Ostium secundum atrial septal defect with partial anomalous pulmonary venous return

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A 43-year-old Caucasian man presented with complaints of shortness of breath on exertion and palpitations. On cardiac auscultation, S2 was fixed and widely split and a systolic ejection murmur was heard over the pulmonic area. The electrocardiogram showed sinus rhythm with incomplete right bundle branch block and supraventricular premature complexes. The chest X-ray showed enlarged pulmonary arteries and increased pulmonary vascularity.

On transthoracic echocardiography, an ostium secundum atrial septal defect (ASD) with a diameter of 12 mm was detected. The right heart chambers were dilated with an estimated peak systolic pulmonary artery pressure of 45 mmHg. The Qp/Qs ratio was 3.75. Both the degree of right chamber dilatation and the Qp/Qs ratio were more than expected for a moderate size ASD. Therefore, an additional left-to-right shunt was sought. In the apical four-chamber view, the right inferior pulmonary vein (RIPV) seemed to drain into the right atrium. This finding was confirmed by transesophageal echocardiography and 16-row multidetector cardiac computed tomography (Fig. A, B). The patient underwent successful ASD repair and RIPV was directed to the left atrium. Postoperative recovery was uneventful. Partial anomalous pulmonary venous return (PAPVR) should be kept in mind whenever right heart dilatation is disproportionate to the ASD size. If this had been unrecognized in our patient, we would have recommended percutaneous ASD closure rather than cardiac surgery, which would result in an ongoing right chamber dilatation due to residual left-to-right shunt related to PAPVR.

Figures. (A) Multidetector computed tomography displays enlarged right heart chambers. The arrow indicates the right inferior pulmonary vein (RIPV) draining into the right atrium (RA). (B) Volume rendered image shows the RIPV entering into the RA (arrows). The other three pulmonary veins drain into the left atrium (LA).