New-onset Peripartum Cardiomyopathy with Focal Pulmonary Edema Masked as Pneumonia Leads to Acute Decompensation in Labor Necessitating Urgent Cesarean Delivery

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Peripartum Cardiomyopathy: New-onset systolic heart failure in pregnancy without prior cardiac disease or identifiable cause

Incidence and Risk Factors

Incidence: 1/4000 (U.S.); up to 1/100 (developing regions)[1]
Risk factors: African descent, age>25, preeclampsia/eclampsia, multiple gestation, grand multiparity, cocaine use, prolonged tocolysis[1]

Clinical Presentation and Differential

Clinical Presentation: dyspnea, fatigue, cough, PND, edema, hemoptysis[2,3]
Differential: Takotsubo cardiomyopathy, arrhythmia-induced cardiomyopathy, preeclampsia/eclampsia-related cardiac dysfunction, amniotic fluid embolism[2,3]

Diagnostic Criteria (NHLBI/ESC)

- HF at the end of pregnancy or early postpartum
- No prior heart disease or alternative cause[1,4]
- ECHO evidence: LVEF<45%, FS<30% (NHLBI), LV dilation (NHLBI) [1,4]

Expanded: early PPCM (late pregnancy), late (6-12 months postpartum)[1]

Management

Delivery
CHF Treatments: sodium restriction, GDMT
Extremis: inotropes, mechanical support (ECMO, VAD, ICD), heart transplant.[2,3]

1 Heart Fail Rev. 2024;29(6):1261–1278
2 Curr Heart Fail Rep.2018;15(5);297-306
3 Trends Cardiovasc Med. 2019;23(3):164-173
4 Medicine (Baltimore). 2018;97(31);e11516

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Clinical Presentation: 39-year-old G4P2 with HTN, GDM, asthma presents at 37w gestation with mild dyspnea on exertion

Initial Workup and Intrapartum Course

- CXR: Bilateral interstitial opacities reflecting pulmonary edema
- CTPE (Right): Focal ground glass opacities concerning for atypical PNA
- Started on amoxicillin/azithromycin
- ECHO: Global hypokinesis, LVEF 31%, Moderate MR

Decision to proceed with induction of labor given mild symptoms

- Contraction pain managed with neuraxial analgesia
- Acute decompensation and hemodynamic instability → norepinephrine gtt
- Worsening pulmonary edema → Initiation of diuretics

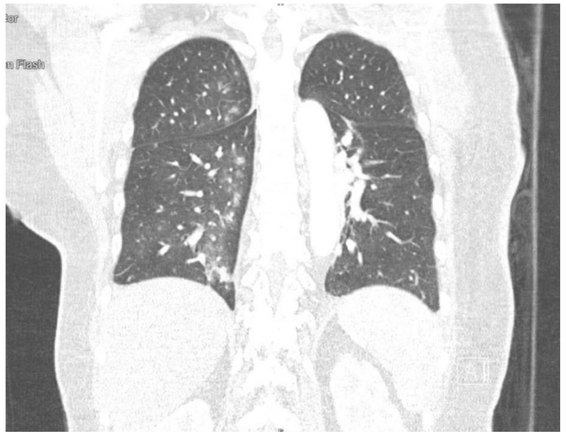
Maternal intolerance of labor induction remote from delivery, decision to proceed with cesarean section under carefully titrated neuraxial anesthesia

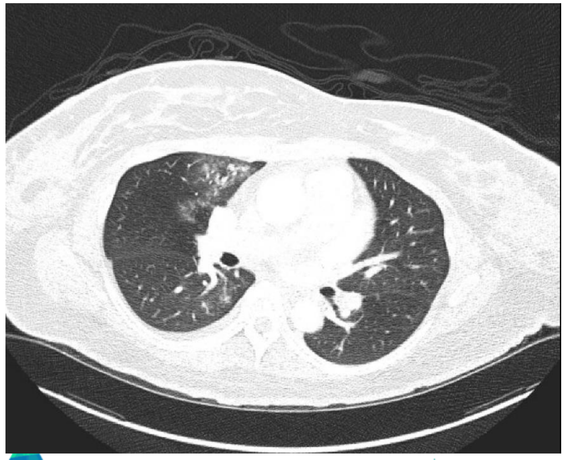
- Epi + Dobutamine for vasoactive support
- Delivery of vigorous neonate with APGAR 8 (1min) and 8 (5min)
- Ventricular bigeminy throughout case into postpartum period

Postpartum

CVICU Admission, diuresis, euglycemic DKA

- ECHO: LVEF 29%, Severe MR w/ flow reversal in right pulmonary vein
- Discharged on GDMT (spironolactone, sacubitril/valsartan, empagliflozin, furosemide, carvedilol)
- LifeVest, Ziopatch





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Teaching Points

In This Case

- CTPE with findings of pneumonia due to focal nature, despite being pulmonary edema on CXR
- Acute MR resulted in flow reversal into the right pulmonary vein creating focal opacities
- Labor analgesia with plain epidural (institutional standard dosing) unmasked hemodynamic instability
- Delivery resulted in rapid discontinuation of support, however EF remained low requiring GDMT, LifeVest, Ziopatch

For Treatment of PPCM

- While most patients diagnosed in first trimester, presentation can be as late as delivery
- Even low dose epidural can unmask a well compensated hemodynamic instability
- Delivery often leads to rapid improvement of symptoms
- While most patients fully recover, chronic cardiac pathology is possible