ANAESTHETIC MANAGEMENT OF AN UNUSUAL CASE OF COMPLETE HEART BLOCK FOR LSCS

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SUMMARY
A young primigravida presented at 36 weeks of gestation with complete heart block and singleton pregnancy. Complete heart block was diagnosed during her first antenatal checkup. She underwent a lower segment cesarean section under epidural anaesthesia successfully. The patient remained asymptomatic and did not require antiarrhythmic drugs or pacing. Maternal and fetal outcomes were excellent.

Keywords: Complete heart block, Pregnancy, Epidural anesthesia.

Introduction
Complete heart block is a relatively rare problem in pregnancy.¹ Heart block may be congenital or acquired secondary to cardiac surgery, rheumatic heart disease or infective disorders. To date, many such cases have been reported but there is a paucity of information on the anesthetic management of complete heart block detected for the first time during pregnancy for elective lower segment cesarean section. Here we report successful anesthetic management using epidural blockade for elective LSCS in a parturient with complete heart block.

Case report
A 28 year old primigravida presented for elective LSCS at 36 wks of gestation for obstetric indication. Complete heart block was detected during her first antenatal checkup. Past history was not significant except for PDA ligation at the age of 12 years. She was evaluated by ECG, echocardiography and tread mill test. ECG showed complete heart block with narrow QRS indicating a high nodal impulse. Echocardiography was normal and tread mill test showed increase in heart rate from 58 to 104/min. To rule out other possible underlying causes of heart block, antinuclear antibody for systemic lupus erythematosus and serum TSH for thyroid disorder were done which were normal. She was allowed to continue her pregnancy under regular cardio-obstetric follow-up.

On examination her pulse rate was 64/min, regular and B.P was 100/70 mmHg. Cardio respiratory system was normal. She was preloaded with normal saline 10 ml/kg I.V. Monitoring included ECG, Pulse oximetry and NIBP. Emergency cardiac drugs, temporary pacemaker and image intensifier were kept ready. Cardiologist was standby for emergency pacing if required. Epidural catheter was placed in L3-4 space in left lateral position and about 3-4 cm catheter was left in epidural space. After test dose of 3 ml of 2% xylocaine with adrenaline [1:20000], a mixture of 5 ml of 2% xylocaine and 5 ml of 0.5% bupivacaine was injected. After assessing level of block, another 5 ml of mixture of xylocaine+bupivacaine was given. When T6 level was achieved, surgery was started and she delivered male baby weighing 3 kg with normal Apgar score. She remained hemodynamically stable throughout the surgery. Total 1.5 L of fluids were given. She was shifted to ICU and monitored for 48 hrs.

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 sympathomimetics. Our patient probably had a block at the level of A-V node as she was hemodynamically 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. 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. Hence in our patient, the decision to perform a LSCS was taken along with arrangements for a temporary pacemaker.

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. 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. General anaesthesia may be hazardous because of adverse effects of drugs. Inhalational agents that reduce myocardial chronotropy and inotropy and sensitize the myocardium to catecholamines may reduce cardiac output and lead to arrhythmias. There are case reports of bradycardia and asystole caused by opioids like fentanyl, sufentanyl, suxamethonium, neostigmine and vecuronium. Induction agent like propofol can also aggravate heart block. Considering all these aspects, epidural anaesthesia through catheter was our modality of choice. It permitted graduated doses of epidural anaesthesia with bupivacaine has been observed in patients with asymptomatic AV conduction abnormalities by Eledjam et al for lower limb or pelvic surgery.

In conclusion, epidural anaesthesia can be safely administered without prophylactic transvenous pacing in an uncomplicated case of complete heart block provided they are under continuous ECG monitoring with temporary pacing at hand.

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