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IMAGES IN CARDIOLOGY

Pulmonary Atresia With Aortopulmonary and Coronary Artery Collaterals

Precise Depiction by Low-Dose Computed Tomography

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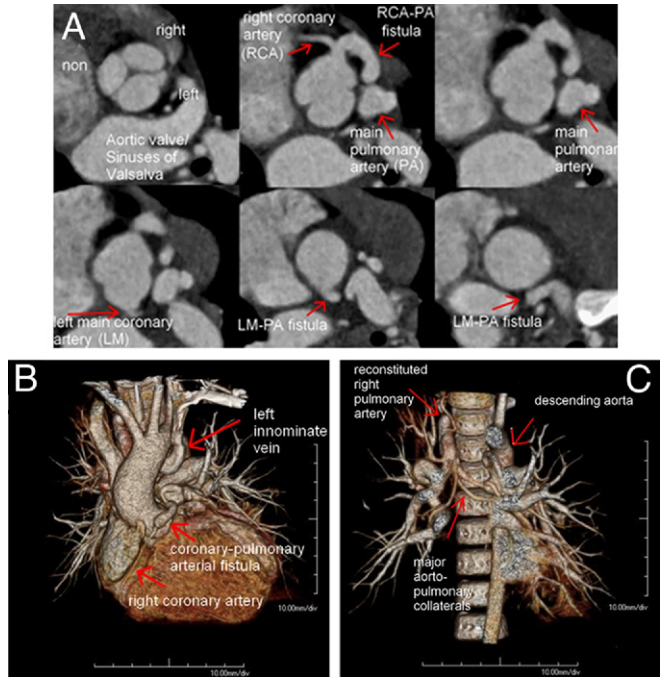

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A 6-year-old female with tetralogy of Fallot whose echocardiogram and cardiac catheterization showed pulmonary atresia, ventricular septal defect, aortopulmonary collaterals, and collaterals from the coronary arteries to the main pulmonary artery. Computed tomography (2 × 64-slice, 0.75-mm reconstruction; Online Video) with prospective electrocardiographic gating showed a large collateral from the right coronary artery ostium and another collateral arising from the left coronary artery ostium supplying a small main pulmonary artery **(A and B)**. There was severe hypoplasia and isolation of the right pulmonary artery before bifurcation into upper and lower lobe branches, which were supplied by multiple aortopulmonary collaterals **(A and C)**. This rare variant of tetralogy of Fallot has been previously reported (1), and delineation of vascular anatomy is critical for operative management. In this patient, the high spatial resolution and multiplanar reformatting possible with computed tomography angiography was instrumental in defining anatomy. This was achieved with very low-dose radiation (80 kVp, 0.7 mSv), equivalent to ~7 chest x-rays.

REFERENCE

1. Solowiejezyk DE, Cooper MM, Barst RJ, Quaegebeur JM, Gersony WM. Pulmonary atresia and ventricular septal defect with coronary artery to pulmonary artery fistula: case report and review of the literature. Pediatr Cardiol 1995;16:90–4.