

Regional Anesthesia with Extracorporeal Membrane Oxygenation (ECMO) Backup and Remifentanyl Infusion for Cesarean Delivery and Mediastinal Biopsy in a Parturient with a Large Anterior Mediastinal Mass

Vinay Khare, MD & Paige M. Keasler, DO

Background:

Anterior Mediastinal Mass in Pregnancy

Rare but high-risk anesthetic concern for airway collapse and cardiovascular compromise due to:

- Tracheobronchial compression
- Pulmonary artery / SVC compression

Pregnancy increases risk via
↓FRC, ↑O₂ demand, airway
edema, and aortocaval
compression

Anesthetic Challenges

- General anesthesia → risk of catastrophic collapse on induction
- Positive pressure ventilation may worsen vascular compression

Case Presentation:

Patient:

- 32yo G1P0 at 34+4 weeks for CD
- Primary mediastinal large B-cell lymphoma

Intraoperative Management:

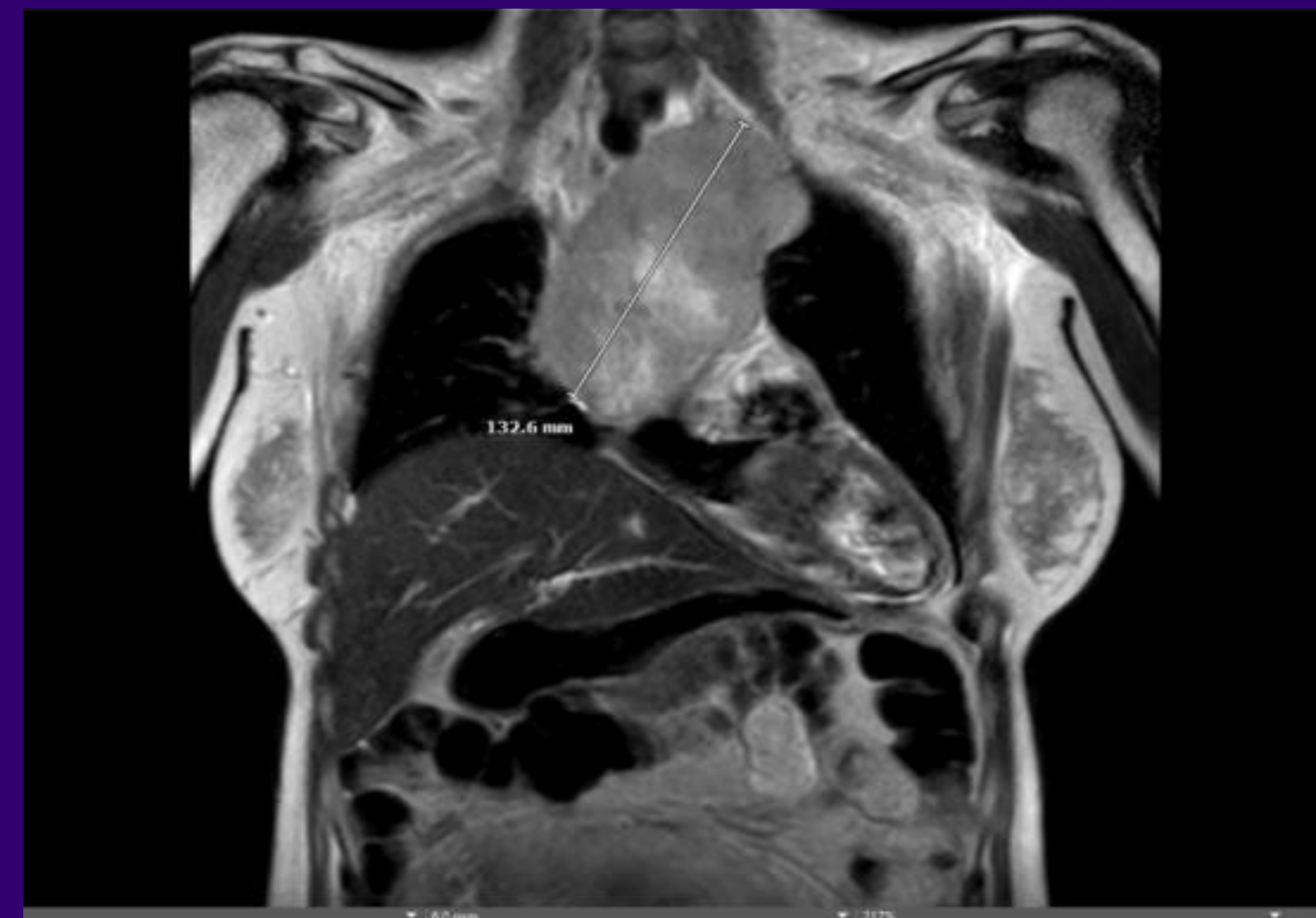
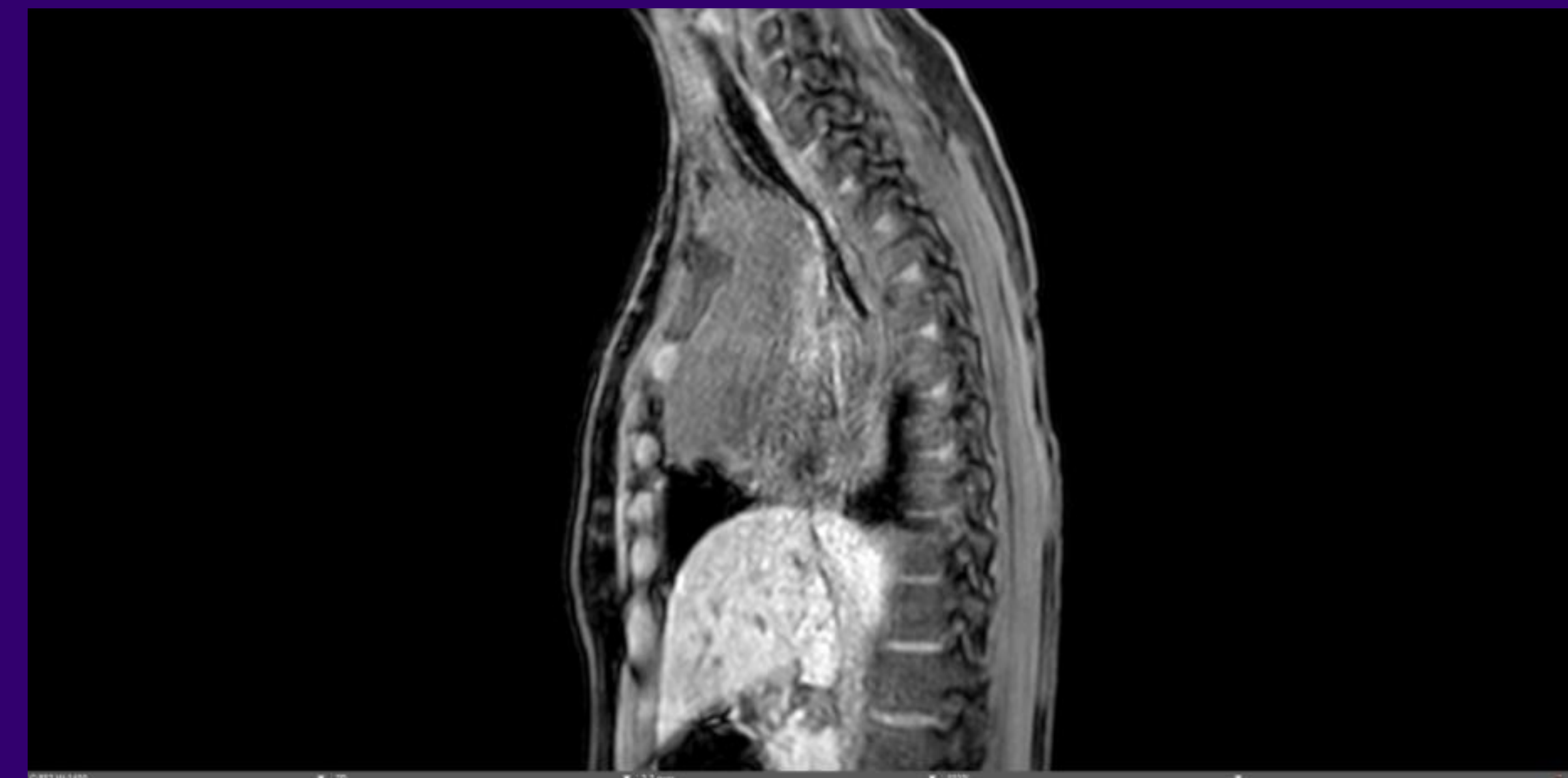
- Semi-upright positioning
- Arterial line and large-bore IV access
- **Combined spinal–epidural (low-dose spinal)**
- **Remifentanyl infusion** - anxiolysis and preserved spontaneous breathing

