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Images in Congenital Heart Disease

Thrombotic obstruction of modified Blalock-Taussig shunt

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A BABY GIRL, BORN SMALL FOR DATES WITH A weight of 1.6 kg, was referred for dysmorphism, developmental delay, and evaluation of a heart murmur. She was found to have tetralogy of Fallot, but did not otherwise fit into any known syndrome. Chromosomal evaluation revealed a normal female karyotype. She was managed conservatively until 4 months of age, when she manifested hypercyanotic spells. At that stage, a modified right Blalock-Taussig shunt,[1] of 4 mm diameter, was placed between the right subclavian and pulmonary arteries, and the procedure was uncomplicated. There were no further spells, and a post-operative improvement in saturations was noted.

About 11 months later, she was again admitted for repeated cyanotic attacks, after being relatively event-free for some time. The continuous murmur from the shunt was barely audible, although echocardiography suggested some flow across the shunt based on turbulence noted on color flow mapping. The shunt itself was difficult to visualize, and there was no suspicion of peripheral pulmonary arterial stenosis.

From the clinical scenario of hypercyanotic spells, it was assumed that the Blalock-Taussig shunt was either partially blocked or functioning inadequately. Cardiac catheterization and angiography were undertaken with a view to total repair or, if necessary, insertion of a second shunt. The aortogram, shown in Figure 1, demonstrated a thrombus in the shunt,

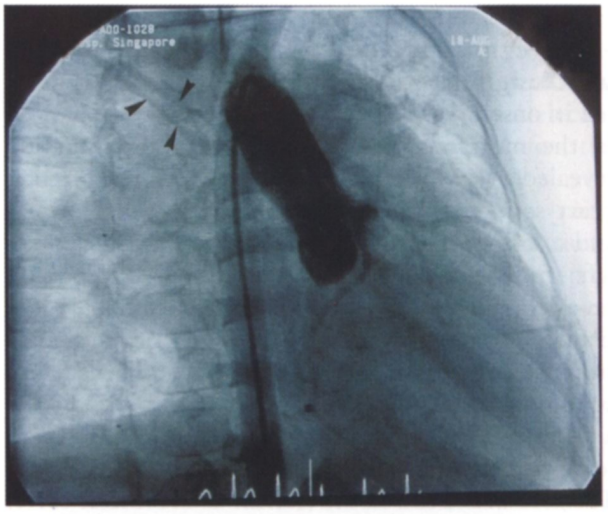


Figure 1.

visualized as a filling defect (arrows) within the shunt itself. Although the shunt was not completely blocked, the occlusion was enough to account for her symptoms. After discussion with her family, a second shunt was inserted with significant improvement.

Reference

1. Moulton AL, Brenner JI, Ringel R, et al. Classic versus modified Blalock-Taussig shunts in neonates and infants. Circulation 1985; 72: 35–44.

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