Abdominal aortic pseudocoarctation associated with renal artery occlusion

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DESCRIPTION

A 45-year-old man was admitted to hospital due to uncontrolled hypertension. He had hypertension for 15 years and was on trandolapril+verapamil and cardura treatment. One year ago renal artery stenosis was detected by ultrasound but the patient declined further evaluation at that time. He had no symptomatic coronary artery disease or peripheral arterial disease. He denied chest pain, intermittent claudication and syncope. At admission blood pressure was 200/110 mm Hg and there was no difference at both arms. There was no pulse delay in the lower extremities. Pulse examination was normal. There were no murmurs at cardiac auscultation. No carotid bruit was heard. There was a severe abdominal bruit over the trajectory of the left renal artery. Serum creatinine was 1.1 mg/dl and potassium was 4.6 mEq/l. There was normal urinalysis. Renal Doppler ultrasound showed the following findings: right kidney 104×44 mm, left kidney 116×45 mm, cortical thickness was normal and echogenicity was grade 1 increased. Contrast-enhanced abdominal CT angiography (figure 1A) revealed a left kidney of 97 mm longitudinal length. There was severe tortuosity in the distal parts of the aorta along with an aortic pseudocoarctation. The origin of the left renal artery from the aorta was not sufficiently visualised. Nephrogram was delayed in the left kidney. The

patient underwent conventional angiography (figure 1B). Left main renal artery and renal parenchyma were not enhanced with contrast. The angiographic picture was consistent with renal artery occlusion. Stent placement could not be carried out due to near total occlusion of the vessel. The patient declined surgical revascularisation. His blood pressure control was attained with ramipril, doxazosin, spirinolactone, amlodipin and metoprolol.

Abdominal aortic pseudocoarctation (AAP) is exceedingly rare. Previously, we had reported abdominal aortic pseudocoarctation incidentally found in a patient who was being searched for a secondary hypertension cause.¹ To our knowledge, this is the sixth reported case of AAP in the literature. The thoracic form of the condition that is much more prevalent usually involves the aortic arch and may be associated with pseudoaneurysm formations.² AAP is generally recognised as a benign condition with no luminal narrowing and consequent significant clinical associations.³ In only one of the previously reported cases, AAP was associated with bilateral atherosclerotic renal artery stenosis.⁴ In our patient, AAP was associated with left renal artery occlusion. This may represent only an incidental co-occurrence. On the other hand, severe atherosclerotic disease may have distorted both abdominal aorta and the renal arteries.

Figure 1 Digital subtraction angiography (A) and contrast-enhanced coronal reformatted MIP (maximum intensity projection) images on multidetector computed tomography (MDCT) of the abdomen (B) showing severe abdominal aortic pseudocoarctation and absence of left renal perfusion due to renal artery occlusion (arrows). There are calcific atherosclerotic plaques in the MDCT section.

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Learning points

- ▶ Abdominal aortic pseudocoarctation is a very rare developmental abnormality and may be a potential renovascular cause of uncontrolled secondary hypertension.
- ▶ Contrast-enhanced abdominal CT angiography or conventional abdominal aortography can establish the final diagnosis.
- ▶ Abdominal aortic stenting or surgical angioplasty is the only effective treatment for abdominal aortic pseudocoarctation and renal artery stenosis.

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