

Undiagnosed Peripartum Cardiomyopathy Presenting as Cardiac Arrest

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BACKGROUND

Peripartum cardiomyopathy (PPCM) is a rare but serious condition which impacts 1 in 3,500 live births in the US, typically presenting in late pregnancy or within five months postpartum in women without prior cardiac disease. Risk factors include advanced maternal age, multiparity, preeclampsia, gestational hypertension, and multigestational pregnancies. Symptoms including fatigue, dyspnea, peripheral edema, and orthopnea can mimic normal peripartum changes, often delaying diagnosis. PPCM is often diagnosed with an echocardiogram showing a reduced ejection fraction (<45%). With a mortality as high as 20-50%, missing a diagnosis of PPCM can have serious implications including arrhythmias, cardiogenic shock, thromboembolic events, and even sudden cardiac death.

CASE DESCRIPTION

A 24-year-old G2P1 female with a previous uncomplicated vaginal delivery, who presented for induction of labor. Past medical history is significant for asthma, anemia requiring transfusion 2 months prior, and a recent visit to the ED one week prior for dry cough and mild shortness of breath where she was diagnosed with Influenza A. Following a rapid delivery, patient was administered 5ml of 1% lidocaine for repair of 2nd degree perineal laceration. Anesthesia team was called for sudden onset seizure-like movements.

- Patient evaluated in decerebrate movement with agonal breathing
- Pulseless ventricular tachycardia, ACLS protocol initiated
- Total 2 shocks, 4 doses of epinephrine, 2 doses of amiodarone, 1 mg Mg, 1g Ca gluconate, and 2 amps bicarb
- ROSC achieved 10 minutes following the start of CPR, transported to ICU
- Started on amiodarone, dobutamine, and norepinephrine drips
- Initial Echo showed EF <30%, mild diastolic dysfunction
- Next day Echo showed improved EF 40-49%
- Patient extubated the following day and weaned off pressors
- Transitioned to oral amiodarone and started on GDMT
- Followed by cardiology with improvement in EF over the next several months
- Advised against further pregnancies

DIAGNOSTICS

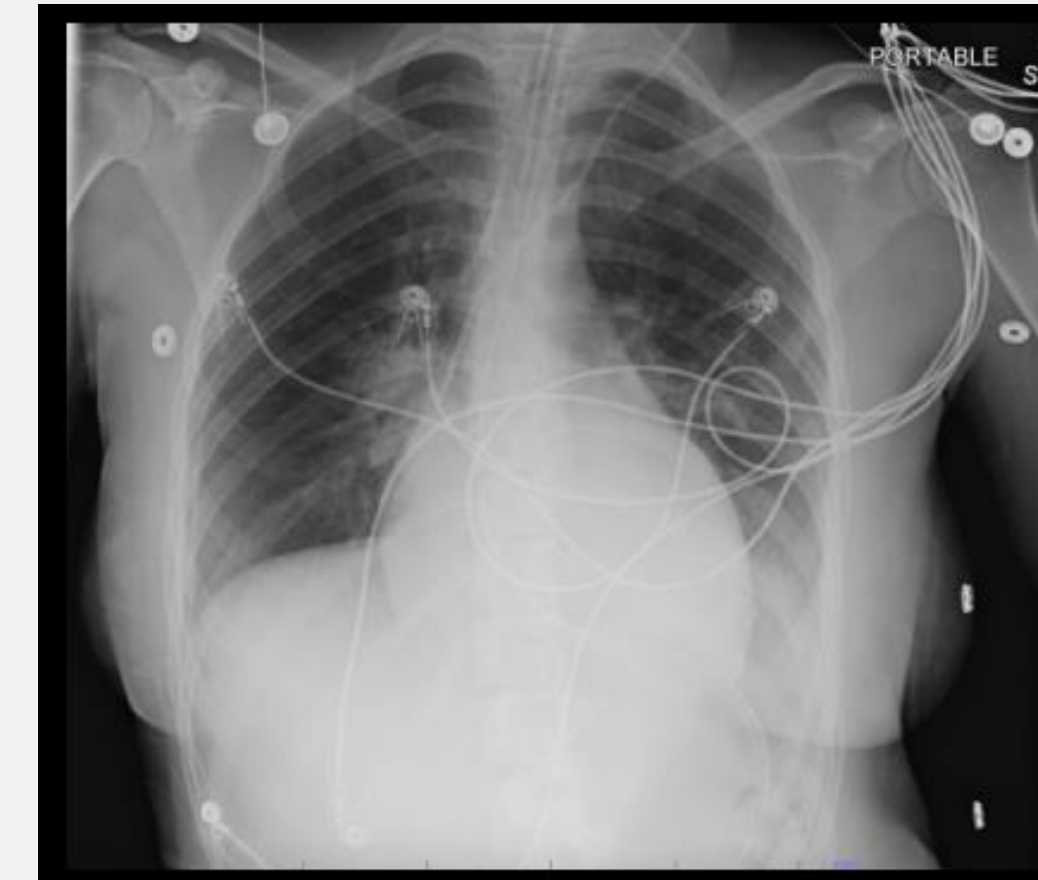


Image 1: CXR bilateral infiltrates



Image 2: CTA Chest negative for PE, however cardiomegaly and bilateral infiltrates present



Image 3: Initial Echocardiogram showing severely reduced EF < 30%

DISCUSSION

This case highlights the complex anesthetic considerations in the perioperative obstetric setting. Early identification and treatment of PPCM is crucial to reduce maternal morbidity. Adequate preoperative evaluation with a thorough patient history, BNP, Troponin, EKG, and Echocardiogram is essential. An epidural may be beneficial in afterload reduction and gradually mitigating the sympathetic surge associated with labor pain, however it would be essential to carefully titrate to avoid hypotension in patients with a limited cardiac reserve. The rapid sympathetic blockade from spinal anesthesia could be detrimental. General anesthesia with optional invasive blood pressure monitoring is reserved for emergencies, due to high risks of myocardial depression and sympathetic stimulation. Additionally, vaginal delivery in an operative setting would allow for adequate monitoring and immediate intervention if needed.

This patient had limited risk factors for PPCM (African descent, multiparous). Two months prior to delivery, she presented with lightheadedness, dizziness, and dyspnea and was given 2 units pRBCs for a Hgb of 8.3. It is possible that her symptoms were acute manifestations of PPCM but were unfortunately dismissed as symptomatic anemia. Viral myocarditis secondary to Influenza infection 1 week prior to delivery was also considered as a potential etiology. Other differentials included amniotic fluid embolism due to the rapid progression of labor, and local anesthetic systemic toxicity (LAST).

In addition to the primary cardiomyopathy, contributing factors include the hemodynamic stress of autotransfusion with increase in preload, blood volume, and cardiac output, especially at the time of delivery. Hormonal increases during pregnancy also can cause vascular and myocardial dysfunction. In PPCM, heart function can improve in 3-6 months however recurrence is likely, therefore patients are often advised against further pregnancies.

Because dyspnea in pregnancy is often attributed to normal physiologic changes, it is essential to thoroughly evaluate for alternative cardiopulmonary causes to avoid missing life-threatening conditions such as PPCM.

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