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IMAGES IN CARDIOLOGY

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A common cause of secondary hypertension: coarctation of the aorta

A 16 year old male was referred to our department with hypertension refractory to medical treatment. He had recurrent episodes of headache. On physical examination, his blood pressures in right and left arms were 190/120 and 180/120 mm Hg, respectively. Also a systolic ejection murmur of grade 2/6 was present at the left upper sternal border radiating to the interscapular region. Femoral pulsations were diminished. The ECG revealed left ventricular hypertrophy. The chest x ray showed no pathology, but echocardiography revealed a bicuspid aortic valve, left ventricular hypertrophy, normal ascending aortic size, and an ejection fraction of 67% with normal systolic and diastolic dimensions. By using continuous wave Doppler, a 50 mm Hg pressure gradient was assessed 3–4 cm from the left subclavian artery with the supra-sternal notch view. Computed tomographic angiography (CTA) of the thoracic aorta was performed. CTA showed a significant coarctation of the thoracic aorta distal to the origin of the left subclavian artery (panel). It was decided to undertake surgical intervention to correct the problem.

Hypertension in teenagers and young adults is uncommon. As secondary causes are more commonly found in this age group than in older adults, aortic coarctation should be considered. Thus, palpation of femoral pulses and measurement of blood pressure in the limbs should be performed in every hypertensive young patient. Early diagnosis and treatment are essential for

Computed tomographic angiography of the thoracic aorta showing a significant coarctation beyond the origin of the left subclavian artery (arrows).

the prevention of morbidity and mortality from premature cardiovascular complications. Surgical or percutaneous techniques should be performed together with medical treatment to prevent end organ damage.

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