

# Aortic pseudocoarctation: a very rare finding

Filipa Cordeiro, Sofia Silva Carvalho, Alberto Ferreira, Jose Ilidio Moreira

Cardiology Department, Centro Hospitalar de Tras-os-Montes e Alto Douro, Vila Real, Portugal

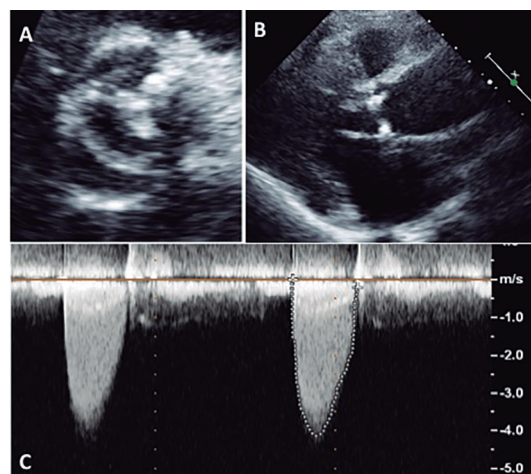
## Correspondence to

Dr Filipa Cordeiro,  
filipabritocordeiro@gmail.com

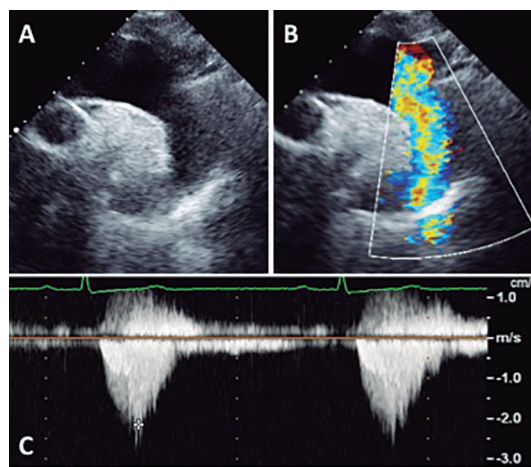
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## DESCRIPTION

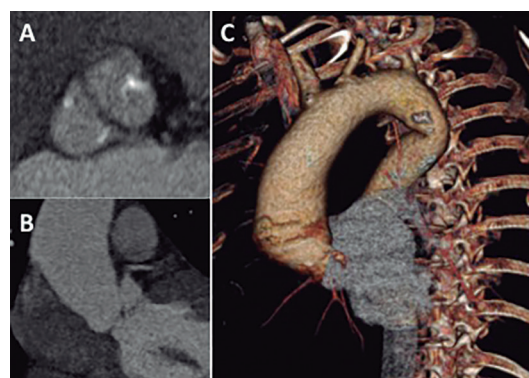
A 52-year-old Caucasian woman with a history of hypertension since age 30 was referred to cardiology department due to aortic stenosis. She had exertional dyspnoea, without thoracic pain or syncope. There was no blood pressure gradient between upper and lower extremities. Transthoracic echocardiography revealed bicuspid aortic valve, severe valvular aortic stenosis and dilation of ascending aorta (figure 1). There was also a tapering



**Figure 1** Transthoracic echocardiography. (A) Bicuspid aortic valve with fusion of the right and left cusps and superimposed calcific changes. (B) Dilatation of the ascending aorta. (C) Continuous wave Doppler of aortic stenosis jet revealing a peak velocity above 4 m/s, consistent with severe stenosis.



**Figure 2** Suprasternal view of transthoracic echocardiography. (A) Tapering of the descending aorta. (B) Colour Doppler demonstrating acceleration and turbulent flow within the descending aorta. (C) Continuous wave Doppler revealing a peak systolic gradient of 19 mm Hg, without diastolic run-off.



**Figure 3** CT angiography. (A) Bicuspid aortic valve. (B) Dilatation of the ascending aorta. (C) Elongation of the distal aortic arch and focal kinking at the aortic isthmus, without significant stenosis or enlarged collateral arteries.

of the descending aorta, with turbulent flow and a systolic peak gradient of 19 mm Hg (figure 2). To assess the thoracic aorta, the patient underwent CT angiography, which revealed elongation of the distal aortic arch, a focal kinking at the aortic isthmus, and absence of significant stenosis and enlarged collateral arteries, consistent with aortic pseudocoarctation (figure 3).

Aortic pseudocoarctation is a very rare congenital anomaly of the aortic arch and can coexist with other congenital heart diseases, such as bicuspid aortic valve.<sup>1</sup> It mimics true coarctation, but can be differentiated from it by recognising a high, elongated arch, a kinking that lacks luminal narrowing and an absence of enlarged collateral arteries.<sup>2</sup> The identification of aortic pseudocoarctation can be an incidental finding or associated with hypertension and symptoms related to compression of adjacent structures.<sup>1</sup> Its management is not well established, but surgical

## Learning points

- ▶ Aortic pseudocoarctation is a very rare congenital anomaly that mimics coarctation, but lacks significant luminal narrowing and enlarged collateral arteries.
- ▶ Although less severe than true coarctation, it should not be regarded as a benign condition. Surgical treatment has been proposed in symptomatic patients or when associated with aortic aneurysms, and regular follow-up in asymptomatic patients without associated anomalies.
- ▶ This case highlights the importance of echocardiographic suprasternal view to identify aortic coarctation or pseudocoarctation as a cause of secondary hypertension.



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treatment has been proposed in symptomatic patients or when associated with aortic aneurysms.<sup>3</sup> The case was discussed in a multidisciplinary team, and it was decided that the pseudo-coarctation did not require intervention and should be regularly monitored for changes in the aorta. Thus, the patient was submitted to aortic valve replacement with mechanical prosthetic valve and ascending aorta replacement surgery. The cardiac surgery was uneventful.

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