

Outcomes of newborns with prenatal ventricular asymmetry and not operated after birth.

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Objective : The objective of this study was to assess the outcomes of the neonates prenatally diagnosed with ventricular asymmetry and to determine the risk factors for left outflow obstruction occurrence at follow-up.

Material and methods: All neonates with prenatal asymmetry of the ventricles and dominance of right heart structures, diagnosed from August 1993 to July 2015, un-operated within the neonatal period, were retrospectively included in the study. Left heart echocardiographic measurements at birth and at last follow-up were collected and compared. Left heart anomaly included isthmus and/or aortic valve and/or mitral valve obstruction.

Results: Among 34 newborns included in the study, 12 (35%) had associated cardiac lesions (5 ventricular septal defects, 6 hypoplasia of the aortic arch and 1 mitral stenosis). Median follow-up was 2 years (from 7 days to 27 years). There was no death. Eleven patients were operated on (32.5%) at a median time of three months, 7 of them had an obstruction of the left outflow tract. Freedom of left heart surgery was 80% and 75% at respectively 6 months and 10 years. Risk factors for surgery of left heart were a small aortic annulus (z-score -5.44 vs -2.24, p= 0.002), mitral valve malformation (50% vs 14%, p=0.04) and anomaly of the left heart (42% vs 9%, p=0.024). The main risk factor for evolution to left heart anomaly was an hypoplasia of the aortic isthmus (z-score -6.9 vs -1.5, p=0.0003), while the presence of a left superior vena cava tended to be at risk for further left obstruction (50% vs 15%).

Conclusion: Despite no early postnatal coarctation of the aorta, antenatal diagnosis of ventricular asymmetry requires further monitoring for detection of left heart obstruction. Significant isthmus hypoplasia and the presence of left superior vena cava may represent risk factors for mid-term the need of mid-term left heart surgery.