



## IMAGE IN CARDIOLOGY

# Total anomalous pulmonary venous return



## Retorno venoso pulmonar anómalo total

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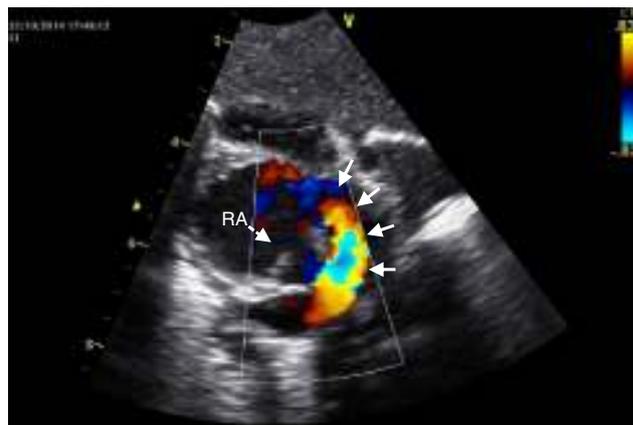
Total anomalous pulmonary venous return (TAPVR) is a rare condition, accounting for 1% of all congenital heart disease, with 50% being of the supracardiac and 20% of the cardiac type. The authors describe the cases of two infants with TAPVR and similar clinical manifestations.

### Case 1

A three-month-old infant was referred with a diagnosis of lower respiratory tract infection with moderate respiratory distress and cyanosis. Physical examination revealed bilateral pulmonary rales and a low-grade systolic murmur (II/VI) at the upper left sternal (ULS) border. The echocardiogram revealed marked dilation of the right chambers, pulmonary trunk and superior vena cava, and a large atrial septal defect (ASD) with right-to-left shunt. A retroatrial conduit was evident with connection to the innominate vein through a vertical vein. A presumptive diagnosis of supracardiac TAPVR was made.

### Case 2

A two-month-old infant with poor weight gain and a systolic murmur was referred for cardiac evaluation. On

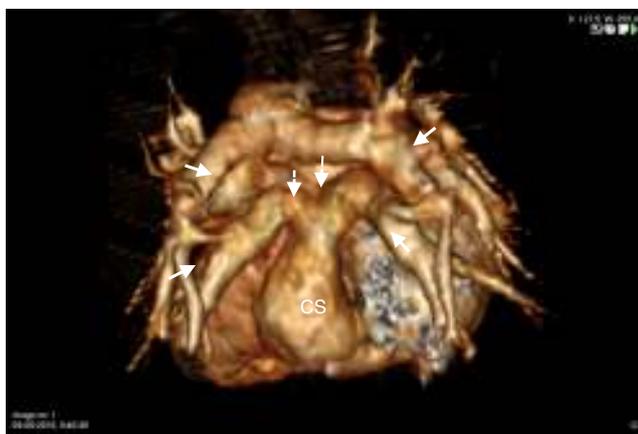


**Figure 1** Echocardiogram in modified subcostal short-axis view showing a retroatrial conduit with connection with an enlarged coronary sinus (solid arrows). An atrial septal defect is also visible (dashed arrow). RA: right atrium.

examination he was in moderate respiratory distress and cyanotic, with minimal response to supplementary oxygen. A grade II/VI ULS systolic murmur was present. The echocardiogram revealed a small left atrium, dilated right chambers and pulmonary trunk, and a small ASD with a right-to-left shunt. A retroatrial conduit emptying into the coronary sinus

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**Figure 2** Three-dimensional computed tomography reconstruction in posterior view showing four pulmonary veins (solid arrows) draining into a retroatrial conduit (dashed arrows) and then into the coronary sinus (CS).



**Figure 3** Three-dimensional computed tomography reconstruction in anterior view showing a vertical vein (solid arrows) with direct connection to the innominate vein (InV) and then to the superior vena cava (SCV).

was also evident (Figure 1). These findings were suggestive of a cardiac type TAPVR.

Both diagnoses were confirmed by cardiac computed tomography (Figures 2 and 3).

Successful surgical repair was performed, with subsequent clinical improvement and normalization of right heart chamber dimensions.

### Ethical disclosures

**Protection of human and animal subjects.** The authors declare that no experiments were performed on humans or animals for this study.

**Confidentiality of data.** The authors declare that no patient data appear in this article.

**Right to privacy and informed consent.** The authors declare that no patient data appear in this article.

### Conflicts of interest

The authors have no conflicts of interest to declare.