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# A CASE REPORT : ANAESTHETIC MANAGEMENT OF A CHILD WITH ACYANOTIC CONGENITAL HEART DISEASE SCHEDULED FOR NON CARDIAC ELECTIVE SURGERY

Anaesthesiology

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## ABSTRACT

Perioperative anaesthetic management of pediatric patients with congenital heart disease coming for non-cardiac surgery is challenging. ASD is an acyanotic CHD with the left to right shunt. The challenge for anesthesiologists in handling patients with CHD coming for non-cardiac surgery relies on the patient's age, the complexity of heart lesion, the patient's capacity to compensate, and the urgency of surgery. Atrial septal defect is the one of the most common acyanotic congenital cardiac anomaly with prevalence around 10%. Major challenges in the management of ASD include hypoxemia, hypercarbia, hypothermia leading to reversal of shunt (Eisenmenger syndrome), fatal arrhythmias and congestive heart failure. We report a case of 3.5 years old boy with uncorrected ASD and dilated RV posted for left orchidopexy and its successful management. Parents came with the chief complaint of absent bilateral testis and history of recurrent lower respiratory tract infection. Echocardiography showed FO-ASD (7mm) with left to right shunt, trivial TR, RVSP 25mmHg, grossly dilated RV. He underwent left orchidopexy under general anesthesia with caudal block.

## KEYWORDS

CHD, acyanotic heart disease, anesthetic management, orchidopexy.

### INTRODUCTION:

Atrial septal defect (ASD) is the most common acyanotic cardiac anomaly accounting for 10% of grown-up congenital heart disease (GUCHD) with high prevalence in females. Patients often remain asymptomatic till middle age. Large defect causes shunting of the blood from left to right causing right ventricular volume overload progressing to right ventricular hypertrophy and pulmonary hypertension (PAH), resulting in atrial fibrillation, congestive heart failure and reversal of shunt (Eisenmenger syndrome). The changes in systemic vascular resistance (SVR) and pulmonary vascular resistance (PVR) play an important role in successful management of child with ASD with dilated RV who underwent left orchidopexy under caudal block with general anesthesia.

### CASE REPORT:

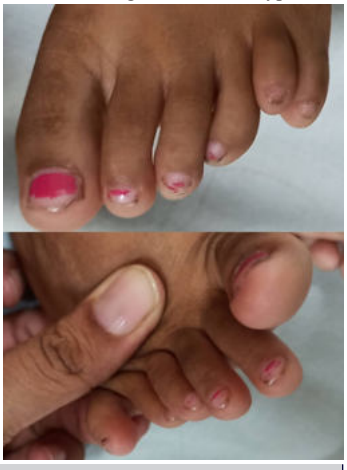
A 3.5-years old boy, with a history of ASD presented to surgery OPD with chief complaint of bilateral absent testis. After examination surgeon planned for left orchidopexy and patient was sent for Pre anaesthetic checkup. No history of any corrective or palliative heart surgery and was not on any medication. Pre anesthetic examination: A 3.5-years old boy, weighing 10.2 kgs, height 92cms, conscious, oriented to place and person. Brittle hair, left preauricular sinus present. Polydactyly in both feet. History of recurrent lower respiratory tract infections and failure to thrive. No cyanosis, clubbing, lymphadenopathy. On chest auscultation normal vesicular breath sounds with equally bilateral air entry heard. S1, S2 heard normally in Cardiovascular examination with no added sound. Bilateral absent testis. Investigations: chest x ray showed cardiomegaly with increased pulmonary vascular markings. ECG showed sinus tachycardia. 2D echocardiography reported FO-ASD (7mm) with left to right shunt, trivial TR, RVSP 25mmHg & grossly dilated RV. Other blood investigations were within the normal limit. Anaesthetic Management: General anesthesia with caudal block was planned for surgery and valid written informed high-risk consent was taken from parents. Patient was then shifted to operation theatre, venous access secured, IV line deaired and isolyte P started. Standard noninvasive monitors including EtCO2 and temperature monitors were attached. All resuscitative and cardiac drugs were kept ready. Premedication with Inj. Midazolam 0.01mg/kg, inj. glycopyrrolate 0.005mg/kg, inj. Ondansetron 0.06mg/kg and inj. Fentanyl 2mg/kg given intravenously. Child preoxygenated with 100% oxygen for 3 minutes and induced with Inj. Ketamine 20mg iv & Inj. Atracurium 5mg was given. Patient intubated with ET Tube no 4.5 mm ID and fixed properly after checking equal bilateral air entry. Caudal block was given. Maintenance of anesthesia was done with Oxygen, Isoflurane and Inj. Atracurium. At the end of surgery patient extubated after adequate neuromuscular reversal and shifted to PICU for monitoring.

### DISCUSSION:

In our case 3.5 yrs. old boy had FO-ASD (7mm) with left to right shunt posted for left orchidopexy. Authors decided to administer general anaesthesia for better maintenance of ventilation, PVR and SVR. The aim of anaesthetic management in such patients is to maintain pulmonary vascular resistance, systemic vascular resistance & adequate tissue oxygenation. Moreover, mechanical ventilation of lungs by their stretching effect stimulates release of nitric oxide and prostaglandins which are pulmonary vasodilator. One of the important precautions that have to be taken is to avoid systemic air embolization, so the IV lines were cautiously deaired. N2O was not used for maintenance of anaesthesia so as to decrease the risk of paradoxical air embolism and rise in PVR.

### CONCLUSION:

Children with CHD may provide a challenge to anaesthesiologist, but with careful evaluation & planning, it is possible to manage such cases. Understanding the pathophysiology of particular cardiac lesion is important for successful management of these type of cases.



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