

# Anesthetic Management for Cesarean Delivery in a Parturient with Multiple Comorbidities Including Severe Pulmonary Hypertension, Sarcoidosis, and Rheumatic Heart Disease



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## Background

- The anesthetic management of parturients with complex cardiopulmonary disease presents significant challenges.
- When these conditions coexist, as in cases with pulmonary hypertension, sarcoidosis, and valvular heart disease, the complexity increases exponentially.
- Successful management requires careful consideration of the physiological changes of pregnancy superimposed on the underlying pathology.
- Meticulous planning and monitoring are essential components of care.

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## Patient Profile

**40-year-old, G5P1**

**Complex Comorbidities**

• **Pulmonary:**

- Stage III pulmonary sarcoidosis with pulmonary fibrosis
- Severe pulmonary hypertension (mixed groups II, III, V)
- Estimated PA pressure: 76 mmHg
- Frequent exacerbations

• **Cardiac:**

- Severe rheumatic mitral stenosis
- Moderate-to-severe mitral regurgitation
- Heart failure with preserved ejection fraction

• **Additional:**

- Chronic hypertension
- Obesity (BMI 42)
- Obstructive sleep apnea on CPAP
- Newly diagnosed Type 2 diabetes mellitus

## Pregnancy Course

**Maternal Cardiovascular Risk**

- Classified as WHO class IV (highest risk)

**Pregnancy Course and Challenges**

- Multiple ICU admissions for respiratory failure (one requiring emergent intubation and prone positioning)
- Admitted at 21 weeks for worsening dyspnea and medical optimization
- Despite aggressive management (diuretics, fluid management), continued deterioration
- Preterm delivery at 30 weeks + 5 days for maternal stabilization.

## Anesthesia Approach

- Goal to avoid general anesthesia due to high risks from pulmonary hypertension and cardiac disease
- Neuraxial anesthesia (slowly titrated epidural) with BiPAP support
- Preoperative arterial and central venous line placement
- Careful fluid balance, prevention of tachycardia, and avoidance of medications that could worsen pulmonary hypertension
- Focused cardiac ultrasound used for real-time hemodynamic and volume status monitoring

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## Discussion

- Pregnancy in patients with multiple cardiopulmonary comorbidities presents significant challenges for anesthetic management [1].
- The physiological changes of pregnancy can exacerbate underlying conditions, particularly in patients with pulmonary hypertension, where mortality rates remain significantly elevated [2].
- When these conditions are combined with systemic diseases such as sarcoidosis, respiratory failure and structural heart disease, the complexity of care increases substantially.
- This case report describes the successful anesthetic management of a parturient with an unusually complex combination of high-risk conditions. The successful outcome was facilitated by careful pre-operative optimization, appropriate monitoring selection, and judicious anesthetic management that prioritized hemodynamic stability while avoiding triggers for pulmonary hypertensive crisis.