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ANESTHETIC MANAGEMENT OF PRIMI WITH TERM GEASTATIONAL AGE WITH POST DATED PREGNANCY WITH MODERATE PULMONARY STENOSIS WITH OLIGOHYDRAMNIOS POSTED FOR EMERGENCY LSCS UNDER GRADED EPIDURAL ANESTHESIA

Anaesthesiology

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ABSTRACT

Pulmonary stenosis is a common form of congenital heart disease that refers to a dynamic or fixed obstruction to flow from the right ventricle to the pulmonary vasculature.A25 years old Primi with term gestational age with moderate pulmonary stenosis posted for emergency LSCS in view of oligohydramnios.

KEYWORDS

Pulmonary stenosis, caesarean section, Graded epidural anesthesia

INTRODUCTION:

Pulmonary stenosis is a common form of congenital heart disease which refers to a dynamic or fixed obstruction to flow from the right ventricle to the pulmonary vasculature that occasionally is diagnosed for the first time in adulthood.Isolated valvular pulmonary stenosis comprises approximately 10% of congenital heart disease.Anesthetic management of a parturient with pulmonary stenosis requires an understanding of its physiological adaptations and also the drugs that alter the right ventricular outflow

Case Report:

The patient, 25 years old Primiwith term gestational age (37 weeks) admittedtoGovt maternity hospital Tirupati on 31st January 2022with complaints of abdominal pain and per vaginal discharge. She was diagnosed with pulmonary stenosiswhich was an incidental finding in 2decho.

Antenatal trimester history was normal. She has no previous history of hypertension, diabetes mellitus, or bronchial asthma. The patient diagnosed to have oligohydromnios on doing ultrasound after admission with AFI of 2cm. she was posted for emergency lower segment cesarean section in view of oilgohydramnios. The pre-anesthetic check-up was done, she was conscious, coherent and obeying commands.On examination her vitals were:BP: 130/80. Pulse rate - 90/minute, SP02- 98% in room air.systemic examination: cardiovascular system: S1, S2 normal, no added sounds, respiratory system: bilateral air entry present, Central nervous system: no focal neurological deficit. Investigations:Haemoglobin- 12.6g%, platelets – 2.4 lakhs, Renal Function Test- Normal, Coagulation Profile- Normal, ECG – T wave inversions in V2- V4 ,2D ECHO - moderate PS , LVEF – 60% normal LV systolic function , no RWMA , mild TR, Her physical score was assessed to be ASA IIIE.

Airway examination: MPG grade 3 &Rest parameters were normal. Emergency lower segment cesarean was planned under graded epidural anesthesia. Informed and written high-risk consent was taken from patient attendees in their understandable language. In theatre, a multi-channel monitor was attached to the patient, with a pulse oximeter, noninvasive BP, Five lead ECG, and Baseline values within normal limits. Intravenous access was secured with an 18G cannula, 250ml of Ringer lactate infused before epidural anesthesia, and then continued as 10ml/kg/hr. In the sitting position, a midline epidural was performed at the L2- L3 interspinous space using a size 18G Tuohy epidural needle and epidural space identified at 3 cms by loss of resistance to saline technique . The epidural catheter was fixed at 10cm at the skin.The patient was placed in a supine position 3ml of 2% lignocaine is given as a test dose.0.5 % isobaric bupivacaine aliquot of 2ml and a total of 12ml was given. Loss of sensation to pinprick at the sixth thoracic level by the end of 10 min of epidural anesthetic dose.Hemodynamic parameters were stable(Fig- 1) throughout the procedure.A live fetus of weight 3.2 kg was delivered with an APGAR score of 8-9 at 1 min, and intravenous infusion of Oxytocin 5-10units /hr started. The patient was shifted to OBG ICU for post-operative care where she was monitored for 24hrs .Injection of 0.125% isobaric bupivacaine + fentanyl 2mcg/ml infusion was started at 6-8ml/hr for postoperative pain relief. The patient was shifted to the ward the next day and discharged from the hospital on the 5th postoperative day without complications.

DISCUSSION:

In planning an anesthetic for a delivery in a woman with congenital or acquired heart disease, the anesthesia provider must take into consideration the patient's cardiac lesion or disease state; the normal physiologic changes of pregnancy, labor, and delivery; and the hemodynamic changes of the anesthetic itself. During pregnancy, labor, and delivery, regurgitant valvular lesions are generally tolerated better than stenotic valvular lesions[1].Anesthetic management of a parturient with pulmonary stenosis requires an understanding of its physiological adaptations and also the drugs that alter the right ventricular outflow. A critical component of the care of women of reproductive age involves knowledgeable preconception counselling and skilful management throughout pregnancy and delivery [2].Pulmonic stenosis is relatively uncommon in occurrence as an isolatedcongenital defect, occurring in approximately 5/10,000 live births andaccounting for 2% of CHD with a slight female predominance [3]. It is graded based on peak pressure gradient (PPG) across the pulmonary valveinto mild (<36 mm Hg), moderate (36-64 mm Hg) and severe (>64mmHg) [4]. Mild-to-moderate PS is associated with little or no maternal risk [5]. Severe PS can be well tolerated during pregnancy. However, severe PS may be associated with increased risk during labor, delivery, and the puerperium. During pregnancy increase in intravascular volume and heart rate can precipitate Right heart failure, also preload can be decreased by aortocaval compression decreased forward flow and which can be further decreased by the neuraxial sympathetic blockade. The goals of Anesthetic management include maintaining adequate right ventricular preload, left ventricular afterload, and right ventricular contractility and avoiding a further increase in pulmonary vascular resistance.

Anesthetic management is mainly implicated in the reduction in PVR and SVR, maintaining normal sinus rhythm and effective ventricular filling pressures by optimum preloading but excessive preloading can also precipitate RHF. Inpulmonary stenosis, fluid management is of outmost importance formaintenance of preload but care should be taken to avoid overload leadingto right heart failure and acute pulmonary edema, especially in this settingof associated pre-eclampsia.[6]Epidural labor analgesia is recommended for women

with heart disease to decrease catecholamine release and eliminate the increased cardiac output and tachycardia attributable to labor pain. The afterload reduction that occurs with epidural analgesia should be followed closely and may need to be countered with a carefully titrated α-adrenergic agonist to prevent tachycardia and ischemia. When cesarean delivery is indicated, it is important to tailor the anesthetic technique to each individual patient. Regional anesthesia is not necessarily contraindicated and should be considered for most patients.We here choose graded epidural anesthesia to avoid generalanesthesia-induced increase in pulmonary vascular resistance and spinal anesthesia-induced precipitous hypotension

CONCLUSION:

In conclusion, our case report is evidence of a successful outcome with graded epidural Anesthesia in the parturient with moderate pulmonary stenosis but recommendations cannot be taken from a single report. Pulmonary stenosis increases right ventricular work and impairs left ventricular output by shifting the right ventricular septum to left and Cardiac output is maintained by an increase in SVR.

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