonic ischemia is an important diagnostic consideration in elderly patients with abdominal pain and bleeding, particularly those with underlying cardiovascular disease. A high clinical suspicion, timely imaging and endoscopic evaluation are paramount for accurate diagnosis. Most cases are non-occlusive and respond favorably to conservative medical management. Clinicians must also carefully review the patient's medication profile, as common cardiac drugs can be contributing factors. A multidisciplinary approach involving gastroenterology, cardiology and internal medicine is often essential to optimize care and manage competing risks, as demonstrated in this case.

**Conflict of Interest:** The authors declare no conflict of interest.

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