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ANAESTHETIC MANAGEMENT OF A PARTURIENT IMPLANTED WITH A PERMANENT PACEMAKER- A CASE REPORT.

Anaesthesiology

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ABSTRACT

Complete heart block is an abnormality of conduction system in the heart. Complete heart block in pregnancy is not a common event and it may be congenital or acquired At the present time, a patient with a pacemaker who undergoes an anaesthesia for a surgical procedure is very common, but a parturient with a permanent pacemaker scheduled for elective caesarean section (c/s) is very rare For caesarean section, because of destabilized cardiovascular adaptation, an anaesthesiologist must focus on detecting the early signs of compromised cardiac output in order to avoid maternal as well as fetal distress. . We present a case report in managing the parturient installed with non-rate response type pacemaker undergoing C/S under epidural along with general anaesthesia

KEYWORDS

Heart Block, Permenant Pacemaker, LSCS, General Anaesthesia, Epidural

INTRODUCTION:

Complete heart block is relatively rare condition in pregnancy. Cause may be congenital and acquired. Complete heart block in children and young adults is usually congenital. In fact, 30% of the cases of congenital complete heart block remain undiscovered until adulthood and may therefore present during pregnancy.[1-5] We report the management of a parturient at 36 weeks of gestation with an implanted permanent pacemaker for congenital complete heart block (CHB), for LSCS. There is paucity of literature describing "best practice" for anaesthetic care of parturient with pacemakers. The incidence, implications and management of CHB in pregnancy are reviewed.

CASE REPORT

A 23 Yrs old female patient known case of complete congenital heart block with permanent pacemaker in situ, was admitted in department of obstetric and gynaecology with history of amenorrhoea since 36 week. Patient was admitted in cardiology department in 2011 with history of hypotension and syncope where she was evaluated and diagnosed as a case of congenital complete heart block and put on permanent pacemaker with fixed rate at 60 per minute. Post pacemaker placement patient was relatively asymptomatic and was under cardiology OP follow up. She was on anticoagulant therapy. She also presented with history of irregular menses since 5 yr. she was on Tab Tide 10mg 1-1-0 and Tab Aldactone 25 mg od and Tab Prolomet XL 50mg bd and Tab Metolar 50mg bd and Tab Lasix sos. No history of gestational diabetes and hypertension. She was admitted for elective LSCS due to cardiac element with 2 wk disparity in fetal age.

On admission, her general condition was stable; pulse rate was 60/min and blood pressure (BP) was 110/70mmHg.Clinically, cardiorespiratory and central nervous system examinations were normal. Per-abdomen examination showed a foetus in cephalic presentation, uterine height at 36 weeks, foetal heart rate 136 beats/min and regular with clinical and ultrasonographic evidence of 2 wk disparity in fetal age. Basic routine laboratory investigations were normal. Electrocardiography showed a complete heart block with an atrial rate of 80/min, ventricular rate of 46/min and a narrow QRS complex [Figure 1,2,3]. Echocardiography revealed LA/LV dilated, global hypokinesia,mild LV systolic dysfunction, stage 2 diastolic dysfunction, mild MR/no TR/AR/PAH,IAS/AVS intact, no clot effusion. She was accepted for anaesthesia under ASA II and was explained about the anaesthetic technique.

