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Images in Congenital Cardiac Disease

Aortic coarctation, aneurysm, and ventricular dysfunction in an asymptomatic infant

Ana I. García, Juan M. Aguilar, Enrique García

Department of Pediatric Cardiac Surgery, Pediatric Heart Institute, Hospital Universitario Doce de Octubre, Madrid, España

Abstract Aortic arch coarctation with post-coarctation aneurysm is rare in infants. We present the case of an asymptomatic 3-month-old infant with severe left ventricular dysfunction in this setting. The patient underwent surgical repair, and the left ventricular ejection fraction improved to recovery the 4th post-operative month.

Keywords: Aorta; coarctation; aneurysm

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We present the case of an asymptomatic 3-month-old girl in whom a heart murmur and decreased femoral pulses were noted incidentally during a routine medical examination. The two-dimensional echocardiography revealed tricuspid aortic valve, left aortic arch, severe distal aortic arch coarctation with post-coarctation aneurysm[1] about 2 cm in diameter, and severe left ventricular dysfunction (<30%). The ductus arteriosus was patent, joined to the aneurysm with right-to-left shunt. The three-dimensional CT-scan confirmed these findings and showed the left subclavian artery emerging distal to the aneurysm with reverse flow perfusing the descending aorta (Fig 1a and b) and right subclavian artery normally arising from the innominate artery, although with anomalous initial course – double corkscrew.

Surgical repair was performed through a median sternotomy with the patient under cardiopulmonary

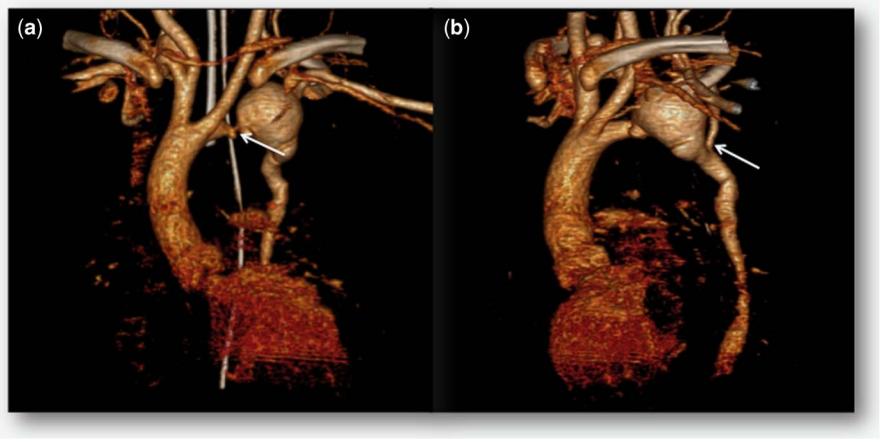

Figure 1.
*Three-dimensional CT scan images. (**a**) The white arrow shows the aortic arch coarctation. (**b**) The white arrow shows the left subclavian artery emerging distal to the aneurysm.*

Correspondence to: J. M. Aguilar, Avenida de Córdoba s/n, 28041 Madrid, Spain. Tel: +34 917 390 8508; Fax: +34 917 390 8772; E-mail: juanmiccv@gmail.com

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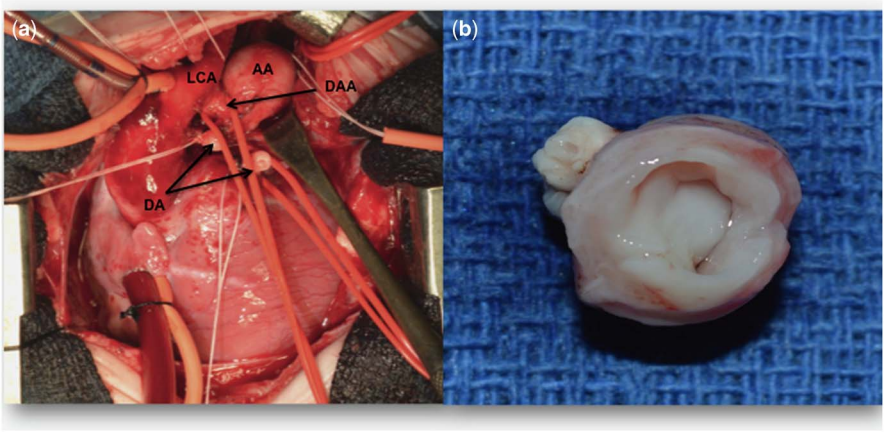

Figure 2.
*(**a**) Intraoperative view before repair. (**b**) Surgical specimen with diffuse thickening of the aortic wall. AA = aortic aneurysm; DA = ductus arteriosus divided; DAA = distal aortic arch; LCA = left carotid artery.*

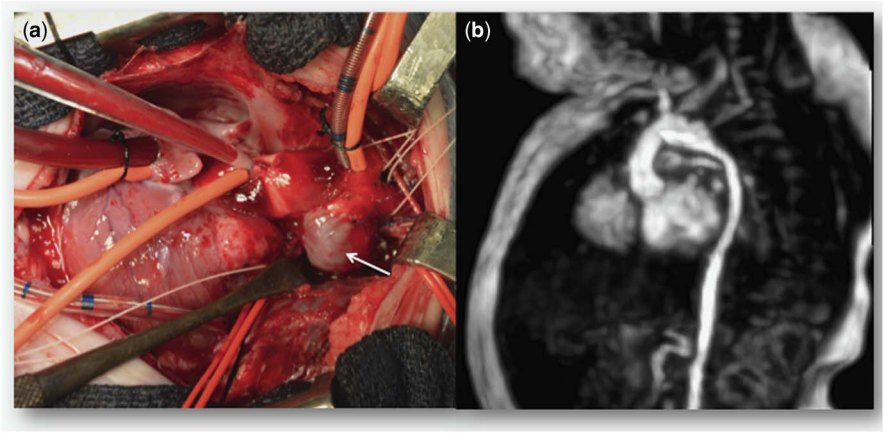

Figure 3.
*(**a**) Intraoperative view after repair. The white arrow shows the autologous pericardial patch. (**b**) Post-operative MRI showing the reconstructed aortic arch.*

bypass, moderate hypothermia, and selective cerebro-myocardial perfusion (Fig 2a). The ductus arteriosus was ligated. The aneurysm and the coarcted segment were resected (Fig 2b). Extended end-to-end anastomosis with fresh autologous pericardial patch augmentation was performed (Fig 3a). Diffuse thickening of the aortic wall was observed, but any type of vasculitis including PHACE syndrome[2] was ruled out with analytical, physical, and histopathological examinations.

Post-operative echocardiography showed a normal reconstructed aortic arch with no residual gradient. Post-operative MRI (Fig 3b) showed the reconstructed aortic arch with no defects in myocardial viability. The left ventricular ejection fraction improved to recovery the 4th post-operative month.

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Conflicts of Interest

None.

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