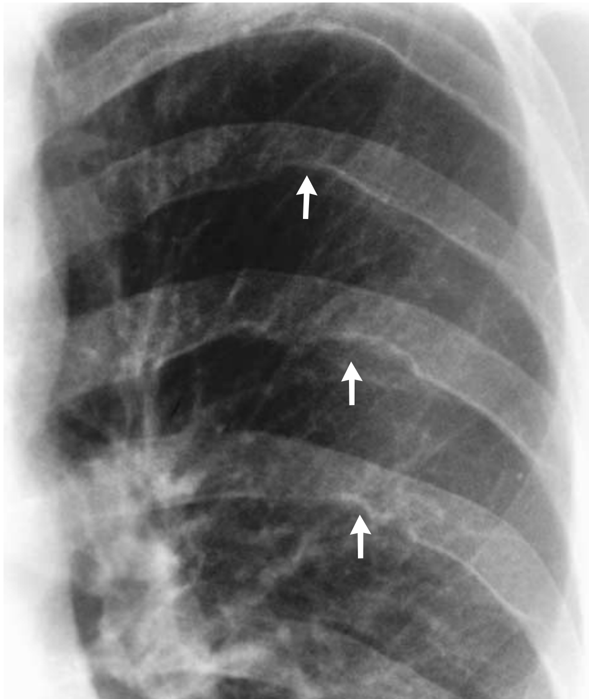
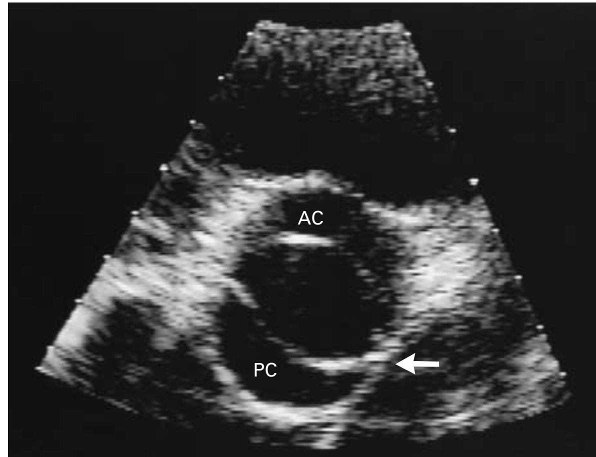
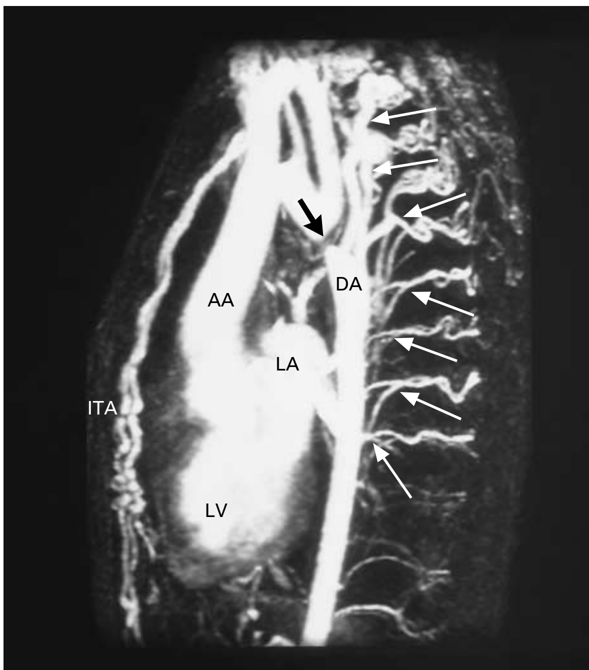
Images in Clinical Medicine



A



B



C

Aortic Coarctation and Bicuspid Aortic Valve

A 30-year-old farmer was referred for evaluation of a bicuspid aortic valve. He had no history of hypertension. He had no symptoms other than mild dyspnea and aching calves on walking briskly. On examination he had a regular pulse (78 beats per minute) with a pronounced radiofemoral delay. The blood pressure was 148/92 mm Hg in the right arm and 148/76 mm Hg in the left arm while he was sitting upright. A grade 3/6 mid-to-late systolic murmur was present at the apex. Electrocardiography revealed normal sinus rhythm without features of left ventricular hypertrophy. The chest roentgenogram revealed marked rib notching (arrows in Panel A). An echocardiogram confirmed the presence of a bicuspid aortic valve (Panel B) without stenosis, and continuous-wave Doppler scanning of the descending aorta showed marked diastolic runoff consistent with the presence of severe coarctation. Magnetic resonance imaging of the chest demonstrated severe focal coarctation (black arrow in Panel C), measuring 1 mm, just beyond the left subclavian artery. Numerous large collaterals were present (white arrows). The atretic segment of aortic arch was excised, and a 20-mm Hemashield graft was inserted. The blood pressure was 110/76 mm Hg six months after surgery. AC denotes anterior cusp, PC posterior cusp, AA ascending aorta, DA descending aorta, ITA internal thoracic arteries, LV left ventricle, and LA left atrium.

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