DIAGNOSIS AND MANAGEMENT, MAJOR IMPACT PARAMETERS ON THE PROGNOSIS OF ATRIOVENTRICULAR SEPTAL DEFECT

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Abstract.

Introduction. Atrioventricular septal defect (AVSD) is a congenital heart defect, ranging from simple to complex, each form with different management and evolution. Our aim is to assess the diagnosis and management of children with AVSD as parameters with major impact on the prognosis. Materials and Methods. We realized a retrospective study including 31 patients of Clinic II Pediatrics Timisoara having AVSD, during follow-up echocardiographic examinations, between 2010-2015. Results. Both sexes were equally affected and 38.7% of all patients had Down syndrome, number comparable to literature. Most cases were diagnosed under age 1, correlated with pregnancy follow-up, adequate equipment and well trained personnel. The majority of patients underwent total primary correction, some needed palliative surgery with subsequent correction and a small number benefited only of pulmonary artery banding. Some are yet to undergo surgery. Survival is 100% in the partial or transitional form, but it decreases in the complete form in direct proportion with the complexity of lesions, because severe impaired forms lead to surgical backlogs, some requiring reintervention.

Conclusions.
1. The ideal diagnosis is the prenatal diagnosis.
2. Delay in diagnosis leads to delaying surgical treatment, thus altering the outcome due to complications.
3. The evolution depends on the type of defect: complex forms, are technically more difficult to correct and therefore with less favorable prognosis.

Keys words: atrio-ventricular septal defect, congenital heart defect, prognosis.

Introduction

Atrioventricular septal defect (AVSD) is a congenital heart defect (CHD), due to an imperfect development of endocardial cushions during weeks 4-5 of pregnancy, which play an important role in the formation of the inferior part of atrial septum, superior part of ventricular septum, mitral valve and tricuspid valve. This represents 3-7% of all CHD and may range from simple to complex, each form with different management and evolution.
the family history: 15% of mothers with AVSD give birth to children with the same defect, 45% of children with Down syndrome have CHD, of which 30-40% are AVSD.

**Purpose.**

Our aim is to assess the diagnosis and management of children with AVSD as parameters with major impact on the short-term, but also long-term prognosis.

**Materials and Methods**

We conducted a retrospective study including 31 pediatric patients with follow-up examination in Clinic II Pediatrics Timisoara between 2010 and 2015. Were counted in patients having AVSD, alone or in association with other lesions, operated or unoperated. Anamnestic data was collected regarding evolution from birth until diagnosis and from diagnosis until registration in clinic and noted afterwards evolution until present.

During neonatal period clinical findings (repeated respiratory tract infections, failure to thrive, heart failure, sistolic murmur) consistent with AVSD confirmed the diagnosis through echocardiography.

In one case the diagnosis was confirmed in utero through fetal echography.

Simple AVSDs may go underdiagnosed due to few to no noticeable symptoms and are detected sometimes after years; these cases are discovered when complications such as arrhythmias, heart failure, pulmonary hypertension, infective endocarditis occur.

**Results.**

AVSD had Tetralogy of Fallot associated in 3 cases and heterotaxy + great arteries transposition in another. Both sexes were equally affected and 38,7% of all patients had Down syndrome, number comparable to literature. Most cases were diagnosed under age 1 (84%), 13% after age 1 and only 3% in utero, fact correlated with pregnancy follow-up, adequate equipment and well trained personnel.

Medical treatment consists of heart failure medication when needed and endocarditis prophylaxis. Elective treatment is surgery and is recommended between age 2 and 4 in asymptomatic children, but may be carried out in toddlers with marked symptoms – this time with higher surgical risk.

The majority of patients underwent total primary correction (69,5%), some needed palliative surgery with subsequent correction (23%) and a small number benefited yet only of pulmonary artery banding (7,5%). Some are yet to undergo surgery.
From all operated patients (84%), 65% have surgical backlogs and only 35% have no surgical backlogs. Complex types of AVSD remain with significant lesions after surgery because of severe impaired morphology, which is a challenge for the surgeon due to surgical technical difficulties to restore heart anatomy, 27% requiring reintervention. Only one patients developed pulmonary hypertension postoperative.

Survival is 100% in the partial or transitional type, but it decreases in the complete type (71%) in direct proportion with the complexity of lesions.

We recorded one deceased preoperative (during neonatal period), 2 patients died during surgery and 2 postoperative, one of which had noncardiac cause.

![Evolution and Survival Graph]

**Conclusions**

1. The ideal diagnosis is the prenatal diagnosis, but it represents only a small number of diagnoses in our country, hampered by a numerous pregnancies with no follow-up and many mothers with low socio-economic status and reduced addressability/medical education.

2. Delay in diagnosis leads to delayed surgical treatment, thus altering the outcome due to complications.

3. The evolution depends on the type of defect: simple AVSD benefits of relatively simple treatment with good prognosis; complex types, however, are technically more difficult to correct and imply less favorable prognosis.

**References:**


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