Prenatal Diagnosis of Dextro Transposition of the Great Arteries (D-TGA) Associated with Intracardiac Total Anomalous Pulmonary Venous Return (TAPVR). Cyanotic + Cyanotic = Acyanotic?

Introduction

D-TGA and TAPVR are both separately cyanotic heart diseases. When these two pathologies occur in one case, one of them restores the hemodynamic disturbance of another one, and two cyanotic entities together display a non-cyanotic condition. Systemic venous return, especially blood returning through IVC, flows through interatrial opening into the left atrium, then into the left ventricle, and finally to the pulmonary artery. Blood from the pulmonary venous return draining into the right atrium through the coronary sinus streams to the right ventricle and then to the aorta. As a result, two cyanotic diseases reduce hemodynamic disturbances to a minimum by regulating each other.

Case

The examined at 22 gestational weeks fetus was found out to have TGA and TAPVR. The great vessels were transported as a d-transposition and pulmonary veins drained into the right atrium through the large coronary sinus. The pregnancy proceeded normally. A baby girl with weights of 2500 g was born at 38th weeks at pregnancy by C-section. After delivery SpO2 was 88 percent. An echocardiographic examination revealed that the aorta originated from the right ventricle, and the PA from the left ventricle. The aortic valve was located more anteriorly and on the right in relation to the pulmonary artery. Also the parallel course of the great arteries was noted. There were 12.0 mm ASD with a right-to-left atrial shunting and 5.0 mm with a left-to-right shunting in perimembranous VSD. The pulmonary veins drained to the coronary sinus through a common venous sinus and the small PDA was present. At two month of age the arterial switch procedure was performed and pulmonary veins drainage into the left atrium was provided.

Conclusion

According to our literature research the combination of such anomalies together were not reported in the fetal period. All reported cases diagnosed after birth at 6-day, 22-day, 5 months, 8 months, a year, 4 years, 9 years and 11 years old babies. In clinical cases with a combination of D-TGA and TAPVR, critical congenital heart disease have been identified in patients due to manifestations of associated heart defects (VSD, PDA, murmur) that occur in late period or early life. Thus, the diagnosis of such a complex pathology in the fetal period can reveal the disease in patients, who do not have clinical signs in the postnatal period.