A Rare Anatomic Variant: Partial Anomalous Pulmonary Venous Connection of the Right Pulmonary Veins to an Aneurysmal Left Vertical Vein

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A 34-year-old woman presented with easy fatigability and dyspnea. The results of an examination were significant for systolic ejection murmur over the upper left sternal border (LSB) and early middiastolic murmur over the lower LSB. Echocardiography showed drainage of right pulmonary veins with an anomalous connection to a left vertical vein with an aneurysmal segment. Cardiac catheterization confirmed that the right pulmonary veins connected solely to an aneurysmal left vertical vein that connects to an innominate vein before draining into the superior vena cava (SVC). (Fig 1; InV = innominate vein; LCV = levocardinal vein; RPV = right pulmonary vein confluence). Chest computed tomography confirmed the findings (Fig 2). Surgical correction was done by anastomosis of right pulmonary vein connection to the left atrium, closure of atrial septal defect, and ligation of connection to LCV.

It is rare for anomalous, right-sided pulmonary veins to cross the midline to drain solely into a left-sided venous connection; to our knowledge, this has not been encountered previously. The embryologic splanchnic plexus is a midline structure, thus explaining the possibility for crossed drainage.

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