

Mid-Aortic Syndrome

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A 15-yr-old male with ischemic bowel pain and mid-aortic syndrome presented for surgical correction. An aortogram revealed narrowing of the aorta (*black arrow*) from the level of the celiac artery to the origin of the inferior mesenteric artery. Whereas the right renal artery (*dotted arrow*) branched off the narrowed segment of the aorta, the left kidney was supplied entirely from collateral vessels from the celiac axis (*white arrows*).

Mid-aortic syndrome is responsible for 0.5 to 2% of stenotic lesions of the aorta present in children and young adults.¹ Up to 85% of patients have narrowing at a level that involves the renal arteries. This chronically compromises renal blood flow, which leads to worsening renovascular hypertension and kidney disease. Additionally, up to 70% of patients have superimposed unilateral or bilateral renal artery stenosis.² Hypovolemia and hypotension induced

during surgery and anesthesia may lead to acute worsening of already compromised renal perfusion.

Anesthesiologists should consider using invasive blood pressure monitoring in an upper extremity, and a foley catheter, to titrate blood pressure to levels that maintain adequate urine output before and after aortic cross-clamping. Noninvasive blood pressure monitoring in a lower extremity can help determine the blood pressure gradient between the upper and lower extremity before, and improvement after, surgical repair of the narrowing.² Spinal cord protection measures have not routinely been used because only 3% of patients with mid-aortic syndrome have aortic narrowing at a level high enough that cross-clamping will lead to spinal cord ischemia.^{2,3}

Competing Interests

The authors declare no competing interests.

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