

Successful surgical management of total anomalous pulmonary venous return in a pediatric patient

Luka Mitar¹, Filip Pavlic¹, Daniel Dilber, MD, PhD^{1, 3}, Željko Đurić, MD^{1, 2}, Goran Međimurec, MD^{1, 2}

1 School of Medicine, University of Zagreb, Zagreb, Croatia

2 Department of Cardiac surgery, Division of Congenital Heart Defects, University Hospital Centre Zagreb, Zagreb, Croatia

3 Department of Pediatrics, Division of cardiology, University Hospital Centre Zagreb, Zagreb, Croatia

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Background:

Total Anomalous Pulmonary Venous Return (TAPVR) is an infrequent congenital heart defect, occurring in about 1 in 15,000 live births. The condition involves an abnormal connection where pulmonary veins, rather than attaching to the left atrium, drain into the right atrium or systemic venous circulation.

Case presentation:

An incidental systolic murmur was detected during a routine hip ultrasound examination in an otherwise stable 3-month-old infant. Echocardiography indicated enlargement of the right cardiac chambers and the pulmonary artery. The atrioventricular (AV) valves were normal, and the interventricular septum was intact. All pulmonary veins were observed to drain into the right atrium via a venous confluence, with the superior and inferior vena cavae appearing morphologically normal. A non-restrictive interatrial communication was present, characterized by a widely patent foramen ovale, and no coarctation of the left aortic arch was detected. These findings confirmed the diagnosis of TAPVR draining into the right atrium with non-restrictive interatrial communication. Given the echocardiographic results, it was decided to proceed with surgical correction. The procedure, involved creating a connection between the pulmonary veins and the left atrium and closing the atrial septal defect (ASD) through a median sternotomy incision. The surgery was completed without any complications. On the second postoperative day, the patient was extubated. Chest drains were removed on the fourth postoperative day. Ultrasound evaluation post-surgery was favorable, indicating normal cardiac contractility, minimal pulmonary valve insufficiency with no signs of pulmonary hypertension, and minor left-to-right flow across the surgically created fenestration. Inotropic support (adrenalin 0,04 mcg/kg/min) was gradually reduced and completely discontinued by the sixth postoperative day.

Conclusion:

The patient's course emphasizes the critical role of timely diagnosis and surgical intervention in managing TAPVR with concurrent ASD. With appropriate surgical correction and follow-up, patients with TAPVR can have positive outcomes.