



ANESTHESIA IMPLICATIONS IN A PREGNANT PATIENT WITH RHD WITH MITRAL STENOSIS IN EMERGENCY CESARIAN SECTION

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KEYWORDS :

INTRODUCTION

- The pregnant parturient with cardiac disease continues to challenge the anesthesiologist's skills. Pregnancy, labor, and delivery impose unique stresses on the circulation.
- In fact, the induction and delivery of anesthesia may further destabilize these patients if not approached cautiously and comprehensively.
- To avoid cardiac decompensation, the anesthesiologist must be thoroughly aware of the normal physiology of labor, delivery, the puerperium, the nature and progression of heart disease during pregnancy, the cardiovascular effects of various anesthetic regimens and the therapies available to manage acute complications
- Rheumatic fever is a diffuse inflammatory disease affecting the heart, joints, and subcutaneous tissues following group A β -hemolytic streptococcal infection.
- Rheumatic mitral valve stenosis is the most frequent RHD
- Encountered in the pregnant population worldwide. Mitral stenosis most frequently requires therapeutic intervention during pregnancy.

CASE REPORT

History of presenting illness

- A 26 year old gravida G2P1MTP1 posted for emergency lower segment cesarean section with nonreassuring NST. She had complaints of breathlessness since 3 days NYHA grade II which increased in supine position and relieved on sitting. No h/o cough, chest pain, fever, loss of appetite or loss of weight or recurrent respiratory infections, paroxysmal nocturnal dyspnoea and pedal edema. No h/o decreased urine output
- Patient is a known case of RHD diagnosed 1 year back. She was on penicillin prophylaxis, tab lasix 20mg BD, tab metoprolol 25 mg OD
- General examination – no PICC. Pulse 76/min, regular BP 116/78 mmHg. Cardiovascular system – S1S2 present no murmur
- Respiratory system: air entry bilaterally equal and clear
- Investigations
 - Hb 12.7 gm%, WBC count 11500/cmm, platelet 1.9 lakh/cmm
 - Creatinine 1.1mg%, SGOT/SGPT 13/17, Electrolytes Na/K 135/3.5
 - PT/INR 13.9/1.04, ECG – NSR, Chest xray WNL
 - 2D echo showed moderate MS with mitral valve area of 1.3 cm², ejection fraction 60%, LA dimension 4.6 cm

INTRAOPERATIVE MANAGEMENT

- Starvation confirmed and informed high risk consent taken
- Patient taken inside on a wheelchair. Standard ASA monitoring devices applied. Patient already has 2 wide bore iv access.
- Patient was given IV ondansetron, metoclopramide and pantoprazole as aspiration prophylaxis
- patient was positioned in the left uterine displacement position. Fetal heart rate monitoring was performed by one of the obstetricians from the time of entry into the operating room until surgical site preparation.
- A left radial arterial catheter was placed after local

infiltration.

- A left antecubital vein picc line 16G catheter was secured after local infiltration.
- General anesthesia was induced with etomidate 0.3mg/kg, and succinylcholine 2mg/kg was used as NM blocker, which was administered in a rapid sequence. Maintenance was done by inj fentanyl 2mcg/kg and atracurium 0.5mg/kg with sevoflurane
- Higher doses of inhalational agents were avoided to prevent uterine atony.
- Hemodynamic response to laryngoscopy was avoided with inj lignocaine and deeper plane of anesthesia
- Phenylephrine used for hypotension and norepinephrine was kept ready to provide additional inotropic support without causing excess tachycardia.
- Lower segment Cesarean section was performed without complications. Apgar scores of the neonate was 9 at 5 min. After delivery, 20 U oxytocin was administered intravenously slowly avoiding bolus injections.
- Intraoperative ABG report done prior to extubation.
- At the conclusion of the procedure, the patient was extubated. Inj esmolol 0.5mg/kg was given to avoid tachycardia. She was initially monitored in the operating room after extubation to ensure normocarbia. She was then transferred to the cardiac care unit for postoperative monitoring.
- Post operative chest xray was advised to confirm the position of PICC line catheter.

Anesthesia considerations in a case of RHD with MS in a pregnant patient

- Cardiac decompensation usually takes place late in pregnancy as the hemodynamic burden of pregnancy become more pronounced as well as after delivery due to an abrupt increase of preload secondary to autotransfusion and aorto-caval compression.
- Hemodynamic goals prevent rapid ventricular rates avoid marked increases in SVR minimize increase in central blood volume prevent increases in pulmonary artery pressure
- With pregnancy the anatomically moderate mitral stenosis can become functionally severe. Increased heart rate, increased cardiac output and demand, decreased ventricular filling causing back pressure in pulmonary circulation and pulmonary edema.

Immediately after delivery is the most likely time for decompensation

CONCLUSION

- The case was successfully managed under general anesthesia.
- A coordination between a team of obstetrician, anesthetist, cardiologist and neonatologist is recommended.

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