Rescue strategies ready:

- Rigid bronchoscopy
- ECMO standby with femoral cannulation

Course:

- Stable hemodynamics and oxygenation
- Uneventful cesarean delivery
- Sequential mediastinal biopsy
- PACU monitoring with delayed anticoagulation restart



Teaching Points:



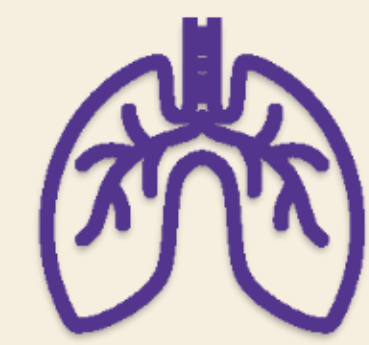
Anticipatory Planning is Critical

High-risk patients require **structured multidisciplinary approach**
Predefined rescue strategies improve outcomes



Prefer Neuraxial Techniques

CSE allows:
• Avoidance of GA risks
• Titration of block
Low-dose spinal reduces hemodynamic instability



Maintain Spontaneous Ventilation

Prevents airway collapse and V/Q mismatch
Sedation (e.g., remifentanyl) should be carefully titrated



ECMO as Rescue Strategy

Consider in **high-risk airway/vascular compression (>50%)**
Pre-emptive femoral access allows rapid deployment



Positioning

Semi-upright / lateral positions improve symptoms
Always identify a “rescue position”