

## **DYSPNEA AFTER DELIVERY: 3D ECHOCARDIOGRAPHIC DIAGNOSIS OF RHEUMATIC MITRAL STENOSIS UNMASKED BY PERIPARTUM CARDIOMYOPATHY**

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**Clinical Presentation:** A 36-year-old woman from Latin America presented with dyspnea five days after cesarean section for placental abruption. Exam revealed severe hypertension, hypervolemia, and hypoxemia, concerning for new onset heart failure and peripartum cardiomyopathy (PPCM). She was started on magnesium and nitroglycerine drips, bilevel, and intravenous diuresis with furosemide. Transthoracic echocardiogram (TTE) showed newly diagnosed chronic rheumatic heart disease (RHD).

**Imaging Findings:** Please see figure below for complete details. TTE revealed ejection fraction of 40%, diastolic dysfunction, left atrial enlargement with elevated pressures, thickened mitral valve (MV) leaflets, diastolic doming of A2, limited mobility of A1, P1, and P2, with reduced MV area approximation, as well as peak and mean gradients consistent with mild-to-moderate MS of RHD.

**Role of Imaging in Patient Care:** Given the concern for concurrent PPCM, 3D-TTE (Figure 1) was performed which showed chronic RHD. Given these findings, intravenous diuresis with furosemide, afterload reduction with enalapril and spironolactone, and rate control with carvedilol were carefully initiated with improvement in respiratory and volume status. Intramuscular penicillin G was started for chronic RHD prophylaxis against group A streptococcus (GAS). After medical optimization, she was discharged home safely with her newborn with plans for tubal ligation given PPCM.

**Discussion:** Pregnancy causes increased cardiac output and circulatory volume. PPCM is a form of acute systolic heart failure associated with increased morbidity and mortality. Obstructive valvular lesions like MS, including MS from RHD, are preload dependent, with gradients increasing with rises in cardiac output. Therefore, valvulopathy and PPCM can have significant impact during pregnancy. As such, comprehensive echocardiographic valve analysis is crucial to tailoring short-and long-term management strategies.