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LETTER TO THE EDITOR

A case of aortic arch coarctation, bicuspid aortic valve and aortic sinus aneurysm in an adult with moderate hypertension

KEYWORDS
Aortic coarctation;
MRI angiography;
Biscupid aortic valve

This is a case of a 36 year old man with controlled hypertension under treatment with olmesartan and nebivolol who was referred to our Outpatient Department for echocardiographic evaluation. Auscultation revealed a systolic murmur heard at the back and the echocardiographic examination revealed bicuspid aortic valve with mild aortic regurgitation and at least moderate aortic coarctation. The patient's complaints beyond hypertension were episodes of dizziness and light-headedness, which interfered with his every day activities.

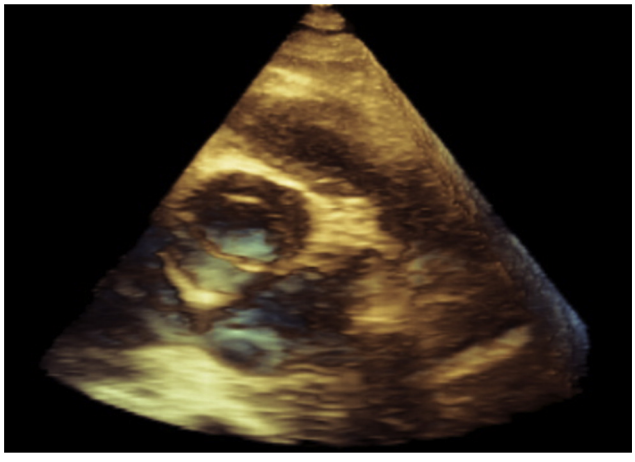

Figure 1 4D image illustrating the bicuspid aortic valve with an aneurysm of non-coronary sinus of valsava.

Following specialist imaging as seen on Figs. 1—3, the patient was taken to the cath lab, where the coarctation was dealt with by implantation of a covered stent (Figs. 4—5). The patient's hypertension and episodes of light-headedness subsided entirely within the next few days. He remains asymptomatic 1 year post interventional treatment.

Coarctation of the aorta is a relatively common entity of congenital heart disease, with an estimated incidence of

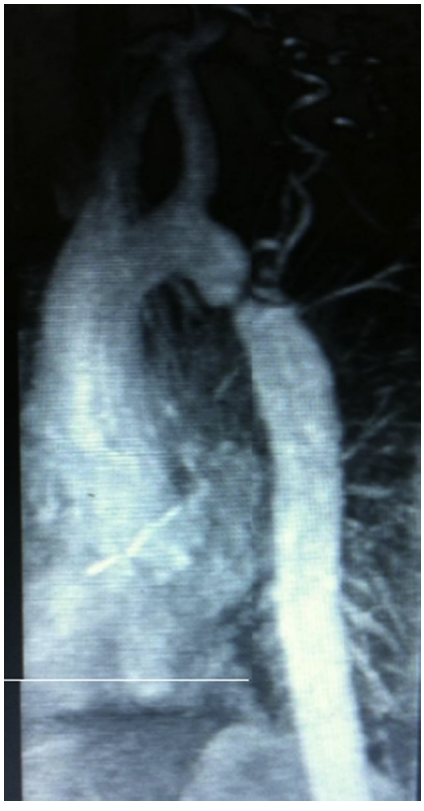

Figure 2 CW Doppler at descending aorta with elevated velocities (3.3 m/sec).

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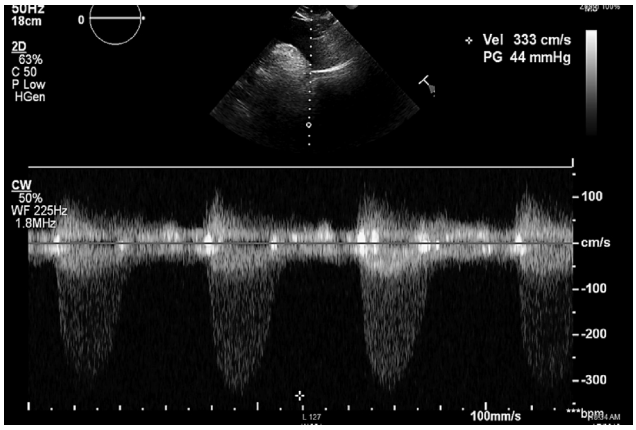

Figure 3 Cardiac-MRI aortography; Three-dimensional reconstruction of a gated contrast angiogram for the same patient, which demonstrates transverse arch hypoplasia, coarctation of the aorta at the isthmus (arrow), and dilated intercostal arteries (collaterals).

