

Labour Analgesia In A Patient With Complete Heart Block

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Abstract

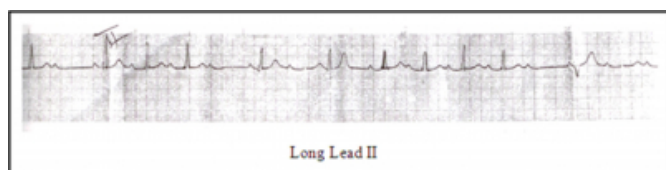
A 37-year-old primigravida was diagnosed to have a complete heart block (CHB) during her antenatal checkup at 36 weeks. She was evaluated by a cardiologist and was advised for labour analgesia at the institute where all cardiac invasive facilities were available. The patient was asymptomatic. She was admitted in K.E.M Hospital for safe confinement.

On clinical examination, the heart rate was 44/min, blood pressure was 140/90 mm of Hg, and she had pedal edema. Ultrasonography revealed a single live intrauterine foetus of gestational age of 38 weeks with vertex presentation.

On investigation---

- ECG showed narrow complex CHB with ventricular rate of 38/min.
- 2D-ECHO showed left ventricular ejection fraction of 69%, Trivial MR with trivial TR with normal left ventricular function and valves and without regional wall motion abnormality.
- All other investigations –Within normal limits.

Figure 1



On admission, normal delivery was planned under epidural analgesia and a temporary transvenous pacemaker was inserted through the right internal jugular vein. The pacemaker was set at a back up rate of 50/min.

Premedication-- Inj. Glycopyrrolate 0.2 mg was given. An intravenous line was secured with a 20 G veinflow and intravenous fluids were started. A cardioscope was attached and a defibrillator was kept ready if required. All cardiac drugs were kept available. Isoprenalin drip was prepared and kept ready (Isoprenalin 2 mg in 500 ml normal saline, to be

given at the rate of 20 ml/hr if required). A 16 G epidural catheter was inserted under aseptic precaution using 16 G Touhy's needle between L3-L4 space.

Labour was induced by cerviprime. Labour pains started within one hour. Baseline vital parameters were noted. At 3 cm cervical dilatation, 3ml of 2% Xylocard was given as test dose through the epidural catheter after negative aspiration of blood or CSF. 10 minutes later, 9ml of 0.125% Bupivacaine and 10 micrograms Sufentanyl were given epidurally. The patient's vital parameters were monitored every 15 minutes. Sensory block was achieved between segments T 10 to L1 without any motor involvement. The patient was relieved of pain after 10 minutes of the epidural injection. Haemodynamic changes were within acceptable limits (+/- 10 from the baseline). First epidural top-up dose was required after 2 hours and 5 ml of 0.125% Bupivacaine was given at this time. Four more top-up doses were given on patient's demand at intervals of 1 hour each. Every top-up dose was 4 ml of 0.125% Bupivacaine and 5 microgram of Sufentanyl.

During this time, pulse, BP, ECG, sensory and motor level of analgesia, and foetal heart rate were monitored closely. Cervical dilatation and effacement were checked by gynaecologist and progression of labour was normal.

Figure 2**Table 1: Hemodynamic Monitoring During Labour**

	Pulse/min	BPmm of Hg	ECG	FHR/min	Sensory block
Baseline vitals	80	120/70	CHB	154	Nil
1 st epidural injection	87	126/76	CHB	150	T-10 to L-1
1 st topup	84	116/68	CHB	140	T-10 to L-1
2 nd topup	90	120/68	CHB	156	T-10 to L-1
3 rd topup	88	110/62	CHB	160	T-10 to L-1
4 th topup	90	116/70	CHB	144	T-10 to S-5
5 th topup	86	126/76	CHB	160	T-10 to S-5
Delivery	92	130/80	CHB	150	T-10 to S-5
Post delivery	88	124/72	CHB		T-10 to S-5

During intrapartum monitoring, baseline foetal heart rate was 150/min with beat to beat variability being 10 to 15 beats/min. Oxytocine drip and Inj. Buscopan were used to shorten the duration of labour. The patient was made to sit in propped up position on delivery table. She was asked to bear down at each uterine contraction. At crowning, episiotomy was done and a healthy male child of 3 Kg was delivered using forceps. APGAR score at 5 minutes was 10/10. The patient was positioned supine and observed for another 2 hours. Duration of labour was 8 hours and was uneventful. The pacemaker was removed on the next morning and the patient was discharged after 5 days. She was advised to follow up with cardiology for permanent pacemaker implantation after 15 days with reports of TSH3, T4, ANA,Ds, DNA, Ca, Mg.

DISCUSSION

Physiological changes in pregnancy especially related to cardiovascular system can be detrimental in patients of heart disease. Haemodynamics are altered substantially during labour and delivery, secondary to anxiety, pain and uterine

contractions. Elective induction of labour and labour analgesia is advisable in such high risk patients for better planning, haemodynamic monitoring & availability of expert personnel during labour.(1)

Complete heart block described during pregnancy is mostly of congenital origin. Patients with CHB may remain asymptomatic during pregnancy and have uncomplicated labour and delivery after insertion of temporary pacemaker. As per literature, very few case reports of patients having CHB who received labour analgesia are available. N. Hidaka et al(2) have reported 7 cases of CHB who received labour analgesia. All these women had temporary pacing lead inserted prior to induction of labour. Our patient was diagnosed to have CHB on antenatal checkup. Normal delivery was planned by Obstetricians after insertion of temporary pacemaker. We planned to give epidural analgesia to this patient as(3) labour analgesia offers distinct advantage in these patients by maintaining the maternal and foetal haemodynamics and preventing the increase of plasma catecholamines.

Thus painless delivery was successfully conducted in a patient of complete heart block with temporary pacemaker. In conclusion; epidural analgesia can be given safely in cases of CHB.

References

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