Bilateral arterial ducts with isolated left subclavian artery in ventriculo-arterial discordance, ventricular septal defect, and coarctation

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We report an unusual finding in a 5-day-old baby who had had an antenatal diagnosis of ventriculo-arterial (VA) discordance, ventricular septal defect (VSD), and great artery disproportion, suggesting postnatal development of Coarctation of the Aorta. Postnatal echocardiography confirmed VA discordance and VSD, but the arch anatomy was complex and less clear. There was additional sub-aortic stenosis, which had not been fully appreciated antenatally.

Cardiac magnetic resonance imaging (MRI) under general anaesthesia confirmed the right aortic arch but with a severely hypoplastic transverse arch and a dominant right ductal arch (see Supplementary data online, Video S1). A smaller left-sided arterial duct supplied the isolated left subclavian artery. The baby remained stable on a prostaglandin infusion and underwent total correction on Day 8 of life with an arterial switch operation with VSD closure, aortic arch reconstruction but with sacrifice of the left subclavian artery.

There have been previous descriptions of VA discordance with a right aortic arch and coarctation, including one patient with an isolated left subclavian artery, but in that case it was supplied retrogradely by a vertebral artery. This appears to be the first report of this particular constellation of bilateral ducts with an isolated left subclavian artery in VA discordance with a VSD and right-sided aortic arch with coarctation.

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Panel A: Anterior view showing disconnected left subclavian supplied by left arterial duct; Panel B: Right lateral view showing severely hypoplastic aortic arch and large right-sided ductal arch; Panel C: Left lateral view showing disconnected left subclavian and coarctation.

Supplementary data are available at European Heart Journal – Cardiovascular Imaging online.

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