

## A novel coronary pattern in newborn with d-transposition of the great arteries

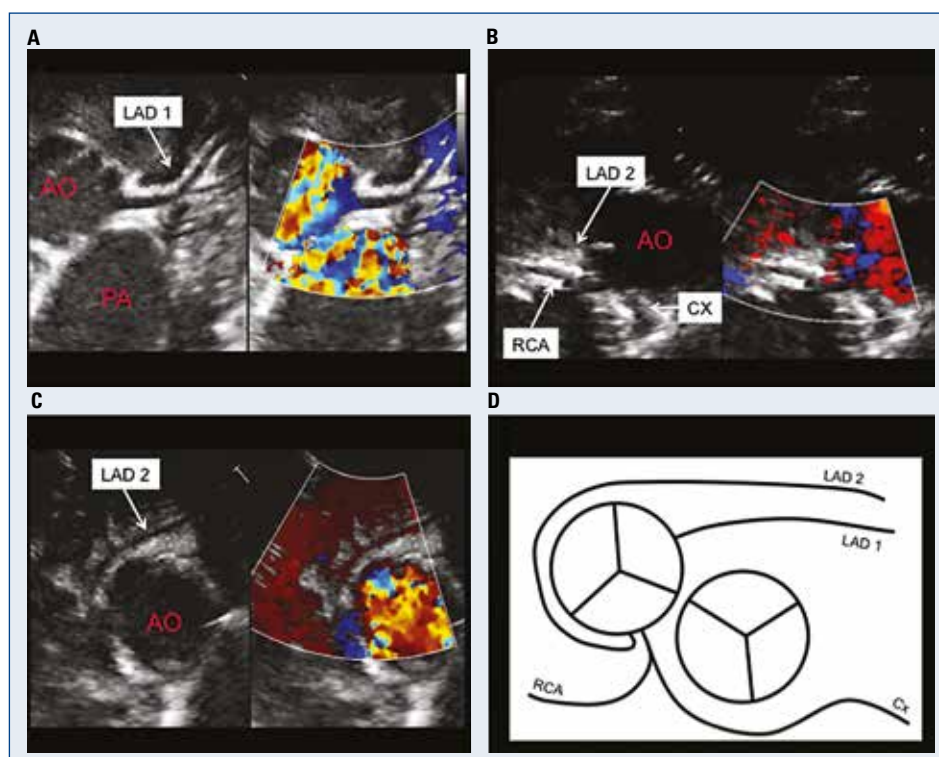
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A newborn male with antenatal diagnosis of d-transposition of the great arteries and intact ventricular septum was referred to the documented unit. Echocardiography scan confirmed the diagnosis. The aorta was anterior and to the right of the pulmonary artery (Fig. 1A). As is routine, coronary anatomy was examined using a modified parasternal short axis view, rotating clockwise for the left coronary artery (LCA), and counterclockwise for the right coronary artery (RCA). A parasternal

long axis view for displaying the RCA ostia from the posterior septal sinus was also performed. Bifurcation of the LCA and the proximal left anterior descending (LAD) was imaged using parasternal long axis view angled toward the left shoulder.

In this case, the coronary pattern was extremely peculiar. A main LAD arose from the anterior facing sinus (Fig. 1A, **Suppl. Movie Clip 1**) with a well-visualized first diagonal branch. The RCA took off from the posterior facing sinus, giv-



**Figure 1. A–D.** Echocardiographic and schematic view of the peculiar coronary pattern in newborn with d-transposition of the great arteries (see text for explanation).

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ing rise to the circumflex artery, which looped posteriorly to the pulmonary artery (Fig. 1B). An additional LAD was demonstrated arising from the posterior facing sinus with a separate ostium, looping anteriorly, surrounding the aortic annulus and then pointing to the interventricular groove (Fig. 1C, **Suppl. Movie Clip 2**). This extremely rare coronary pattern is summarized in Figure 1D, and according to available research has never been described before.

At 8 days of life, the newborn successfully underwent an arterial switch operation. Coronary arteries were reimplanted into the neo-aortic root,

and the surgical findings confirmed the peculiar coronary pattern.

Echocardiography in recent times has been able to provide excellent imaging of coronary arteries even in newborns with a high heart rate. Despite the rarity of the described finding, awareness of the existence of such exceptional anomalies is crucial, since it makes their recognition possible. This is even more essential in a clinical setting, as transposition of the great arteries, where a careful description of coronary pattern can have a massive impact on surgical repair and future clinical history.

**Conflict of interest:** None declared