Prenatal diagnosis of congenital heart diseases

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Introduction

Congenital heart disease, with a prevalence of 8/1000 live births, are one of the most frequent causes of perinatal mortality. They are responsible for half of malformations perinatal mortality. their prenatal screening is more and more accessible thanks to the development of imaging techniques, especially ultrasound.

Objective:

The objective of this study is to identify what elements of ultrasound prenatal diagnosis that will help to reduce their impact and improve their management in postnatal care.

Patients and Methods:

This is a retrospective study of 32 cases of congenital heart disease collected in "C" Department of Obstetrics and Gynecology in CMNT between 2010 and 2013. All patients underwent early ultrasonography screening that showed heart malformations.

Results:

❖The average age of patients was 32 years.
❖Prenatal diagnosis was carried out in all patients in "C" Department of Obstetrics and Gynecology in CMNT or in the Department of Pediatric Cardiology.

MALFORMATIONS	n	MALFORMATIONS	n
Tetralogy of Fallot	1	Transposition of the great arteries	5
Atrio ventricular communication	6	Dextrocardia	1
Single ventricle	6	Septal hypertrophy	7
Interventricular communication	8	Fetal rhythm disorder	2

❖The average age at diagnosis was 19 SA.
❖11 patients underwent TOP, 3 intrauterine deaths, 18 patients delivered at term.
❖Newborns were then transferred to the pediatric cardiology service for further management

9 neonatal deaths

1 pacemaker for complete atrioventricular block

3 newborns were operated
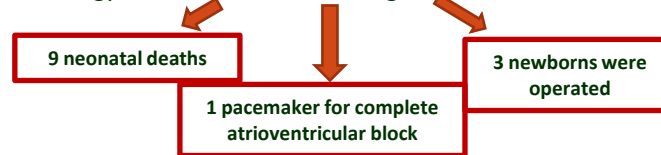
➢A postnatal ultrasound confirmed the diagnosis in 18 newborns (100%).
➢Fetal autopsy was performed in 18 cases (7 neonatal deaths and 11 cases of medical interruption of pregnancy) confirmed the diagnosis in all cases (100%).
➢In 14 cases there were multiple malformations.
➢73% of these malformations were detected in prenatal ultrasound, confirmed by fetal autopsy.

interventricular communication

interventricular communication

Transposition of the great arteries

Discussion:

➢Spontaneous intrauterine mortality in fetuses diagnosed with heart disease is approximately 10% (mostly related to chromosomal abnormalities or other malformations).

➢For fetuses with potentially lethal heart defects such as single ventricle or hypoplastic left heart syndrome: a medical termination can be suggested.

➢The most important group is represented by the cases requiring immediate postnatal care and surgical correction such as transposition of the great arteries, pulmonary atresia, hypoplastic left heart syndrome or hypoplasia of the aortic arch.

➡ In these cases the delivery must take place in a tertiary center with neonatal intensive care, pediatric cardiology and appropriate infrastructure for postnatal surgerye.
➢In all these cases, the prenatal ultrasound diagnosis plays the most important role for the decision making process.

Conclusion:

Early diagnosis of congenital heart disease is fundamental. Identification of abnormalities should begin with the first trimester ultrasound, with detailed anomaly scan in the second trimester.
Fetal heart ultrasound should be performed if the risk factors that increase the likelihood of heart defect are highlighted. Three-dimensional Ultrasound, ideally coupled to Doppler, can diagnose almost all heart defects.