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IMAGES IN CARDIOLOGY

Anomalous Origin of the Right Coronary Artery From the Pulmonary Artery With Reversal of Flow

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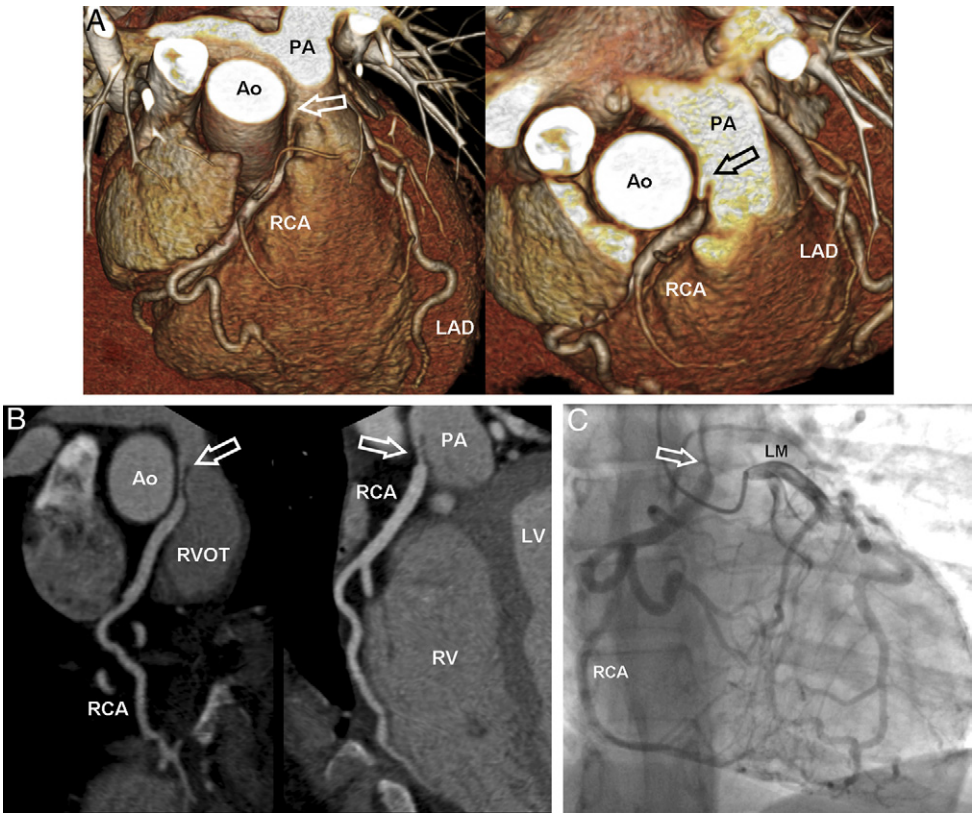

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A 41-year-old woman underwent cardiac computed tomography for atypical chest pain. Three-dimensional volume rendering (**A**, Online Video 1) and multiplanar computed tomographic reformations **(B)** demonstrated anomalous origin of the right coronary artery (RCA) from the main pulmonary artery. The ostial segment was narrowed compared with the remainder of the artery. Contrast medium enhancement within the RCA was higher than in the pulmonary artery **(B)** and was identical to the enhancement in the aorta and the left heart, suggesting collateral filling from the left. Coronary catheterization (**C**, Online Video 2) confirmed the computed tomographic findings and demonstrated collateral filling from the left coronary artery system and reversal of flow in the RCA into the pulmonary trunk. The ostial narrowing evidently reduced left-to-right shunting and thereby improved perfusion of the RCA territory.

The incidence of anomalous origin of the RCA from the main pulmonary artery is estimated to be only 0.002% and is thus much rarer than the more common left coronary artery variant. As in our case, patients with anomalous origin of the RCA from the main pulmonary artery generally remain asymptomatic until adulthood. Ao = aorta; LAD = left anterior descending; LM = left main; LV = left ventricle; PA = pulmonary artery; RV = right ventricle.