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Image in cardiology

Anomalous origin of the right pulmonary artery

Origen anómalo de la arteria pulmonar derecha

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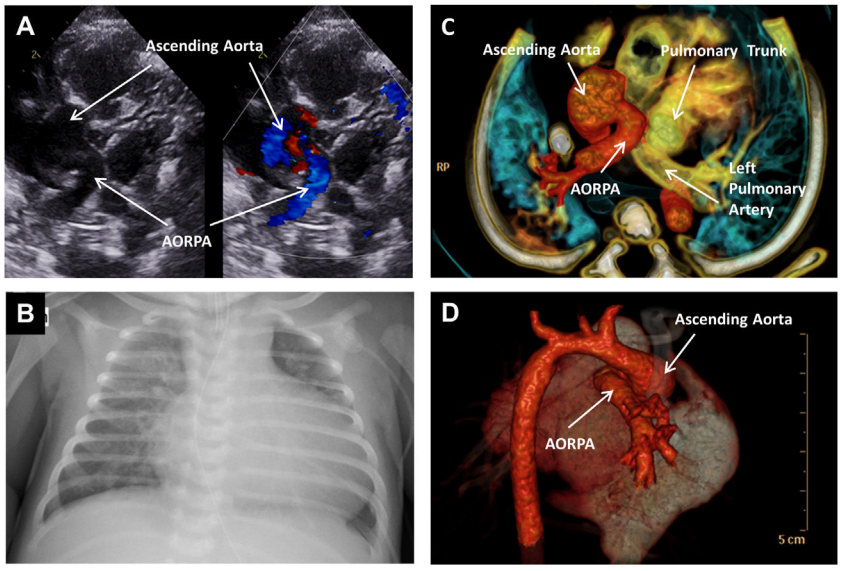

Figure 1.

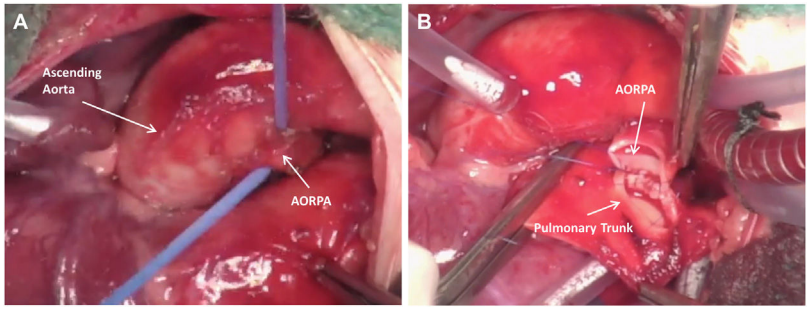

Figure 2.

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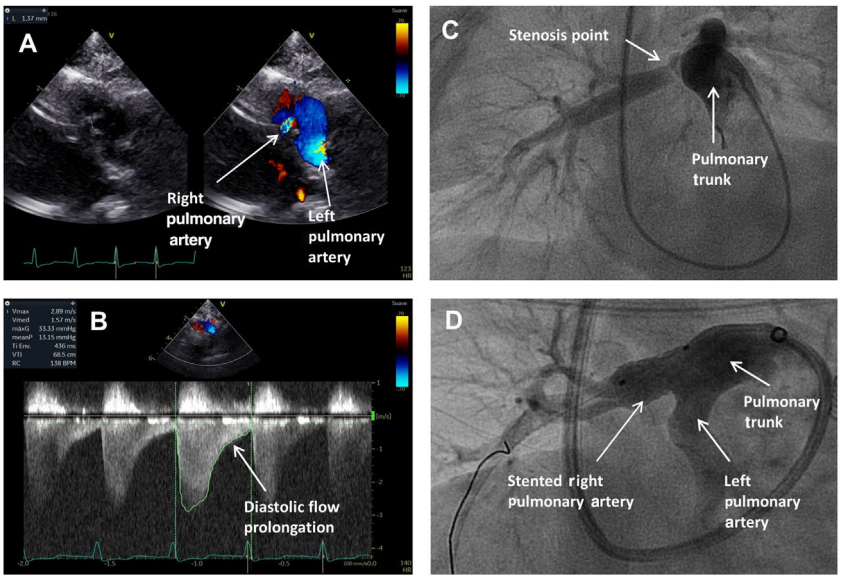

Figure 3.

A 15-day-old female newborn initially presented with polypnea, tachycardia, and hypoxemia. Echocardiography was performed and a particular congenital heart disease was diagnosed (figure 1A and video 1 of the supplementary material, parasternal short-axis). A chest X-ray showed unequal perfusion of the lungs, with the right lung being more congestive (figure 1B), probably due to the unrestricted shunt from the aorta. Computed tomography angiography was performed for surgical planning (figure 1C,D). When that patient was 1-month-old, surgical correction with reimplantation of the right pulmonary artery to the pulmonary trunk was performed (figure 2A,B, video 2 of the supplementary material). Unfortunately, echocardiography during follow-up revealed progressive stenosis between the pulmonary trunk and right branch, which could be related to suture retraction and fibrosis (figure 3A,B, video 3 of the supplementary material). Six months after surgery, the patient underwent a successful stent implantation (figure 3C,D, video 4 of the supplementary material).

Anomalous origin of the right pulmonary artery from the ascending aorta (AORPA) is a rare but serious congenital heart disease, accounting for 0.1% of all congenital heart diseases. Although little is known about the embryogenesis of this malformation, it is thought to be related to a failure of development of the right sixth arch with an incomplete leftward migration of the right pulmonary artery.

Early diagnosis followed by prompt surgical correction is crucial to achieve a good survival. Without treatment, congestive heart failure and pulmonary hypertension may rapidly progress. Close follow-up after surgical repair is necessary for early detection of complications such as stenosis of the reimplanted artery. A percutaneous approach seems a safe and effective option.

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AUTHORS' CONTRIBUTIONS

M. Figueras-Coll: conception, design, data acquisition, and provision of images. J. Fernández-Doblas: conception, design, figures, manuscript drafting, and critical review of the intellectual content of the manuscript. A. Sabaté-Rotés: conception, design, manuscript drafting, and critical review of the intellectual content of the manuscript. All authors have approved the final version of the manuscript and accept full responsibility for its contents.

CONFLICTS OF INTEREST

The authors declare they have no conflict of interest.

SUPPLEMENTARY DATA

Supplementary data associated with this article can be found, in the online version available at doi:10.1016/j.rec.2021.07.003.