

# Incidental Diagnosis of Interrupted Aortic Arch in a 72-Year-Old Man

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**A** 72-year-old man who had chest pain and an abnormal myocardial perfusion scan was brought to the cardiac catheterization laboratory for evaluation. The patient had a history of refractory hypertension and had experienced symptoms of intermittent claudication for several years. A guidewire could not be passed to the aortic arch via the femoral approach; descending thoracic aortography revealed complete occlusion of the descending thoracic aorta (Fig. 1). A right ventriculogram, performed with an NIH catheter, confirmed complete occlusion of the aorta distal to the origin of the left subclavian artery (Fig. 2). Multiple collateral vessels filled the descending aorta. The bilateral renal arteries were patent. There was an 80-mmHg gradient between the femoral artery and the aortic arch, which was accessed using a right brachial artery approach. The patient underwent magnetic resonance angiography (MRA). Figures 3 and 4 show selected MRA cuts that reveal the interruption in the aortic arch and the prominent collateral vessels to the descending aorta. The patient was also found to have a bicuspid aortic valve; a 3-dimensional MRA reconstruction is shown in Figure 5.

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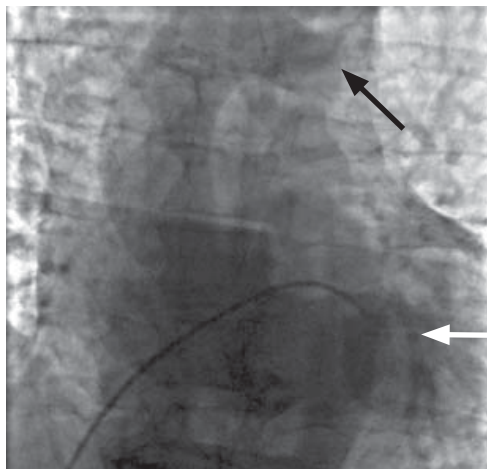
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**Fig. 1** The descending thoracic aortogram shows complete interruption of the aorta in the upper thorax (arrow).

Real-time motion image is available at [www.texasheart.org/journal](http://www.texasheart.org/journal).

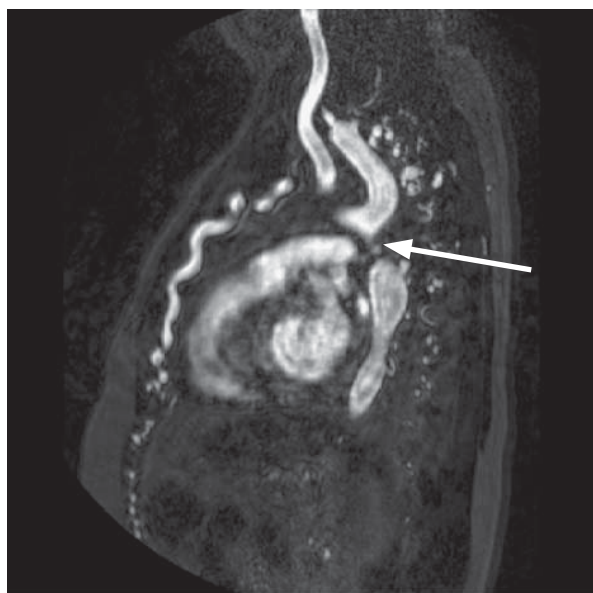


**Fig. 2** Right ventriculogram shows the aortic arch with complete interruption from the descending thoracic aorta (black arrow). The left pulmonary artery (white arrow) is also visible.

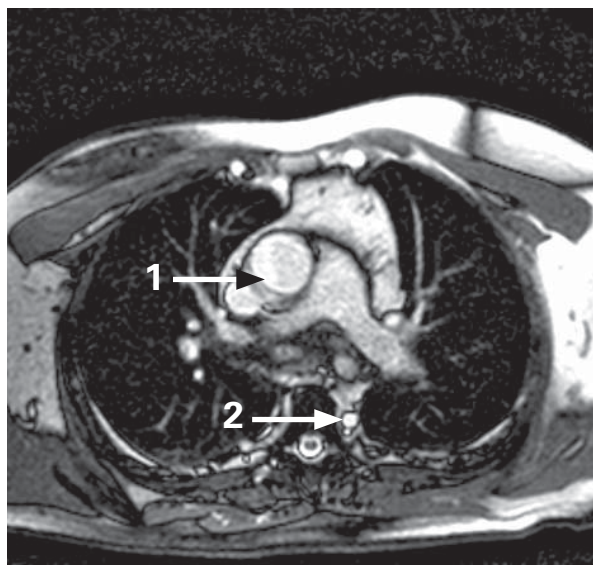
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## Comment

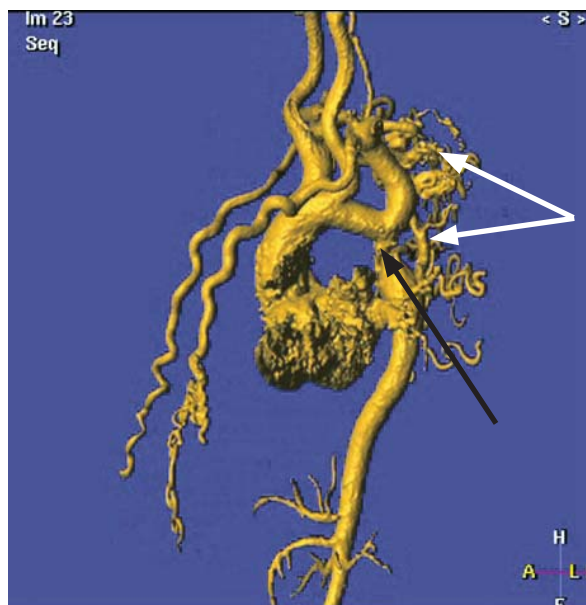
Interrupted aortic arch (IAA) is an extremely rare congenital malformation that occurs in 3 per million live births and accounts for 1% of all congenital heart disease.<sup>1</sup> This anomaly is an extreme form of aortic coarctation, characterized by total luminal and anatomic interruption between the ascending and descending thoracic aorta.<sup>2</sup> Only a few cases of IAA in adults have been reported in the medical literature.<sup>3-8</sup> Our patient's



**Fig. 3** Magnetic resonance angiographic reconstruction shows the interrupted aortic arch in the sagittal plane (arrow).



**Fig. 4** Magnetic resonance angiographic cross-section at the level of the origin of the great vessels shows the ascending thoracic aorta (1) and the atretic descending thoracic aorta (2).



**Fig. 5** Three-dimensional reconstruction of magnetic resonance angiogram shows the area of interest with multiple collateral vessels (black arrow), some of which are prominent (white arrows).

IAA was found incidentally during cardiac catheterization.

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