CASE OF THE WEEK

Apollo HOSPITALS

PROSTHETIC MITRAL VALVE THROMBOSIS IN A KNOWN CASE OF RHEUMATIC HEART DISEASE AT 37 WEEKS PREGNANCY

AT APOLLO HOSPITALS, GANDHINAGAR

Pregnancy with prosthetic valve is a challenging situation since this is a hypercoagulable state and maintenance of anticoagulation for prosthetic valves becomes difficult due to the teratogenic effects and altered pharmacokinetics of anticoagulant drugs. Despite adequate anticoagulation, the incidence of prosthetic valve thrombosis has been estimated as 4% to 14% during pregnancy. Management decisions for this life-threatening complication are complex. , Bleeding and embolic risks associated with thrombolytic agents, the limited efficacy of thrombolysis in certain subgroups, and a lack of experience in the setting of pregnancy raise important concerns.
Here we report an interesting case of of Mitral Valve Thrombosis in a known case of Rheumatic Heart Disease, Status Post Mitral Valve Replacement in a Gravida3, Para1+1, 37 weeks pregnancy .

CASE REPORT
Mrs X, a 36 year old, Gravida3, Para1+1, 9 months amenorrhoea , LMP – 24.04.20, EDD- 31.01.21 presented at Apollo Hospitals International Ltd, Gandhinagar in emergency department at 12.30 am on 08.01.21 with complaints of severe dry cough & breathlessness since 2 days. She was a Known case of Rheumatic Heart Disease with Mitral Valve Replacement 10 years back. In initial 3 months of pregnancy patient was on Inj enoxaparine sodium 0.6 ml S/C twice daily then shifted to oral anticoagulants Tab acitrom 3 mg orally and continued till 20.12.20 . Thereafter she was restarted on Inj enoxaparine sodium 0.6 ml S/C twice daily till date. She was also on tab Digoxin 0.25 mg,5 days a week and tab Metoprolol XL 100 mg daily.

OBSTETRIC HISTORY
1st Full term Normal vaginal delivery, female child- 10 years, alive & healthy. 2nd – PreTerm Vaginal Delivery at 6 months,female child, baby died just after delivery, 4years back. Last delivery - 4years.

PAST HISTORY
History of Mitral valve thrombosis in past in February 2019 was managed medically.

ON EXAMINATION
Patient was thin built, weight-52 kg, Face- puffy, Pulse rate-100 / min, BP - 116/76 mmHg, Temperature- 98 F, SPO2- 91% on oxygen 6 litre/min, CVS-dull prosthetic closing click, mid diastolic apical murmur + , RS-RR :30/min, Bilateral Air Entry Present, tachypnea + Wheeze present +

PER ABDOMEN
Uterus 34 weeks, floating head ,Fetal heart sound + regular, uterus relaxed.

BIMANUAL EXAMINATION
Cervical os closed.

INVESTIGATIONS
on 08/01/21, CBC: HB- 12.7 gm%, WBC-17,072/ cumm . DC: N-81%, L-15%, M-02%, E- 02%, B-0%. Platelets-3,07,000/ cumm, PT(T)-13.6, (C)-12.3, INR-1.12, D. Dimer- 1.23 mcg/ml, S. Urea-25mg/dl, S. Creatinine-0.62 mg/dl, Total Bilirubin - 0.85mg/dl, Direct – 0.353 mg/dl, Indirect-0.492mg/dl, Blood group- A positive, Covid-19 RTPCR- Negative, HIV & HBsAg- Non reactive.
Electrocardiography (08.01.21) showed Sinus Tachycardia, Ventricular Heart Rate 150/min.
2D Echocardiography (08.01.21)showed Echogenic mass in prosthetic mitral valve suggestive of thrombus with reduced mobility of valve, peak gradiant across mitral valve- 35, LVEF : 55- 60%, Dilated left atrium, right atrium and right ventricle, moderate AR, moderate TR. Mild PAH, RVSP: 40 mmHg.
Ultrasound Obstetrics III trimester scan with Doppler study (08.01.21) showed single live intrauterine fetus , gestational age 33 weeks, placenta posterior grade II, fetal weight 2078 +/- 311 gms, Doppler study: Umbilical artery PI -1.32 above 95th percentile, Middle Cerebral Artery PI – 1.4 below 5th percentile, Cerebro placental ratio- 0.92,Both Uterine artery Doppler showed high resistance waveform with mean PI of 1.3, above 95th percentile, suggestive of late onset Foetal Growth Restriction.
Clinical Diagnosis of Gravida3, Para1+1, 37 weeks pregnancy with late onset fetal growth restriction with Prosthetic Mitral Valve Thrombosis in a known case of Rheumatic Heart Disease was made.

