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Images in Congenital Cardiac Disease

"Ying and Yang" in tetralogy of Fallot

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Cross-sectional transthoracic echocardiography in a 3-day-old newborn boy weighing 3,500 grams revealed the typical features of Fallot's tetralogy with absent pulmonary valve (Fig. 1: RVOT = right ventricular outflow tract; RPA = right pulmonary artery; arrow indicates rudimentary valvar leaflets). The right and left pulmonary arteries, however, appeared discontinuous, and further imaging with colour Doppler confirmed that the left pulmonary artery was perfused by a long and constricted patent arterial duct (Fig. 2a: Ao = aorta; LPA = left pulmonary artery; arrow points to the arterial duct). Swirling of blood within the dilated right pulmonary artery was reminiscent of the 'Ying and Yang' symbol (Fig. 2b). The patient was treated

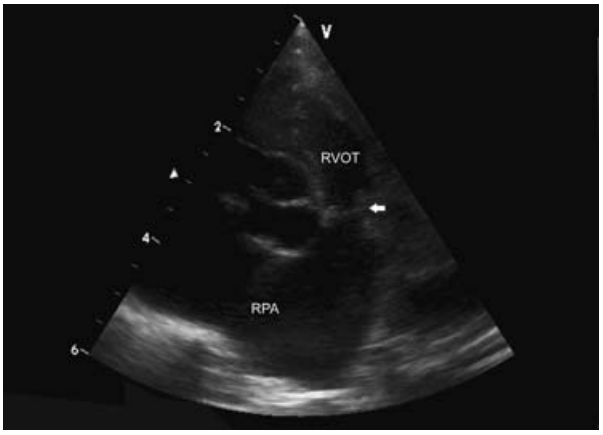

Figure 1.

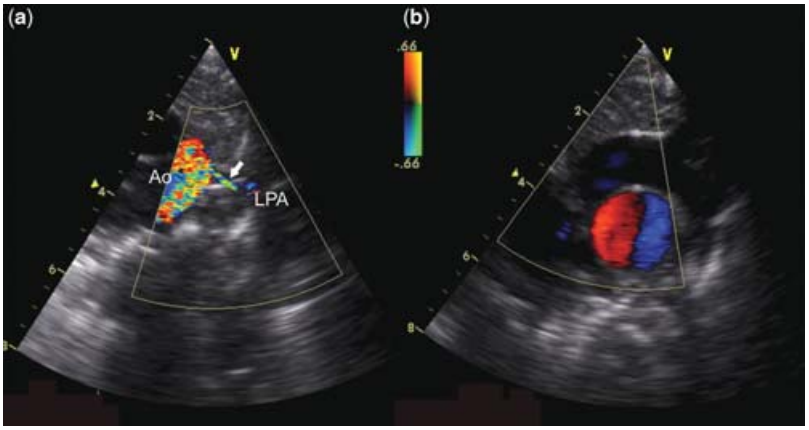

Figure 2.

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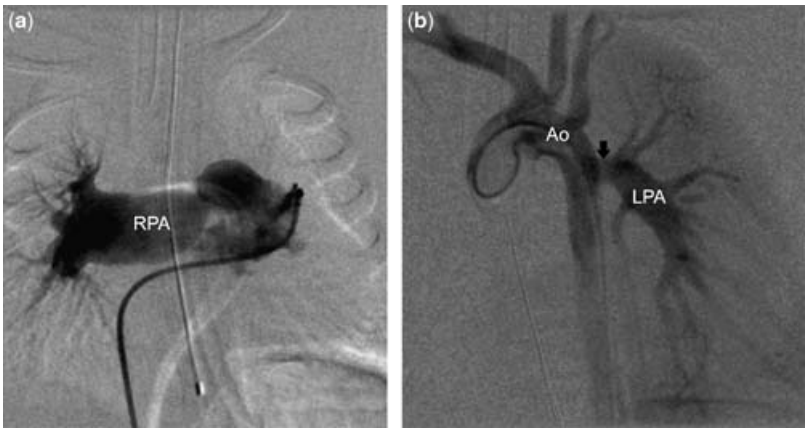

Figure 3.

with intravenous prostaglandin. Subsequent angiography confirmed the echocardiographic findings, and demonstrated improved ductal flow (Fig. 3). Successful surgical repair was performed four days later, and included anastomosis of the left pulmonary artery to the pulmonary trunk, reduction of the right pulmonary artery, and closure of the arterial duct.

In this patient, timely identification of the disconnected left pulmonary artery fed through an arterial duct prompted early repair, and prevented potential thrombosis or hypoplasia of the vessel following closure of the arterial duct. The appearance of the "Ying and Yang" symbol is unusual, and may have resulted from abnormal patterns of flow, occasioned by absence of the bifurcation of the pulmonary trunk in combination with the massively enlarged right pulmonary artery.

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