Anesthesia for Anterior Mediastinal Mass in Pregnancy: Anesthetic Management and Considerations

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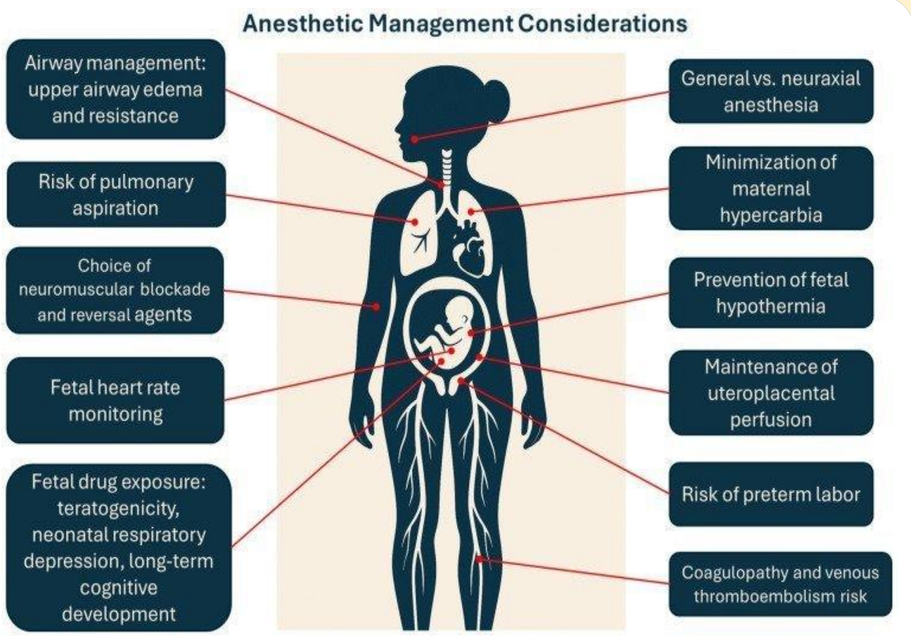
Introduction



- Non-obstetric surgery during pregnancy occurs in <1% pregnancies
  - Maternal outcomes: similar to non-pregnant women:
    - No difference in 30-day mortality rates (0.4 vs 0.3%)
    - No difference in overall morbidity rates (6.6 vs 7.4%)
- Anesthesic management requires special considerations given physiologic changes in pregnancy
- Anesthesia for anterior mediastinal mass surgery risks include:
  - Potential for airway and hemodynamic collapse on induction
  - Mediastinal Mass Syndrome

We present perioperative management of a gravid woman with an anterior mediastinal mass presenting for lymph node biopsy.

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Case Presentation

24 year old G4P3 at 21w2d presented for excisional supraclavicular lymph node biopsy. The patient was found to have anterior mediastinal mass after 1 month of progressive dyspnea on exertion, chest pain, and tachycardia.

Pre-op:

- VS: Normotensive, tachycardic 110-120s, SpO2 94-96% on room air
- On exam: Dyspnea with speaking, able to lie flat
- Transthoracic echo: Small pericardial effusion and evidence of early tamponade
- CT: Anterior mediastinal mass (7x4x7cm), lymphadenopathy, and large right pleural effusion
- Anesthesia team, surgeon, and patient in agreement with plan for awake fiberoptic intubation

Intra-op:

- Pre-oxygenation via HFNC
- Induction: 2mg midazolam, 50mcg fentanyl, remifentanil infusion at 0.1 mcg/kg/min
- Airway topicalized with 3ml 4% lidocaine, Williams airway coated in lidocaine jelly introduced
- 6.0 ETT placed atraumatically with flexible fiberoptic scope
  - Alert and interactive throughout intubation
- Maintenance with sevoflourane
- No paralysis, remained spontaneously breathing on pressure support 10/5 throughout procedure
- Pre- and post-FHR remained stable

Post-op:

- Final diagnosis: T-cell Acute Lymphoblastic Leukemia
- Received chemotherapy, complete remission after induction chemotherapy
- Follow up imaging:
  - CXR: resolution of pleural effusion, significantly improved mediastinal adenopathy
  - TTE: no evidence of tamponade/constrictive physiology
- Following treatment, she underwent an uneventful vaginal delivery

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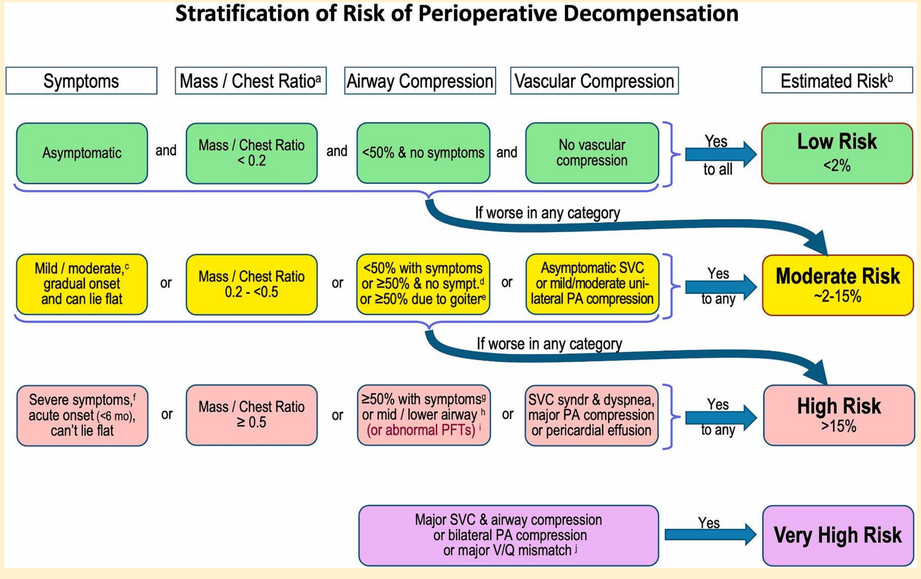
Discussion & Key Points

- Managing pregnant patients undergoing non-obstetric surgery requires adjustments for physiologic changes in pregnancy: prioritizing uteroplacental perfusion and oxygen delivery and minimizing fetal drug exposure.
- Anesthetic concerns for anterior mediastinal mass are equally important.
  - Airway and hemodynamic collapse can occur with the induction of anesthesia and use of neuromuscular blockade medications.
  - Mass effect and positive pressure ventilation can compromise venous return, which is further reduced on induction.
  - Pericardial effusions can exacerbate preload reduction.
- Given synergistic complexities bestowed by pregnancy and anterior mediastinal masses, these patients should be evaluated and treated with a bespoke anesthetic plan.
  - Risk stratification for perioperative decompensation should be considered when determining anesthetic technique.
- Other anesthetic techniques include: local +/- light sedation, regional anesthesia, supraglottic airway and asleep fiberoptic intubation.
  - For high-risk cases, awake fiberoptic intubation can be a safe option for anesthetic management.



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