Patient was kept nil oral for 8 h. Tab. Ranitidine 150 mg was given on the previous night followed by Tab. Ranitidine 150 mg and Tab. Metoclopramide 10 mg the next morning 2 h before the surgery. The pacemaker was set in a demand mode of 60/min. The patient was pre-loaded with 750 mL of Ringer's lactate solution. Monitoring included ECG, Pulse oximetryand NIBP. Emergency cardiac drugs, temporarypacemaker and image intensifier were kept ready Cardiologist was standby for emergency pacing if required. Patient shifted inside the operation theatre after taking informed and high risk consent .Intravenous line secured with 18G IV cannula in both upper arm. Intra-arterial catheter inserted in left radial artery and peripheral inserted central line put and fixed in right upper arm cubital vein .IV fluid started. Epidural catheter was placed in L3-4 interspinal space in left lateral position and fixed at 10cm. After test dose of 3 ml of 2% xylocaine with adrenaline [1:200000] and 50 mcg of sterile fentanyl was given through epidural catheter. Preoxygenation done for 3 minutes with Bain's circuit, RSI done with injection Etomidate 5+5+5mg slow iv along with injection Xylocaine 60mg 90 seconds before intubation with Succinylcholine 100mg bolus. Intubation done with 7mm ID endotracheal tube, fixed at 19 cm after biletral equal air entry. Surgery started, injection fentanyl 70 mcg and injection midazolam 1mg given after baby delivery. Muscle relaxant was injection atracurium. Injection oxytocin bolus(5 unit) was given slowly along with oxytocin infusion started (20 unit in 500ml NS). She delivered malebaby weighing 3 kg with normal Apgar score. She remained hemo dynamically stable throughout the surgery. After completion of surgery patient reversed with injection neostigmine 5mg + glycopyrolate 0.5mg. Patient was extubated smoothly and uneventfully. Total 1.5 L of fluids were given. She was shiftedto ICU and monitored for 48 hrs.

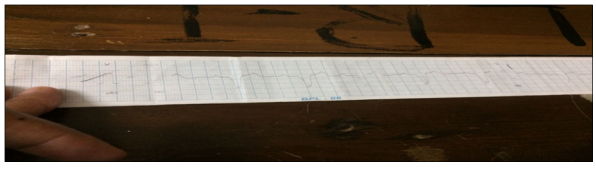

Figure 1

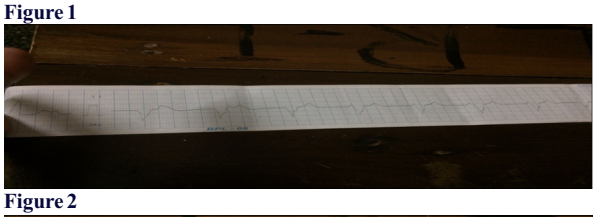

Figure 2

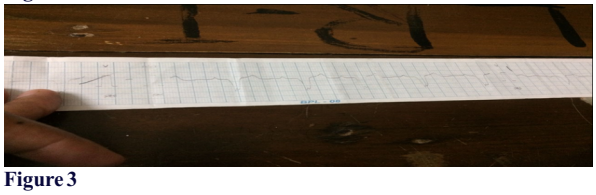

Figure 3

DISCUSSION:

Complete heart block is a disorder of cardiac conduction system with complete absence of conduction between atria and ventricles. Block may be at the level of AV node, Bundle of HIS or bundle branch or Purkinje system. When block is located high in septum or AV node, the QRS complexes are narrow (< 0.15) and heart rate increases in response to exercise, atropine or sympathomimetic. Our patient probably had a block at the level of A-V node as she was hemo

dynamically stable and there was increase in heart rate during tread mill test. There is a controversy regarding the value of prophylactic insertion of pacemaker in pregnant patients[7, 8]. For symptomatic patients in the first trimester, permanent pacemaker implantation is the therapy of choice[2]. Asymptomatic patients who respond to exercise by increase in heart rate can be managed without pacemaker, however; a temporary pacemaker should be available if excessive slowing of heart rate or syncope occurs during surgery.

In our patient permanent pacemaker was insitu because patient had history of syncope in past. Anaesthetic problems encountered in patients with complete heart block include bradycardia, hypotension, arrhythmias, cardiac arrest or even sudden death. To prevent such problems anaesthetic agents or technique that interfere least with heart rate and conduction are recommended[3]. Spinal anaesthesia is associated with considerable hemodynamic imbalance and inability to control the level of block. The occurrence of third degree heart block and asystole associated with spinal anaesthesia has been reported[4,9]. We opted for epidural opioids along with general anaesthesia, especially fentanyl, which gives minimal effects on the cardiovascular system. Considering all these aspects, epidural with General Anaesthesia was our modality of choice. It permitted hemodynamic stability along with decrease requirement of anaesthetic agents.

CONCLUSION

General anaesthesia with drugs causing minimal toxicity to heart with Epidural anaesthesia can be safely given to pregnant patient with complete heart block with permanent pacemaker.

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