CASE REPORTS

A CASE OF POST-CAESAREAN PULMONARY OEDEMA DUE TO ASYMPTOMATIC UNDIAGNOSED HEART DISEASE

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INTRODUCTION

Cardiac disease especially the one involving the valves is associated with high incidence of decompensation during pregnancy. Valvular heart disease is usually a sequel of rheumatic fever whose incidence is still quite high in Pakistan in contrast to many developed countries of the world where congenital heart disease is now more prevalent[1]. Physiologically in pregnancy, plasma expansion starts early and reaches its peak at around 32 weeks. In addition red blood cell mass and cardiac output also increase. However, patients with mild valvular heart disease may stay asymptomatic in early pregnancy. As the pregnancy progresses, most of the patients with valvular heart disease would develop features of cardiac disease due to the haemodynamic burden of pregnancy[2]. In such patients pregnancy continues to be a challenge for the treating doctors as well as patients and it could be associated with unfavourable maternal/ fetal outcomes[3]. Literacy, sociocultural behavior and lack of awareness regarding medical health, lead to ignorance about the impact of cardiac disease.

We present a case of severe mitral stenosis and moderate mitral regurgitation which remained undiagnosed and asymptomatic during pregnancy and only became apparent after caesarean section.

CASE REPORT

A 22 year old primigravida married for one year, presented at 32 weeks of pregnancy with sudden clear, watery and abundant vaginal discharge for the past four hours. Fetal movements were normal. There was no history of abdominal pain, vaginal bleeding, fever, dysuria or bowel complaints. Neither was there any history of cough or dyspnoea. Previous antenatal record did not reveal any abnormality. On examination patient was generally well with blood pressure of 110/70 mmHg and pulse 80 beats per minute (bpm). Abdominal examination revealed fundal height of 32 weeks, singleton pregnancy with longitudinal lie and cephalic presentation. Head was 3/5 palpable. Fetal heart sounds were 140 bpm, regular. There were no uterine contractions. Speculum examination revealed excessive, clear vaginal liquor coming out of an undilated, uneffaced cervix. Cervical swab was taken for culture and sensitivity. Digital vaginal examination was not done because of risk of infection.

Investigations revealed haemoglobin (Hb)% 10.6 gm/dl, total leukocyte count (TLC) $9x10^9$/l, neutrophils 70% and lymphocytes 15%. Blood group was B positive. Urine complete examination and culture/sensitivity did not reveal any abnormality. Hepatitis screening was negative. Renal and liver function tests were within normal limits. C-reactive protein (CRP) was within normal limits. Ultrasound examination revealed single fetus with cephalic presentation, normal fetal cardiac activity, moderately reduced liquor and upper segment placenta. Cardiotocography showed baseline fetal heart rate 140 bpm, few accelerations but no decelerations.

On the basis of history and examination a diagnosis of preterm rupture of membranes was made. Injection dexamethasone and prophylactic antibiotics were given. It was decided after consulting paediatrician to wait for spontaneous onset of labour and fetal maturity so as to avoid complications of fetal immaturity provided there was no infection.

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However, after 36 hours parameters started deteriorating. TLC rose to $14x10^9$, neutrophils 90% and CRP >6 gm/dl. Bishop score was 2 i.e very poor so caesarean section was planned under spinal anesthesia. An alive baby girl weighing 2.3 kg, APGAR score 7/10 was delivered and handed over to paediatrician.

Intraoperatively patient stayed well but in postoperative obstetrics ICU four hours after surgery patient developed cough and shortness of breath. Auscultation of chest revealed crepitations all over the chest. Physician was called who confirmed the chest findings and shifted the patient to medical ICU. Patient was seen by pulmonologist and cardiologist. Echocardiogram showed the following findings:

- Right ventricle mildly dilated
- Rheumatic heart disease affecting pulmonic and mitral valves
- Mitral regurgitation grade 2/3
- Severe mitral stenosis
- No pleural effusion

Patient was treated successfully and discharged on 8th postoperative day in a stable condition with advice for further follow-up in cardiology and gynae OPD. Baby was also discharged from nursery on the 10th postoperative day in a stable condition with advice for follow-up in paediatric OPD.

DISCUSSION

Silent rheumatic heart disease which is discovered intra or postoperatively may be encountered in pregnancy. Our patient was completely asymptomatic before caesarean section.Valvular disease was unmasked after surgery when she developed shortness of breath and dyspnoea due to pulmonary oedema secondary to severe mitral stenosis. Maternal heart disease complicates at least 1% of pregnancies[4]. Rheumatic heart disease typically presents as mitral stenosis 5-15 years after the initial episode of rheumatic fever. Mitral stenosis is the most common valvular heart disease in pregnancy. It is characterized by narrowing of the orifice of the mitral valve[5].

Silent and asymptomatic valvular heart disease which is only revealed intra or post operatively can lead to a delay in establishing the correct diagnosis. Early diagnosis is possible if the index of suspicion is kept high in all women since one may come across asymptomatic heart disease as in this case. In case of murmurs or abnormal heart sounds complete work-up including chest x-ray, ECG and echocardiogram should be done[6]. Multidisciplinary approach involving gynaecologist, cardiologist and pulmonologist should be adopted. Echocardiography is the cornerstone for correct diagnosis of valvular heart disease. Once diagnosed, New York Heart Association classification system is used to rate the severity of heart disease[7]. Management should be tailored according to the individual patient's case. Gynaecologists, cardiologists and anaesthetists must keep the index of suspicion high for optimum treatment of pregnant cardiac patients. In our case both mother and neonate had a successful outcome.

CONFLICT OF INTEREST

This study has no conflict of interest to declare by any author.

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