

Postpartum Cardiogenic Pulmonary Edema: The Initial Presentation of an Underlying Rheumatic Heart Disease

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Dear Sir,

A 28-year-old married female was admitted to the intensive care unit with complaints of sudden onset of shortness of breath and streaky hemoptysis mixed with frothy sputum (2–3 episodes) since last 6 hours. She had undergone a cesarean section after which her symptoms started. On admission, vitals revealed tachycardia, tachypnoea, was normotensive, and falling oxygen saturation (SpO₂-70% on room air). Arterial blood gases (ABG) showed acute respiratory alkalosis and hypoxemic (Type I) respiratory failure. On respiratory system auscultation, bilateral end-inspiratory fine crepitations were heard. Chest radiograph revealed cardiomegaly and bilateral alveolar opacities. Computerized tomography (CT) of the thorax disclosed bilateral parenchymal consolidations, cardiomegaly with enlarged left atrium, and dilated pulmonary arteries. Postpartum cardiogenic pulmonary edema due to valvular heart disease (mitral valve stenosis) was suspected. Electrocardiogram (ECG) showed sinus tachycardia and left atrial abnormality. Her NT pro-BNP was raised (7,852 pg/mL). Doppler echocardiogram confirmed rheumatic heart disease (RHD) with severe mitral valve stenosis (valve area 0.7 cm²) and severe pulmonary arterial hypertension (pulmonary artery systolic pressure—55 mm Hg).

She had regular antenatal visits and was asymptomatic in the antenatal period. There was no previous history of any underlying cardiac illness. She was propped up (high Fowler position), initiated on continuous positive airway pressure (CPAP) therapy, nitroglycerin infusion, intravenous furosemide, and other supportive treatments. Her dyspnea subsided, vitals normalized, and was weaned off PAP therapy. Chest radiology repeated after 4 days showed almost complete resolution of the bilateral alveolar opacities. Repeat NT PRO-BNP was also within normal limits (275 pg/mL). She was strictly advised to avoid pregnancy, put on inj. Benzylpenicillin (I.M) for RHD, and referred for valvuloplasty/valve replacement.

Acute pulmonary edema of postpartum is a medical emergency affecting 0.08% to 1.5% of women.¹ Physiological changes in the immediate postpartum period include a sudden increase in cardiac output, which may be not tolerated by those with underlying cardiac disease and leads to decompensated heart failure. Among cardiovascular disease, RHD is one of the most prevalent diseases in pregnancy, particularly in the developing nations and leads to severe morbidity. Further, a few patients have subclinical RHD and is usually missed in the antenatal period.² RHD is the most common cause of mitral valve stenosis, although nearly half of the patients

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would have had a mild rheumatic fever without the typical articular manifestations. Besides, a negative history of rheumatic fever does not rule out RHD. Other risk factors for postpartum pulmonary edema include preeclampsia/ eclampsia in the antenatal period, tocolytics use to prevent premature delivery, and iatrogenic fluid overload.¹

Detecting underlying heart disease in patients with acute pulmonary edema is crucial, and Doppler echocardiogram is the investigation of choice. Among valvular heart diseases, mitral valve stenosis is less well tolerated in pregnancy than regurgitant lesions.³ This may be attributed to the impaired diastolic filling leading to increased pulmonary venous pressures and eventually diastolic heart failure.⁴ Further, heart failure due to acquired valvular heart disease diagnosed the first time during pregnancy and postpartum are associated with poor outcomes in comparison with congenital heart diseases.⁵ Definitive interventions such as balloon valvuloplasty or valve replacement should be considered before planning pregnancy in symptomatic mild to moderate or asymptomatic severe mitral valve stenosis.⁶

Our report highlights an uncommon life-threatening presentation of an asymptomatic RHD. Timely diagnosis and appropriate management confer favorable prognosis. Doppler echocardiogram should be an integral part of the antenatal evaluation to prevent maternal and fetal complications in the perinatal period.

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