

Multidisciplinary Anesthetic Management of a Cesarean Delivery in a Patient with Sickle Cell Disease, Cirrhosis, Hepatopulmonary Syndrome, and Factor V Leiden on Therapeutic Anticoagulation



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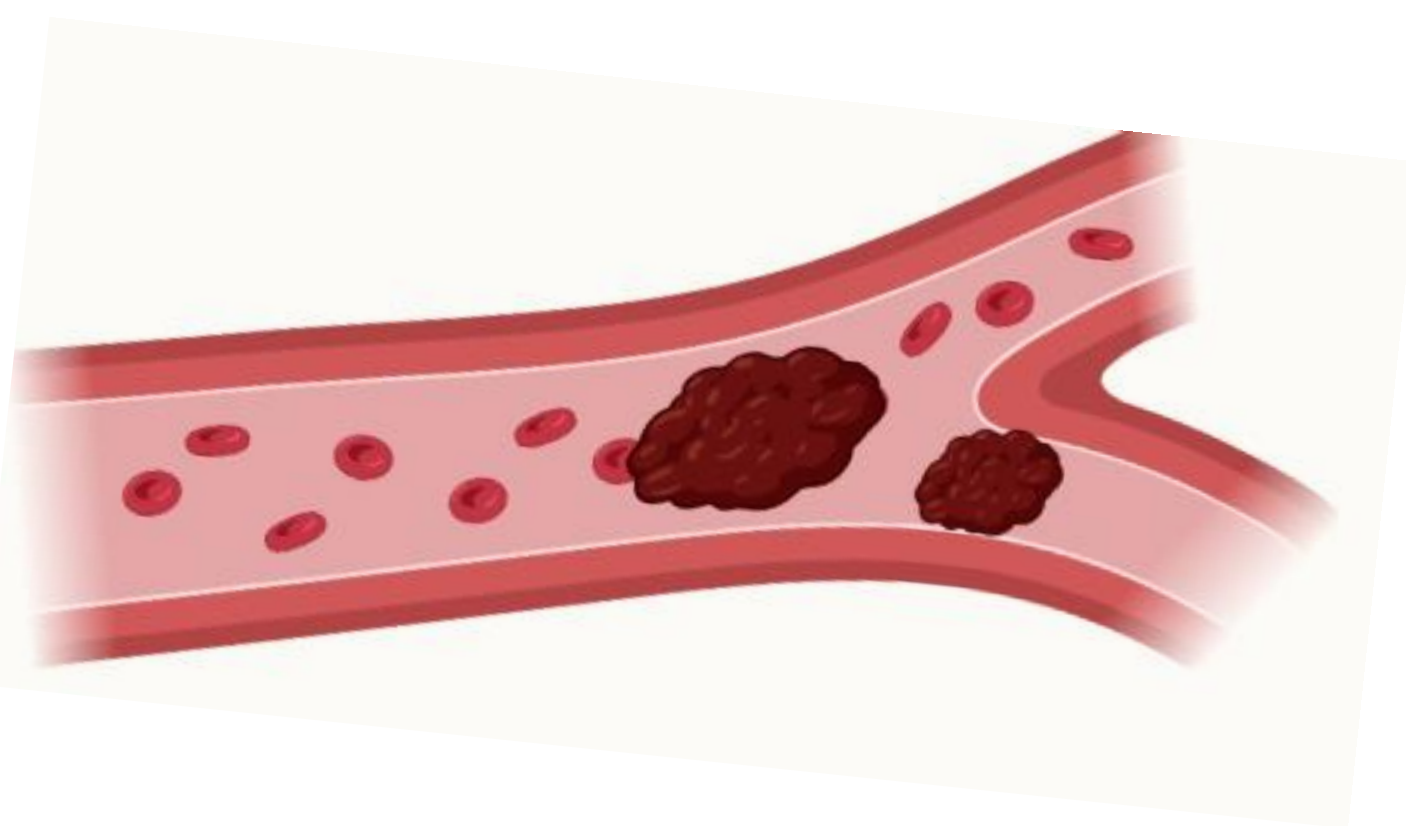
Learning Objective: Examine the complexities of anesthetic decision-making in a pregnant patient with overlapping hematologic, hepatic, and pulmonary pathologies, and chronic anticoagulation, with a focus on the timing of neuraxial anesthesia.

