

Management of Acute Decompensated Heart Failure in a Patient with Repaired Congenital Heart Disease



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Peripartum systolic heart failure in patients with underlying congenital heart disease presents unique management challenges.



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HPI

- 38-year-old G4P2012
- History of repaired congenital heart defect (double outlet right ventricle with multiple VSDs status post PA banding, biventricular repair and subsequent transcatheter VSD closure), dilated aortic root, atrial flutter status post catheter ablation.
- Presented at 22 weeks' gestational age with NYHA Class III symptoms during pregnancy.
- During this pregnancy, serial echocardiograms showed a rapid deterioration of cardiac function (EF 35-40% to 20-35%).

Surveillance and Consultation

- Ppregnancy continuation versus termination ?--Patient opted to proceed
- Balancing fetal survival with the patient's health.
- She was admitted for medical optimization.
- The team chose early delivery at 25 weeks and 3 days, following daily monitoring and multidisciplinary meetings.
- Antenatal Interventions:
 - Corticosteroids administration
 - Magnesium sulfate therapy
 - Hemodynamic optimization with diuretics

Perioperative Management

- **Procedure Setup:**
 - Cesarean section in cardiac OR
 - ECMO team on standby with femoral vessel cannulation
- **Monitoring & Anesthesia:**
 - Arterial line and Swan-Ganz catheter placement
 - Carefully titrated epidural technique
- **Clinical Outcomes:**
 - PA pressure decreased from >70 mmHg to 50s post-delivery
 - Neonate: Apgar scores 9 at both 1 and 5 minutes. Infant transferred to NICU for continued care

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Discussion

- Cardiac adaptation unpredictable in repaired congenital heart defects [1,2]
- Early detection of deterioration through close surveillance
- Multidisciplinary planning essential for risk mitigation
- Early delivery (25 weeks) balanced maternal cardiac vs. fetal risks
- Invasive monitoring provided critical hemodynamic data [3]
- Carefully titrated epidural ensured safe delivery
- ECMO standby as crucial safety measure [4]

1. Gu, J., et al., npj Cardiovascular Health, 2024. **1**(1).
2. Niwa, K., Korean Circulation Journal, 2018. **48**(4).
3. Wong, M.J., et al., Anesthesia & Analgesia, 2022.
4. Meng, M.-L., et al., Circulation, 2023. **147**(11).

