

Emergency Imaging

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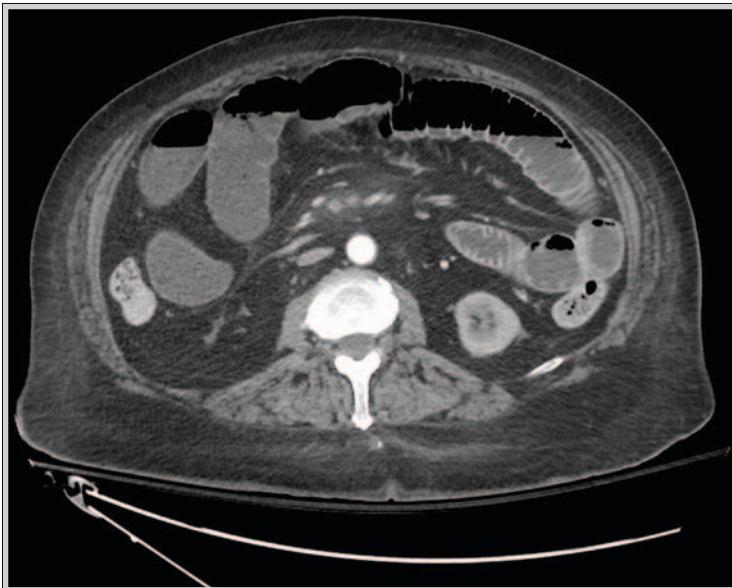


Figure 1



Figure 2

A 60-year-old woman presents to the emergency department with severe, diffuse abdominal pain. She presented earlier in the week with chest pain and underwent cardiac catheterization, which revealed coronary artery disease.

A CT examination of the abdomen is performed. Representative axial (Figure 1) and coronal (Figure 2) images from that study are shown.

What is your diagnosis?

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ANSWER

The axial CT image reveals the presence of multiple loops of dilated bowel throughout the abdomen (red and white arrows, Figure 3). No distal obstruction was detected. There is differential enhancement of the bowel wall, with the loops of bowel on the right side of the abdomen having decreased enhancement of the wall (white arrows) compared to the loops on the left (red arrows). There is infiltration of the fat surrounding the branches of the superior mesenteric artery (SMA), indicating mesenteric congestion (white asterisk) and a possible filling defect within one of the branches (blue arrow) of the SMA. The coronal image (Figure 4) also demonstrates the presence of dilated loops with decreased wall enhancement (white arrows) and dilated loops with normal to increased wall enhancement (red arrows). In addition, the coronal image confirms the abrupt termination of a branch of the SMA, with a filling defect seen distal to the cutoff point (blue arrow). These findings are consistent with the presence of a clot within the SMA and indicate that mesenteric ischemia is the cause of this patient's abdominal pain.

Acute mesenteric ischemia is an uncommon cause of acute abdominal pain but an important diagnosis to consider, as it has a mortality rate of approximately 50%; in patients whose ischemia is due to an acute embolus, such as our patient, mortality may increase to over 70% if diagnosis is delayed more than 24 hours.¹ The classic

presentation of severe abdominal pain but less impressive physical exam may be absent in up to 25% of cases.² Laboratory abnormalities associated with acute mesenteric ischemia include hemoconcentration, leukocytosis, a high anion gap, and lactic acidosis, but these are nonspecific as well. Acute mesenteric ischemia has a 3:1 female predominance and most commonly affects patients 60 to 80 years of age.¹ Emboli of cardiac origin account for a high percentage of mesenteric ischemia cases caused by arterial embolism; such emboli may be associated with atrial arrhythmia, congestive heart failure, car-

