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IMAGES IN CARDIOLOGY

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Partial anomalous pulmonary venous connection of left pulmonary veins to innominate vein evaluated by multislice CT

A 6-month-old male infant was referred to our paediatric cardiology department owing to a cardiac murmur. Transthoracic echocardiography showed mild dilatation of the right atrium and the right ventricle with increased superior caval vein flow. Possible communication that may cause a left to right shunt at ventricular, atrial and ductal levels was excluded. In the subcostal window with posteriorly angled position of transducer, an enlarged vessel, behind to left atrium, with increased colour Doppler flow was detected. Further evaluation was performed with a 16-slice multidetector CT scanner (Aquilion 16 system; Toshiba Medical Systems Corporation, Japan). Multislice CT images showed abnormal return of the left pulmonary veins (PVs) connected to the dilated left innominate vein, with subsequent continuation to the right superior vena cava (SVC) (panel). The patient was diagnosed with unilateral anomalous pulmonary venous connection of the entire left lung to the innominate vein.

Partially anomalous pulmonary venous connections exhibit a wide anatomical spectrum. The most common type of partially anomalous pulmonary venous connection is of the left pulmonary veins to the left innominate vein. In this malformation left pulmonary veins connect to the left innominate vein with subsequent drainage to the right superior vena cava and to the right atrium. An association atrial septal defect of the secundum type is usual. Rarely, the atrial septum is intact. It is often difficult to detect the pulmonary vein confluence by echocardiography and catheter-based angiography. Multislice CT is a non-invasive diagnostic tool that give useful anatomical information about extracardiac vascular malformations. In addition, it may obviate the need for angiography and be an important diagnostic modality, supplementary to echocardiography, in the diagnosis and management of congenital heart diseases.

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