

## Heart block and nonocclusive mesenteric ischemia

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An 88-year-old woman presented with 1 day of lower abdominal pain and bloody diarrhea. She claimed fatigue and dyspnea on exertion for the past 3 weeks. She had been healthy all her life and took no medications. She was afebrile with a heart rate of 40 beats per minute and blood pressure of 134/61 mmHg. Her abdomen was soft with minimal lower tenderness, and the exam was otherwise normal. Lab chemistries, lactate, and CBC were normal except WBC of 23.54. We obtained the ECG shown in Fig. 1 and the abdominal CT shown in Fig. 2. She was admitted to the cardiology service. We ordered the CT because we believed that any abdominal tenderness in such

an elderly patient could indicate serious pathology, such as abscess, aortic aneurysm, or mesenteric ischemia.

Upon further evaluation, she was found to have heart block with non-occlusive mesenteric ischemia. The ECG reveals second-degree atrioventricular block with 2:1 conduction. If the PR interval increases progressively prior to a non-conducted P wave, the atrioventricular block is Mobitz type I. In Mobitz type II, the non-conducted beats are not heralded by an increasing PR interval, as noted in this patient [1]. All type II or symptomatic type I patients are candidates for pacemaker implantation [2].

The CT image reveals colonic wall thickening with mesenteric stranding, consistent with ischemic colitis. However, the mesenteric vessels were patent, leading to a diagnosis of nonocclusive mesenteric ischemia. Up to 30% of mesenteric ischemia cases fall into this category, usually in the setting of low cardiac output [3]. Previous case reports most often describe this phenomenon in settings such as hemodialysis and cardiac or vascular surgery [4–6]. As with all mesenteric ischemia, the classic presentation is pain out of proportion to the exam; hematochezia and lactic acidosis are late findings whose absence should not influence the workup. We believe our patient's heart block and bradycardia impaired cardiac output, causing bowel hypoperfusion. The normal blood pressure we observed must have belied prior periods of hypotension.

Treatment is directed at reversal of the low-flow state, sometimes followed by injection of vasodilators such as papaverine into the mesenteric vessels [3]. Our patient had a pacemaker placed and subsequently recovered uneventfully.

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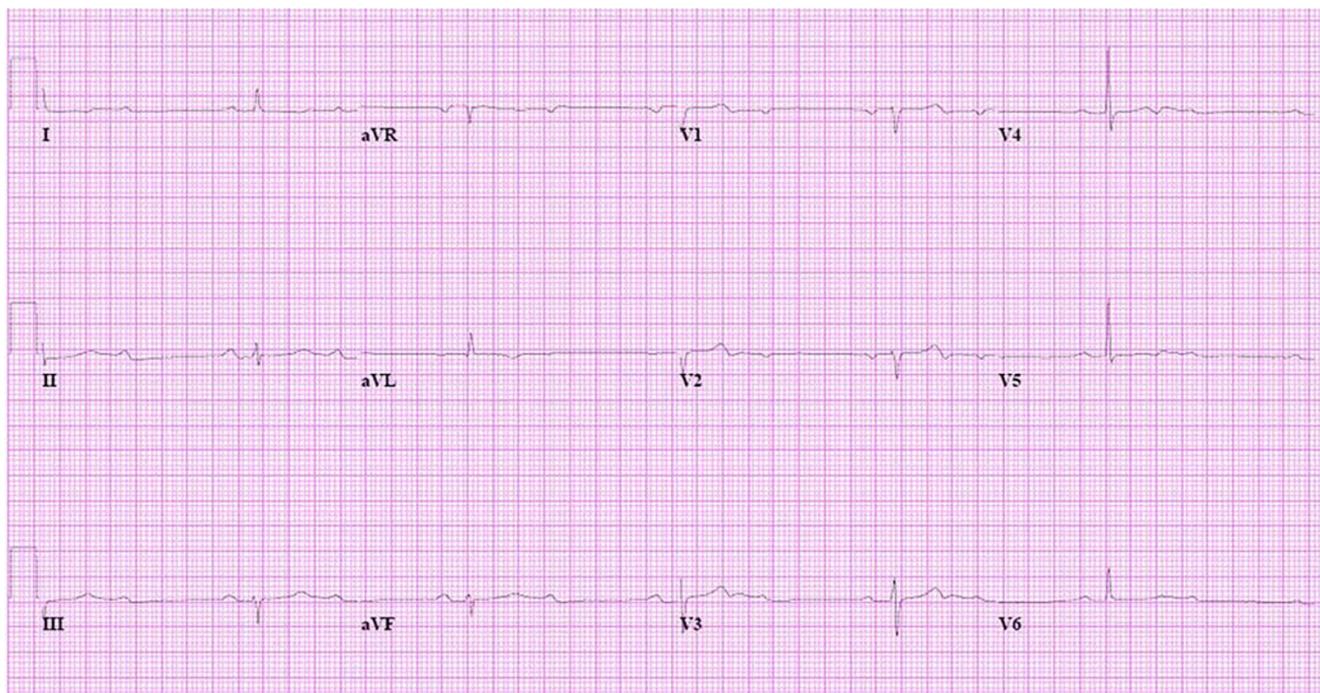
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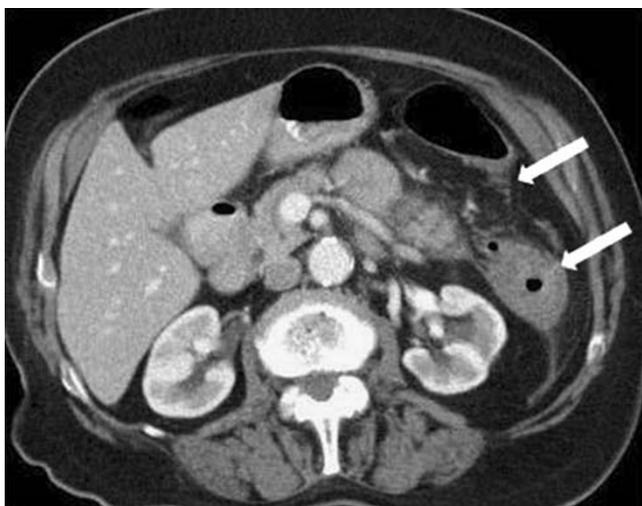
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**Fig. 1** Electrocardiogram showing regular bradycardia with a 2:1 ratio of P waves to QRS complexes



**Fig. 2** Transverse computed tomographic (CT) image showing colonic wall thickening and surrounding mesenteric stranding (arrows)

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