After multidisciplinary evaluation of available treatment options, as the patient was under New York Heart Association (NYHA) functional class II , decision was taken for thrombolysis & hence patient shifted to MICU. Casarean section was planned after thrombolysis, hence inj enoxaparine was stopped. She was managed with Inj Zostum 1.5 gm 12 hourly and Inj Gentamycin 1.2 gm I/v 6 houly, intravenous fluids, oxygen by mask at 4litres /min. , Inj furosemide 10 mg I/V 12 hourly,Tab Metoprolol XL 100mg twice daily, Tab digoxin 0.25 mg once a day was continued. Thrombolysis was done with Inj. Streptokinase-1.5 lakh international units bolus followed by Inj.streptokinase-1 lakh international units I/V given over 12 hours at the rate of 4ml/hour.

After completion of thrombolysis on 09.01.21 at 1.15pm, CTG was done, it was reactive & reassuring. CTG repeated after 4 hours and it was non reassuring showing decelerations and decreased baseline variability . In view of suspected foetal distress, decision was taken for high risk lower segment Caesarean Section. Patient was assessed by PT, aPTT and after normal findings patient was taken for surgery. 4 units of FFP, 3 units of cryoprecipitate were transfused prior to surgery.
Patient underwent High Risk Emergency Lower Segment Caesarean Section under GA on 08.01.21, Male Child, weight 2.21 Kg delivered at 8:21 pm.(figure1,2)
Oxytocin infusion (10 units/hr) was started post delivery to improve uterine contraction & facilitate placental delivery. Uterine contraction was assured and abdomen was closed with meticulous haemostasis. 2 units of PCV were given intra and postoperatively. (Figure3,4)

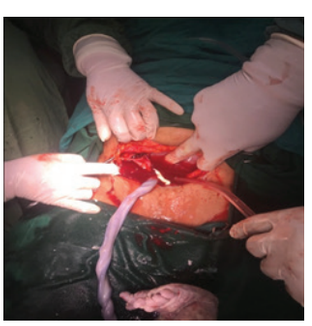
Post operatively she was again shifted to MICU for further care and management. Complete blood count on 09.01.21 showed HB- 10.2 gm%, WBC – 17,930/ cu.mm, DC: N-93%, L-04%, M-02%, E- 01%, B-0%. Platelets- 3,66,000/ cumm.
2 D ECHO on 09.01.21 showed marginal improvement in opening of Mitral Valve post thrombolysis, peak gradiant across mitral valve -20, LVEF: 60%, trivial AR, trivial TR, Trivial MR.
LMWH (inj enoxaparine) was restarted after 12 hours of surgery at the dose of 0.6 ml twice daily. Patient was managed medically with antibiotics, antacids, analgesics, Intravenous Fluids and other supportive care. Postoperatively Patient recovered well .
Dressing was done on 4th post operative day, wound healthy.Patient was bridged onto oral anticoagulation, counseled on contraception and was discharged in stable haemodynamic condition on 11.01.21 with healthy baby. She was advised to come for follow up after 7 days with CBC, PT, INR and Renal function test.

On follow up after 2 weeks, patient was healthy taking her regular cardiac medications.
At 4 months follow up , patient had no complaints. Her child was healthy, growing well, weight 4.2 Kg and was taking breast feed properly.

Our case highlights the need to review anticoagulation in pregnancy with care. Early referral to a tertiary hospital with both obstetric and cardiac surgical services is important because of the high risk of adverse events during pregnancy in women with prosthetic heart valves.

F.1: Caesarean Section – Delivery of baby

F. 2 : Caesarean Section - Baby delivered as vertex



F. 3 : Cord clamped and cut. Placenta within Uterus. No active bleeding

F. 4 : Uterus well contracted. Suturing of Uterus achieving proper haemostasis

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