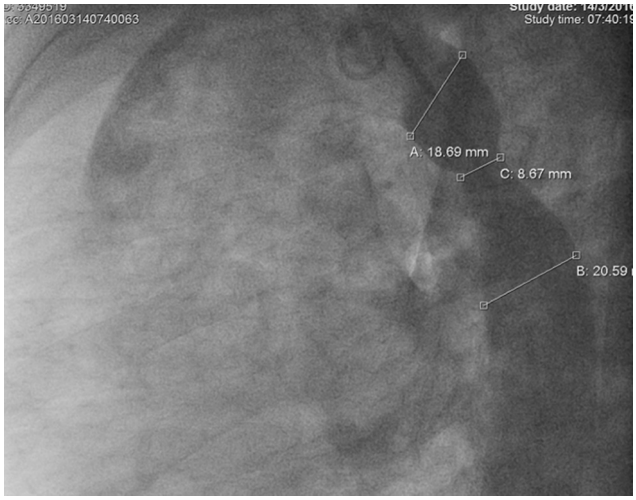

Figure 4 Angiography of the aorta revealing coarctation, where appropriate measurements were taken.

approximately 3 cases per 10000 births. Coarctation is a heterogeneous lesion which may present across all age ranges, with varying clinical symptoms, in isolation, or in association with other cardiac defects. In this case isthmal coarctation was associated with bicuspid aortic valve and aortic root aneurysm due to an enlarged non-coronary sinus of valsava, which reflects the impairment of elastic aortic properties. Cardiac magnetic resonance imaging is an essential tool for providing excellent anatomic details regarding the location and anatomy of the coarctation, myocardial mass -in case of left ventricular hypertrophy- and collateral artery anatomy.[1–3]

Aortic coarctation encountered during adult life most frequently represents cases of re-coarctation, following previous transcatheter or surgical therapy, or more rarely missed cases of native coarctation. With the emergence and successful employment of transcatheter techniques for relief of aortic coarctation in the past two decades, there is

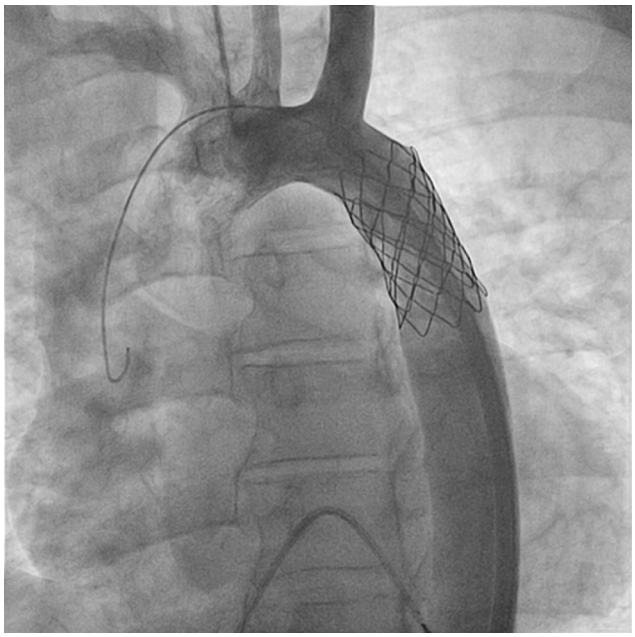

Figure 5 Final angiogram after successful stent implantation.

broad interest in defining the optimum management method —surgery or endovascular treatment—particularly in the adult population.[4,5] Surgery remains the mainstay of treatment for paediatric patients, particularly those younger than 1 year of age, and in cases of complex arch abnormalities.[6,7] Our patient had native coarctation and underwent successful percutaneous stent implantation, which is the definitive treatment in such cases.

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