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Atrial Septal Defect and its Management Approach: A Case Study

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ABSTRACT

Atrial septal defect is one of the congenital cardiac anomaly mostly affecting babies having gestation week less than 37weeks. It affects term babies as well but its prevalent rate is higher in premature babies and maternal history related to various causes.ASD incidence is increasing day by day but with the help of proper diagnostic method and preventive approach its incidence can be reduced and a definitive approach can be offered to such babies to help the baby adjust to its normal well being and reduce its complications.

INTRODUCTION

Atrial Septal Defect is one of the commonest congenital heart defects, accounting 25% of live birth. It most commonly affects preterm baby in comparison to infants and children. An ASD is a condition in which there is an abnormal opening in the septal wall which separates the atria of the heart[1]. The exact cause is unknown, but it can be linked to genetic changes occurring before birth, and the risk factors like parental history of consumption of tobacco, alcohol and using certain medications can contribute to its occurrence [2].

ASD can be classified into three types- ostium secundum(most common defect), ostium primum (second common defect)and sinus venosus(least common type)[3].

Ostium secundum and sinus venosus ASD are usually asymptomatic, but the manifestation associated with ostium primum depends upon the size of the defect.[4] The most common sign is heart murmur.The clinical manifestations includes arrhythmia, dyspnea on exertion, fatigatibility, bulging of the chest, poor weight gain,cardiac enlargement .Complication arises are endocarditis(mitral valve insufficiency),recurrent chest infections,CHF.

Diagnostic evaluation includes ECG showing right ventricular hypertrophy, Chest X-Ray showing right atrial and ventricular dilation ,Two-dimensional echocardiogram with Doppler study and color mapping ,Cardiac catheterization helps in the detection of problems. The definitive surgical treatment aims closure of the defect by transcatheter approach and open heart surgery (pericardial patch)while medical treatment i.e. antibiotic prophylaxis ,diuretics and cardiac digitalis[5].

CASE PRESENTATION

A preterm baby was born at 35 weeks of gestation to primigravida mother in MMU Hospital, Kumarhatti, Solan and shows clinical manifestations- irregular arrhythmia, chest infection, endocarditis and skin infection. Physical examination revealed poor sucking reflex. Diagnostic test revealed arrhythmia and mitral valve defect.

PAST MEDICAL HISTORY

There was not any significant past medical history.

PAST SURGICAL HISTORY

There was not any significant past surgical history.

GENERAL EXAMINATION:

Weight-2.2kg

Length-48cm

Head circumference-33cm

Chest circumference-31cm

Physical activity- Poor sucking reflex, less active body movements.

Investigations-HB level, Bilirubin level, ECG(revealed arrhythmia), Echo (revealed hole in mitral valve), chest X-ray.

TREATMENT

Oxygen therapy was given to baby to maintain the saturation level .

Antibiotics prophylaxis i.e. Inj.Ceftraxione was administered .

IV fluids and NG feed was administered to the baby.

INTERVENTION

Assess the general health status of the baby.

Monitored vital signs of the baby.

Personal hygiene was maintained by health care professionals.

ECG findings was monitored periodically as prescribed by physician.

NG feeding was given at an interval prescribed by physician.

Proper positioning and comfort devices was given to the baby.

OUTCOME

Symptoms was relieved by giving prescribed medication to the baby.

Proper guidance and counsel to the parents of the baby regarding the appropriate further treatment.

Advised for follow-up.

DISCUSSION

Atrial Septal Defect is the cardiac abnormality characterized by the presence of hole in the septal wall of the heart. It is usually an asymptomatic disease. However, children with ASDs are at increased risk for several complications such as pulmonary hypertension, endocarditis, respiratory tract infections. Investigation is to done are ECG, Doppler studies, chest X-ray and cardiac catheterization. Medical interventions includes digitalis, diuretics, prophylactic antibiotic therapy. Surgical intervention is transcatheter approach, open heart surgery.

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