

Cardiac Malformations Associated with Dextrocardia

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Introduction: Dextrocardia is a cardiac malposition in which the major axis of the heart points to the right in the right hemithorax. It is associated with various congenital cardiac anomalies. There are some studies determining the frequency and type of congenital cardiac malformations associated with dextrocardia. The aim of our study is to determining the congenital cardiac malformations in patients with dextrocardia by using echocardiography. **Method:** All patients diagnosed to have dextrocardia in the pediatric cardiology departments of Yuzuncu Yil University Faculty of Medicine between March 2011 and December 2014 and Ipekyolu Women's and Children Hospital between December 2014 and December 2015 were retrospectively examined. 45 patients consist of 27 male (60%) and 18 female (40%) were enrolled to study. **Results:** The average age was $4,98 \pm 4,91$ years (10 day-17 years, median: 4.0 years).11 patients (24%) had situs solitus dextrocardia (SSD) whereas 34 patients (76%) had situs inversus dextrocardia (SID). The frequency of congenital cardiac malformation was 72% (8/11) in SSD and 50% (17/34) in SID. 3 patients (%6.6) had atrial situs inversus (2 right atrial isomerism, 1 left atrial isomerism). Among all patients atrial septal defect and ventricular septal defect was the most seen congenital defect (40% and 37%, respectively), followed by double outlet right ventricle (20%), patent ductus arteriosus (17,7%), pulmonary stenosis (15,5%), d-transposition of the great arteries (13,3%), complete atrioventricular septal defect (11,1%), tricuspid atresia (%11,1). Detected cardiac malformations are listed in table 1). One patient was diagnosed as acute lymphoblastic leukemia, one patient with down syndrome had dilated cardiomyopathia and one patient was received combined bosentan and iloprost therapy with diagnosis of Eisenmenger Synodrm. **Conclusions:** Present study, reconfirms that patients with dextrocardia have various congenital cardiac malformations including severe structural abnormalities that require interventional and surgical procedures. Color Doppler echocardiography can identify these subsets. As the frequency of concomitant cardiac structural abnormalities is high, all patients with dextrocardia have to be evaluated with echocardiography early and routinely for being able to early and appropriate surgical or interventional procedures to correct these complex abnormalities.

Table 1: Dextrocardia and associated cardiac defects

Cardiac Defect	SSD (n:11)	SID (n:34)	Total (n:45)	Cardiac Defect	SSD (n:11)	SID (n:34)	Total (n:45)
ASD	8 (72%)	10 (29%)	18 (40%)	PA	2 (18%)	2 (5,8%)	4 (8,8%)
VSD	8 (72%)	9 (26%)	17 (37%)	I-TGA	1 (9%)	1 (2,9%)	2 (4,4%)
DORV	2 (18%)	7 (20%)	9 (20%)	RAI	0	2 (5,8%)	2 (4,4%)
PDA	2 (18%)	6 (17,6%)	8 (17,7%)	LAI	0	1 (2,9%)	1 (2,2%)
PS	2 (18%)	5 (14,7%)	7 (15,5%)	V-INV	0	1 (2,9%)	1 (2,2%)
d-TGA	1 (9%)	5 (14,7%)	6 (13,3%)	DILV	1 (9%)	0	1(2,2%)
AVSD	0	5 (14,7%)	5 (11,1%)	C-TGA	1 (9%)	0	1(2,2%)
TA	2 (18%)	3 (%8,8)	5 (11%)	TAPVR	0	1 (2,9%)	1 (2,2%)

DORV: Double outlet right ventricle, PA: Pulmonary atresia, VSD: Ventricular septal defect, TA: Tricuspid atresia, TGA: Transposition of the great arteries, ASD: Atrial septal defect, PS: Pulmonary stenosis, PDA: Patent ductus arteriosus, RAI: Right atrial isomerism, AVSD: Atrioventricular septal defect, LAI: Left atrial isomerism, V-INV: Ventricular inversion, TAPVR: Total anomalous pulmonary venous return.