“SIGNIFICANT FUNCTIONAL IMPROVEMENT IN A PREGNANT PATIENT WITH SEVERE PULMONARY HYPERTENSION AND MITRAL STENOSIS USING PERCUTANEOUS TRANSVENOUS MITRAL COMMISSUROTOMY (PTMC)”

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Background

- In developing countries, rheumatic heart disease remains a common cause for valvular heart disease in pregnant women, of which mitral stenosis (MS) is the commonest manifestation. Due to the hemodynamic changes in pregnancy, MS that was tolerated before pregnancy can become symptomatic as pregnancy progresses. Complications of MS in pregnancy include pulmonary hypertension (PH), pulmonary congestion, cardiac failure, cardioembolic phenomena and arrhythmias. The risks of preterm delivery, intrauterine growth restriction, maternal and fetal/ontal mortality and stillbirth are also raised significantly.

- Valve intervention prior to pregnancy is recommended in the European Society of Cardiology (ESC) and American Heart Association (AHA) guidelines. In the ESC guidelines, patients with moderate to severe MS are also counseled against getting pregnant. Nonetheless, for pregnant patients with severe MS with severe PH, improvements in functional class and successful pregnancies have been noted in literature and reinforce PTMC as the recommended intervention.

Case Report

We present a case of a 27-year-old female who presented to our center with progressive dyspnea. She was 26 weeks pregnant and was breathless at rest (NYHA IV).

During investigation for the dyspnea, a transthoracic echocardiogram (TTE) was performed, which showed severe pulmonary hypertension (PH) with pulmonary artery systolic pressure (PASP) of 104 mmHg and severe mitral stenosis (MS) with valve area by planimetry of 0.53 cm².

A percutaneous transvenous mitral commissurotomy (PTMC) was performed which improved the valve area to 1.39 cm². Within 24 hours of the procedure, the patient’s breathing had improved significantly to the point she was able to mobilize around the ward (NYHA III). Her symptoms continued to improve to NYHA II and her PASP improved to 40 mmHg. She delivered a healthy male baby at 35 weeks via a Caesarean section. PASP on a follow up TTE 4 months later was 35 mmHg.

Electrocardiogram and Echocardiography

Percutaneous Transvenous Mitral Commissurotomy

Transeptal puncture with the Brockenbrough needle

The Inoue balloon inflated across the mitral valve

Conclusion

PH in pregnancy can cause a multitude of maternal and fetal complications. PTMC is an acceptable and indicated procedure for managing symptomatic pregnant patients with severe MS and severe PH and is recommended in both European and American guidelines.