A 34-year-old man came to our adult congenital heart disease centre after duplicate superior vena cava (SVC) was incidentally found on chest computed tomography performed for testicular leiomyosarcoma staging. He was asymptomatic. Examination revealed a grade 1/6 ejection murmur at the left upper sternal border. Electrocardiogram and chest X-ray were normal. Transthoracic echocardiography revealed a dilated right atrium (area 19.2 cm²) and a right ventricle (base 4.8 cm and mid 4.5 cm). No atrial septal defect was detected. Suprasternal notch imaging, performed to evaluate the cause of right heart volume overload, revealed a dilated innominate vein (Panel A). Slight leftward tilting of the transducer detected an abnormal red colour Doppler signal, directed towards the transducer to the left of descending aorta (Ao) entering into the innominate vein (Panel B and see Supplementary data online, Video S1). Pulsed-wave Doppler revealed a typical biphasic pulmonary venous flow (Panel C). Anomalous left upper pulmonary venous (LUPV) drainage into the innominate vein via a vertical vein was diagnosed. Contrast-enhanced cardiac magnetic resonance angiography with three-dimensional reformatting (Panel D) showed the anomalous LUPV drainage into the innominate vein via the vertical vein. Other pulmonary veins were normally connected to the left atrium.

This case highlights the key echocardiographic features of anomalous connection of the left pulmonary vein to the vertical vein. It underscores the importance of meticulous imaging via the suprasternal notch window for accurate diagnosis of this rare congenital anomaly with a reported incidence of 0.001—0.002%, as transthoracic echocardiography is often the initial diagnostic imaging modality.

LCCA, left common carotid artery; LSA, left subclavian artery; RUPV, RMPV, RLPV, right upper, middle and lower pulmonary veins; IV, innominate vein; VV, vertical vein.

Conflict of interest: none declared.

Supplementary data are available at European Heart Journal — Cardiovascular Imaging online.