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	SUCCESSFUL MANAGEMENT OF AN EMERGENT CAESAREAN SECTION IN A PATIENT WITH PROSTHETIC MITRAL VALVE: A CHALLENGE FOR ANESTHESIOLOGIST		
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ABSTRACT Surgical management with prosthetic valve is definitive management for rheumatic heart disease with severe grades of mitral stenosis and mitral regurgitation. Bioprosthetic valves are preferred in younger females of child bearing age in view of its obvious advantages does not, however, comes without challenge. Here, we describe the effective perioperative anaesthetic care of a woman who underwent an Emergency Caesarean section to deliver a term baby and had a history of mitral valve bioprosthesis and bronchial asthma. The effective perioperative care involves a team approach including cardiologist, anaesthesiologist, intensivist and obstetrician. Strict vigilance on goals of anesthesia is keystone in management of such complex cases. This example demonstrates the importance of early detection of high-risk pregnancies, the advantages of early referral to anaesthesia for preoperative evaluation to design an anaesthetic strategy, and the importance of multidisciplinary involvement in the perioperative period.

KEYWORDS: Pregnancy, Mitral valve, Valvulopathies, Prosthesis, Anesthesia.

INTRODUCTION:

Although pregnancy in women with prosthetic heart valves^[1] continues to show increased risk of adverse outcomes as compared to the general population rate of maternal mortality^[2] advances in medical and surgical treatments for congenital heart disease^[3] and improvement in fertility interventions have led to an increase in the proportion of women with congenital cardiac disease and/or acquired heart disease that have the potential to become pregnant. Mechanical and bio prosthetic (Hetero, Homo, and Autograft) valve replacement are common treatments for severe mitral valve disease; each has benefits and drawbacks for young women who hope to become pregnant in the future. Bioprosthetic heart valves^[4] are more expensive than mechanical heart valves. Here we describe a case of 29 year old 1st gravida woman with 38 weeks two days gestation with history of post mitral valve replacement 2 years ago posted for emergent caesarean section.

Case Report:

The patient was a 29- year-old 1st gravida woman who represented to Antenatal Anaesthesia clinic for preevaluation at 38 weeks two days gestation. She was 2 years status post mitral valve replacement which was done for severe mitral stenosis, with moderate mitral regurgitation respectively, her long-standing history of valvular heart disease^[5] was diagnosed at the age of 26 years during a medical work up. Given her symptoms and valves involved her valvulopathy is presumed to be secondary to rheumatic fever. The patient has no other comorbidities and was on therapeutic anticoagulation during this pregnancy^[6] with therapeutic Enoxaparin as per her cardiologist's recommendations. She otherwise reported healthy prior to the diagnosis of her valvular disease. With the exception of sporadic worsening of lower extremities oedema and dyspnea, her pregnancy was uneventful overall. Throughout her pregnancy, cardiologist observed her carefully. With stable NYHA II symptoms and euvolemia upon examination, the patient seemed to be doing well. A bioprosthetic mechanical valve^[7] with a left ventricular ejection fraction (LVEF) of 58% was found using trans thoracic echocardiography (TTE), and there was minimal regurgitation.

Based on the recommendation of cardiology for delivery and admission to the cardiac care unit (CCU). It was explained to the patient that in the event of an emergency caesarean section, general anaesthesia (GA) would likely be required, along with the potential for central venous access, Trans thoracic Echocardiography or Trans esophageal Echocardiography (TTE/TEE), prolonged intubation, and even the requirement for cardiac surgery in the event of acute cardiac decompensation.

The patient presented to the labor and delivery (L&D) floor at 38 weeks 2 days. She was placed on continuous foetal monitoring and was noted to have contractions. Cardiology was consulted at this time who recommended active diuresing the patient with a goal of 2 L/day net negative. It was decided to take the patient for emergent caesarean section and bilateral tubal ligation.

As agreed upon during her preoperative evaluation session, the patient was brought to the operating room (OR), where a caesarean section was performed while the patient was under general anaesthesia (GA). She underwent a quick sequence induction with titrated dosage after the insertion of an awake arterial line. Inj. Etomidate and 100 mg Inj. Succinylcholine. Additionally, the patient received 15 IU of Inj. Oxytocin once the foetus was delivered. At 1 and 5 minutes, respectively, the patient delivered a live, healthy female child with APGARS of 2 and 9. After being moved to the cardiac care unit (CCU), she was successfully extubated five hours later. Repeat Trans thoracic echocardiography (TTE) post-delivery was limited, but it did not differ significantly from before. On POD 5, the patient was successfully sent home.

DISCUSSION:

Perioperative management of prosthetic valve patient is challenging. The main problems faced were about anticoagulation and cardiac decompensation, volume loading issues and heart rate control.

Given her cardiac history and propensity for volume overload, the patient was informed that her pre-anesthesia strategy for the birth involved trying to stay euvolemic during the intrapartum and post-partum periods. It was advised to prevent afterload increases since they could exacerbate regurgitation and atrial volume overload. The ideal heart rate was between 70 and 90 beats per minute (bpm), as bradycardia would prolong regurgitant flow. If her anticoagulation schedule permitted it, we would prefer to put an epidural catheter early in the course of a vaginal delivery since neuraxial anaesthesia lessens afterload, sympathetic outflow, and the subsequent catecholamine surges related to labour and delivery. The team talked about the need for an arterial catheter for close hemodynamic monitoring if a caesarean section was necessary.

We intended to talk to the patient's obstetrician and cardiologist about the heparin anticoagulation strategy in the intrapartum and postpartum periods because her anticoagulation regimen^[8] affected our anaesthetic neuraxial plan. We advised the use of epidural anaesthesia^[8] with 0.5% Bupivacaine and Fentanyl in the event that the patient underwent a caesarean section while under general anaesthesia so that the catheter could be immediately removed while still managing postoperative pain and enabling postoperative anticoagulation to resume.

CONCLUSION:

Early prenatal referral of high-risk cardiac parturients to anaesthesia facilitates pre-partum discussion and decisionmaking about airway, anaesthetic, hemodynamic monitoring, and delivery techniques. Due to the fact that information collecting and her anaesthetic planning had already begun, despite her emergent presentation, a healthy delivery and postpartum outcome for both mother and child were made possible.

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