

Criss-cross heart with dextrocardia and transposition of the great arteries: a rare pathology

Criss-cross kalpte dekstrocardi ve büyük arterlerin transpozisyonu: Nadir bir patoloji

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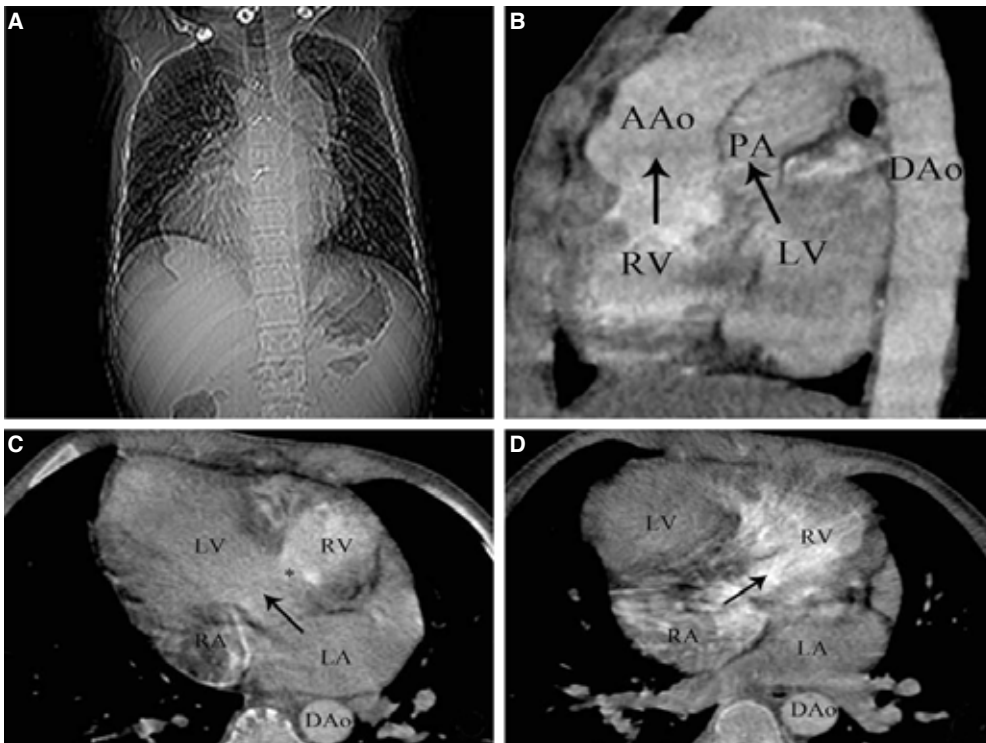
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A 16-year-old male patient who underwent bilateral modified Blalock-Taussig shunt operation at the age of 6 was admitted to our clinic with cyanosis. The oxygen saturation was 60% at time of admission. Echocardiography and computed tomography revealed

situs solitus dextrocardia with concordant atrioventricular (AV) discordant ventriculoarterial relation and obstructed bilateral Blalock-Taussig shunts (Figures 1A-D, Video 1*). The posterior left AV valve was related to the morphologic left ventricle located rightwards where pulmonary artery arose. The anterior right AV valve was related to morphologic right ventricle located

leftwards where aorta arose. Additionally severe pulmonary stenosis and a large ventricular septal defect were demonstrated. Criss-cross AV connection is a very rare cardiac pathology, accounting for less than 0.1% of all congenital heart defects. The morphological basis of the criss-cross heart is the rotation of the ventricular mass along its major axis, which may associate any malformation described in cardiac segments, resulting in various connections between the atria, ventricles, and great vessels. Patients with criss-cross heart usually have ventricular septal defects, transposition of the great arteries, double outlet right ventricle, hypoplastic right ventricle, pulmonary stenosis, and tricuspid hypoplasia. Other associated defects, although less frequent, are straddling mitral or tricuspid valve, subaortic stenosis, aortic arch obstruction, mitral stenosis, and inversion of atria. Rarely, patients may be asymptomatic if there are no associated defects. More than 90% of cases with this pathology were levocardic, and to the best of our knowledge, criss-cross AV-related transposition of the great arteries in a dextrocardic heart is rare. Thus, we want to share the demonstrative views of this rare pathology.



Figures– Cardiac computed tomography images of the patient demonstrating (A) dextrocardia, (B) ventriculoarterial discordance. The sagittal view demonstrating the right ventricle (RV)-aorta (Ao) and left ventricle (LV)-pulmonary artery (PA) relation. (C) Left atrium (LA) connected to the left ventricle (LV) (arrow). (D) Right atrium (RA) connected to the right ventricle (RV) (arrow). *Supplementary video file associated with this presentation can be found in the online version of the journal.