Case Description

A 42-year-old G2P1001 woman with Sickle Cell Hb O Arab Disease, cirrhosis secondary to sickle hepatopathy, hepatopulmonary syndrome (HPS) requiring home oxygen at 2 L/min beginning at 20 weeks, and Factor V Leiden with multiple DVT history presented at 32 weeks 2 days for prolonged monitoring due to non-reassuring fetal tracings and deceleration at her outpatient visit. Her multiple comorbidities each introduce unique perioperative risks that need to be weighed:

- Hepatopulmonary syndrome (with baseline oxygen requirements): increased risk of hypoxemia, which can be worsened by anesthetic choice or fluid shifts; evidence for optimal management is limited in the parturient population.
- Liver cirrhosis: increased risk of hemorrhage, hepatic decompensation, increased maternal and fetal mortality, poor wound healing, and infection
- Sickle Cell: increased risk of anemia, vaso-occlusive crisis, thrombotic events
- History of Factor V Leiden (hx of DVTs on anticoagulation): increased risk of thrombotic events and requires careful timing of neuraxial anesthesia.

A multidisciplinary meeting involving various teams took place at 32 weeks' gestation to guide planning. Teams included were: OB anesthesia, obstetrics, hematology, cardiology, and pulmonology



Anesthetic Plan & Outcome

Preoperative recommendations (from the multidisciplinary consultation):

- Cesarean delivery due to breech positioning
- Hold enoxaparin for 24 hours prior to neuraxial placement
- Plan early epidural placement
- Two large-bore peripheral IV
- Avoid excessive fluid administration

- Use the left arm for blood pressure monitoring due to right radial vein thrombosis, ClearSight non-invasive blood pressure monitoring

Anesthetic technique:

- Combined spinal-epidural (CSE) placed at the L2–L3 interspace
- Intrathecal medications included:
 - 1.2 mL of 0.75% bupivacaine
 - 15 mcg fentanyl
 - 100 mcg morphine
- Epidural medications:
 - Lidocaine 2%, 30 mg loading dose and an additional 20 mg throughout
 - Cholorprocaine 3%, 90 mg towards the end of the case

Intraoperative course:

- The patient remained hemodynamically stable. Remained on 2L NC. Received 50 mcg of IV fentanyl and 2 mg of IV morphine with closure. Received 20 mcg of precedex for anxiety after delivery.

Postoperative course:

- Anticoagulation was restarted 24 hours after neuraxial placement.

The patient recovered well and did not require additional supplemental oxygen postoperatively.

Case Discussion

- Successful anesthetic management relied on a multidisciplinary team, including anesthesiology, obstetrics, maternal-fetal medicine, hematology, and pulmonary specialists.
- Sickle cell disease increases risk for infection, thromboembolic events, and perioperative vaso-occlusive crisis during delivery.
- HPS posed a risk of worsening hypoxemia, and given its rarity in pregnancy, optimal management is poorly defined; close oxygenation monitoring was essential.
- Chronic anticoagulation required precise timing to balance bleeding and thrombosis risk during neuraxial placement.
- A combined spinal-epidural technique allowed for a lower intrathecal bupivacaine dose, minimizing hemodynamic changes and reducing the need for general anesthesia in a patient with limited pulmonary reserve, while preserving effective analgesia.

Conclusion

This case demonstrates that neuraxial anesthesia can be safely performed in medically complex parturients through:

- Multidisciplinary planning
- Careful coordination of anticoagulation timing
- Individualized anesthetic technique selection

Sources

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