



Patent Ductus Arteriosus: A Case Study

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ABSTRACT

Patent Ductus Arteriosus (PDA) is a persistent opening between the two major blood vessels leading from the heart. The opening (Ductus Arteriosus) is a normal part of a baby's circulatory system in the womb that usually closes shortly after birth. If it remains open it's called a patent Ductus Arteriosus. A small PDA often doesn't cause problems and might never need treatment. However, a large PDA left untreated can allow poorly oxygenated blood to flow in wrong direction, weakening heart muscle and causing heart failure and other complications. Treatment options for a PDA include monitoring, medications and closure by cardiac catheterization or surgery. ^[1]

Keywords: Patent Ductus Arteriosus, Symptoms and Management, Oxygenated Blood.

1. INTRODUCTION

The Ductus Arteriosus is a normal fetal artery connecting the aorta and the main lung artery (pulmonary artery). The Ductus allow blood to detour away from the lungs before birth. Every baby is born with a Ductus Arteriosus. After birth, the opening is no longer needed and is usually narrows and close within first few days. Sometimes Ductus doesn't close after birth. Failure of Ductus to close is common in premature infant but rare in full term babies. ^[2] The reported incidence of PDA in term neonates is only 1 in 2,000 births, accounting for 5%-10% of all congenital heart disease. ^[3] Symptoms are uncommon at birth and shortly thereafter, but later in first year of life there is often the onset of an increased work of breathing and failure to gain weight at normal rate, tachycardia, heart murmur. PDA can lead to complications like heart failure, Eisenmenger's syndrome, pulmonary hypertension. Cause is idiopathic. Risk factors include preterm birth, congenital rubella syndrome, chromosomal abnormalities, and genetic conditions. PDA can be diagnosed through echocardiography, Doppler, X-ray. ^[4]

2. CASE PRESENTATION

A 4-year-old female child was admitted in IGMC, Shimla cardiology department, diagnosed with patent Ductus Arteriosus. She was asymptomatic. 14 days back she was admitted in Joginder nagar hospital for pyrexia, from there she got referred to Tanda hospital, where after doing the advised investigations the parents were informed that their child has hole in the heart then for further treatment she was brought to IGMC Shimla.

Past Medical History

Baby was low birth weight baby 1.6 kg and had neonatal jaundice and was admitted in ICU for 6 months.

Past Medication History

One month back patient was suffering from fever for which antipyretics were given.

General Examination

Weight: 12 kg

Height: 93cm

BMI: 13.9 kg/m²

Physical activity: child use to play, do activities of daily living without feeling exhausted

3. SPECIAL INVESTIGATIONS

Echo (PDA of 3mm), ECG.

4. TREATMENT

Inj. Ceftriaxone 600mg I/V OD, Inj. Pcm 100mg I/V BD

5. INTERVENTIONS

CATH study was done.

Parents were advised to avoid mobilization of the child.

6. CARE PLAN

Supportive care is provided with rest

Adequate calorie for weight gain

Promotion of normal growth and development with routine care.

7. OUTCOME

After the CATH study it was concluded that the PDA was very small hence the PDA closure procedure was abandoned.

8. DISCUSSION

PDA is a heart defect found in the days or week after birth. Ductus Arteriosus is a blood vessel that connects two arteries: pulmonary artery and aorta. It occurs twice often in girls as in boys. It occurs more commonly in babies born prematurely. Babies show symptoms like cyanosis, fast or hard breathing, trouble feeding, infections, and Poor weight gain. Diagnostic evaluations include chest x-ray, ECG, echocardiogram, cardiac catheterization. Nutrition choices comprise of high calorie supplements, supplemental tube feeding Treatment of PDA depend upon child's symptom age and general health. Medicines include indomethacin and diuretics. Cardiac catheterisation is also done in if child is older than 6 months, weighs at least 22 pounds and has defect that are not too large. Surgery can close PDA. If not treated PDA may lead to long term lung damage also damage blood vessel in lungs. ^[5]

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