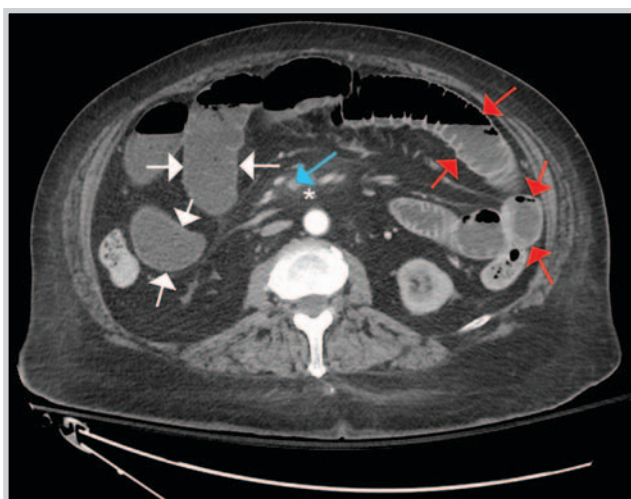


Figure 3

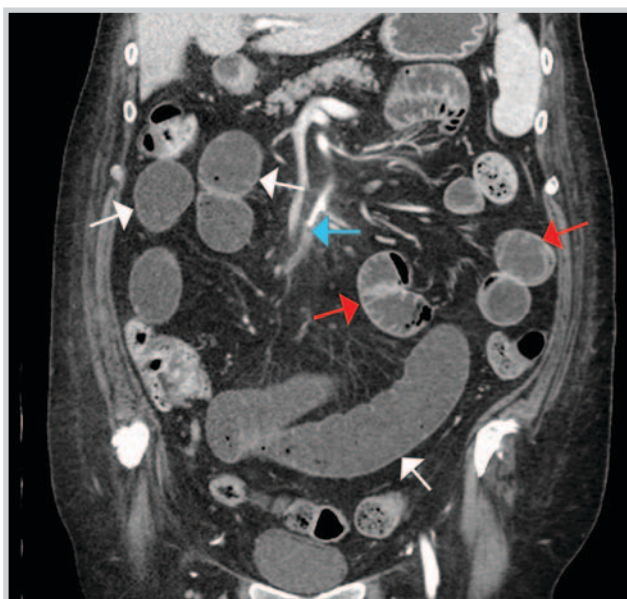


Figure 4

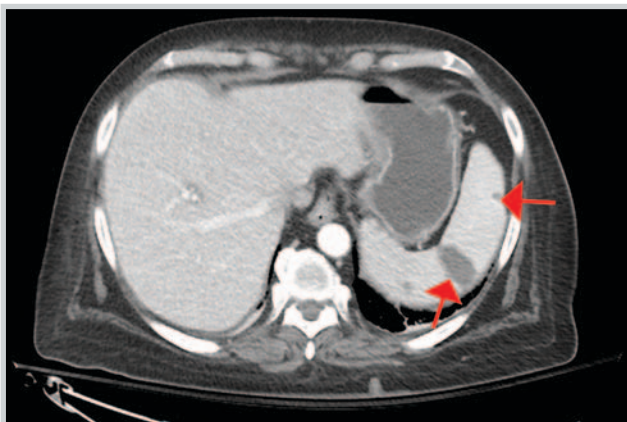


Figure 5

diomyopathy, recent infarction, valvular disease, endocarditis, and recent catheter angiography.¹

Because the presentation of mesenteric ischemia is often nonspecific, imaging plays a critical role in timely diagnosis, with studies utilizing CT angiography demonstrating up to 100% positive predictive and 96% negative predictive values.³ Findings on CT include bowel wall thickening, abnormal bowel wall enhancement, mesenteric congestion, dilated loops of bowel, pneumatosis intestinalis, ascites, vascular thrombus/occlusion, and associated solid organ infarcts.⁴ An axial CT image through the spleen in our patient revealed the presence of multiple splenic infarcts (Figure 5, red arrows). Signs of acute mesenteric ischemia can be subtle in some

cases, but coronal and other multiplanar reformats have been shown to increase detection of these findings.⁴

Treatments for acute SMA thrombosis include surgical/endovascular thrombectomy, bypass, and/or stenting. **EM**

REFERENCES

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