



## VALVULAR HEART DISEASE IN PREGNANCY: A CASE REPORT

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**ABSTRACT** Pregnancy is associated with significant cardiovascular changes which result in hemodynamic burden leading to increased morbidity and even mortality in women with cardiac disease. Risk during pregnancy is dependent upon the type and severity of valvular abnormality, NYHA functional status, left ventricular function and pulmonary pressure. We report a case of 21 years old unbooked primigravida with gestational age of 28 weeks 3 days, known case of valvular heart disease. Patient was managed conservatively by a team of obstetrician, cardiologist and physician. She had preterm vaginal delivery at 30 weeks without any complication. Early diagnosis of heart disease, regular antenatal checkup, institutional delivery and multidisciplinary approach can reduce the maternal and perinatal morbidity and mortality.

**KEYWORDS :** valvular heart disease, pregnancy, cardiovascular

### INTRODUCTION

Cardiovascular disease complicates 1% to 3% of all pregnancies and accounts for 10% to 15% of maternal mortality<sup>1</sup>. Rheumatic heart disease accounts for 80% to 90% of all heart diseases among pregnant women<sup>2</sup>. There are significant hemodynamic and cardiovascular changes during normal pregnancy which includes significant increase in cardiac output by 30% to 50%, heart rate by 15 to 20 beats per minute, plasma volume by 40% to 45% and red cell volume by 15% to 20% with decrease in systemic vascular resistance by 20%. These changes are well tolerated by women with normal cardiac reserve but for patient with heart disease, it is difficult to tolerate these changes thus predisposing her to increased risk of cardiac failure and hence increased maternal morbidity and mortality.

### CASE REPORT

21 years old unbooked primigravida with gestational age of 28 weeks 3 days came to labour room emergency at adesh medical college with chief complaints of pain abdomen associated with slight bleeding per vaginum. Patient had history of palpitations 3 months back for which she went to some local physician and was diagnosed with valvular heart disease on echocardiography. Patient was started on tablet metoprolol 25mg twice a day and got symptomatic relief. On general examination her vitals were stable but patient was slightly dyspneic. On cardiovascular examination, she had parasternal heave and diastolic murmur. On per abdomen examination, uterus was 28 weeks size, irritable with normal fetal heart sound. On local examination no active bleeding was seen. All her investigations including obstetric USG was normal. Her functional status was New York Heart Association class III. Patient was managed by multidisciplinary approach involving physician, obstetrician and cardiologist. Repeat echocardiogram was done which revealed mild to moderate AR with dilated left ventricular/ left atrium, mild tricuspid regurgitation, mild to moderate PR, severe pulmonary hypertension and patent ductus arteriosus with left to right shunt. Patient was hospitalized for cardiac and fetal monitoring. She was given weekly progesterone, prophylactic antibiotics and betamethasone coverage for fetal lung maturity. However after 2 weeks, patient went into spontaneous labour and had preterm vaginal delivery with no peripartum complications. She delivered a female baby, weighing 1.1kg with weak cry and respiratory distress. Baby was shifted to NICU and kept on continuous positive air pressure. Patient and baby were discharged from the hospital in good general condition.

### DISCUSSION

Management of pregnant women with valvular heart disease poses a great challenge to the obstetrician, cardiologist and anesthetist. It requires thorough understanding of the impact of cardio circulatory

changes associated with pregnancy on the patient's heart. Diagnosis of the heart disease can be missed during pregnancy as symptoms of pregnancy (tiredness, shortness of breath and palpitation) can mask those of heart disease. Women with previously asymptomatic heart disease may become symptomatic during pregnancy due to hemodynamic changes thus putting an immense strain on the heart as seen in our case. Fetus would also be compromised in these mothers due to limited oxygen supply that results in intrauterine growth retardation, premature birth (as seen in our case) and even fetal death. The maternal and fetal outcome depends upon the type and severity of valvular abnormality, NYHA functional status, left ventricular function and pulmonary pressure. Hemodynamic changes appear to begin in the first trimester and continue in the second and third trimester<sup>3</sup>. The cardiac demand increases during and immediately after delivery due to uterine contractions, anxiety, pushing and auto transfusion from the uterus into central circulation leading to pulmonary hypertension, pulmonary edema and cardiac failure. So the risk of maternal death is greatest during peripartum period<sup>4</sup>. Therefore high level surveillance should be continued until the hemodynamic changes return to normal. Thus the patient with heart disease needs a multidisciplinary approach for its favourable outcome.

### CONCLUSION

Pregnancy with valvular heart disease is a high risk situation which requires multidisciplinary approach so that any deterioration in symptoms can be detected early and managed in a timely way. Proper cardiac and obstetric management is recommended in a tertiary care center for achieving the optimal maternal and fetal outcome.

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