

Images in Congenital Heart Disease

Aortic coarctation in an infant with tetralogy and pulmonary atresia

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THIS THREE-MONTH-OLD INFANT PRESENTED with cyanosis and a soft continuous murmur over the left chest. Cross-sectional echocardiography suggested tetralogy with pulmonary atresia. The heart was left-sided, normal atrial arrangement, concordant atrioventricular connections, and a single outlet via the aorta. Cardiac angiography (Fig. 1), performed in the morphologically right ventricle (RV) via the inferior caval vein (ICV) and visualized in the

frontal (a) and lateral (b) projections, revealed the presence of a blind infundibulum (INF), a dilated overriding aorta (AO), a left aortic arch, the outlet septum (OS), and the right atrium (RA).

Injection of contrast into a tortuous narrowed (long arrow) collateral vessel (C) originating from the left subclavian artery (Fig. 2), as seen in frontal projection, demonstrated the vascular supply to the entire left lung (LPA) and some segments to the lower lobe of the

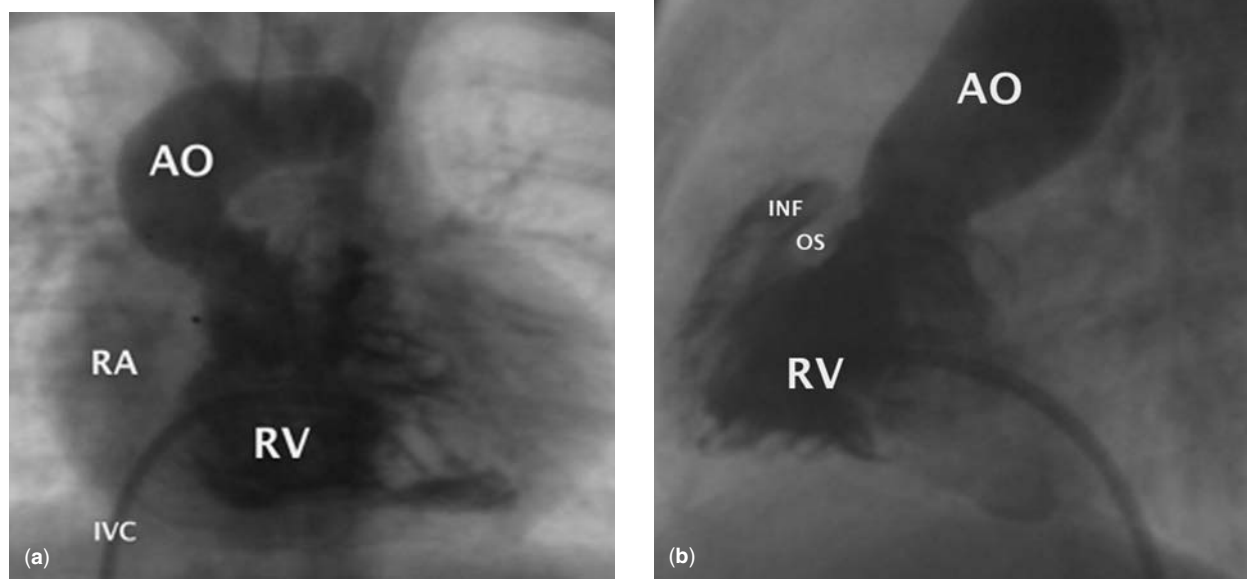


Figure 1.

[†]Sadly, Robert Freedom died prior to the publication of this Image. This is but one of his posthumous publications in “Cardiology in the Young” that attests to his aesthetic eye and encyclopaedic knowledge.

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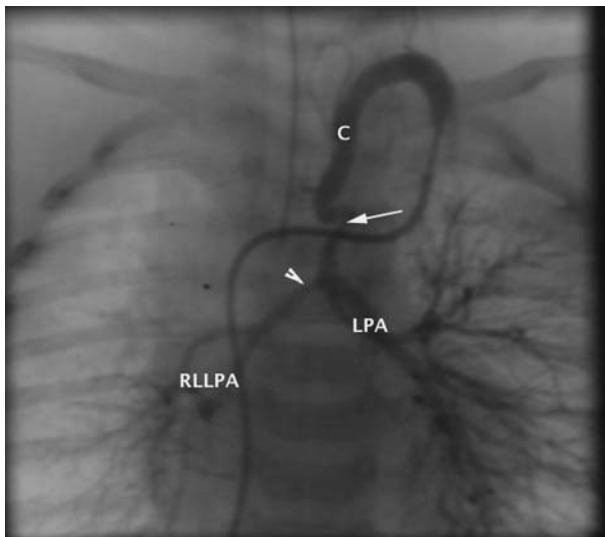


Figure 2.

right lung (RLLPA), also showing proximal narrowing of the collateral artery (arrowhead). Further injection of contrast into the transverse aortic arch (TAA), as seen in lateral projection (Fig. 3), revealed coarctation of the aorta (arrow) just distal to the origin of the left subclavian artery. At this site, there was a gradient of 22 millimetres of mercury to the descending thoracic aorta (DAO).

We interpret this rare combination of congenital heart defects as an attempt by nature to enhance the flow of blood to the lungs. Interestingly, before the era of unifocalization, banding of the aorta was once suggested¹ as a possible therapeutic manoeuvre in this difficult situation.

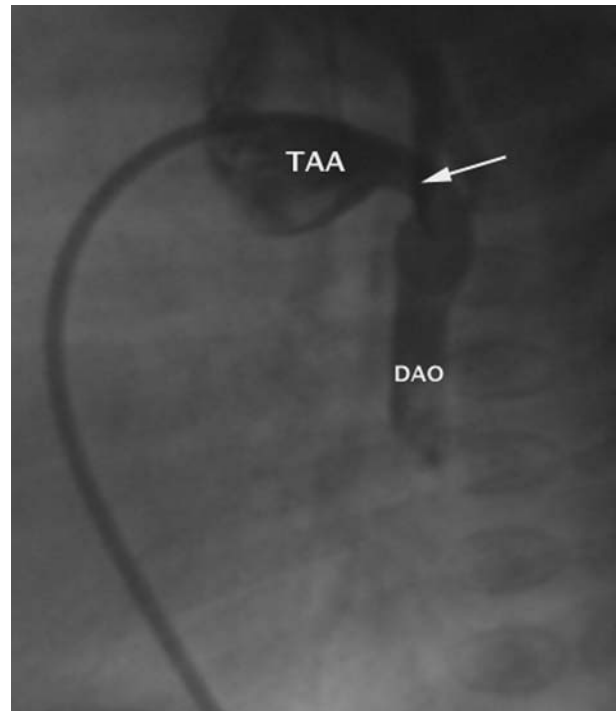


Figure 3.

Reference

1. Iida J, Lin E. Experimental and clinical studies on "aorta banding" for severe cyanotic heart disease. *Jpn Heart J* 1970; 11: 130–140.