Anesthetic Considerations in a Parturient with Pseudocholinesterase Deficiency

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Background:

- Pseudocholinesterase deficiency (PD) is a rare genetic condition that impairs the metabolism of ester-based local anesthetic agents and succinylcholine, leading to prolonged drug effects

Case Presentation:

- 35 year old G2P0 female at 39 weeks gestation who presented for IOL due to advanced maternal age
- Medical history significant for homozygous PD
- Epidural analgesia was initiated for labor with 0.2% Ropivacaine infusion in standard dosing
- Despite initial efforts, the patient met criteria for failed IOL and proceeded to a non-urgent cesarean delivery (CD)
- Anesthesiology team chose 2% Lidocaine (amide-based) with 1:200k epinephrine and 1 mEq/mL sodium bicarbonate for surgical epidural dosing
- Epidural was appropriately dosed after 20 mL of mixture and the case concluded uneventfully
- Epidural block wore off within 4 hours of case conclusion

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Discussion:

- Succinylcholine and 3-chloroprocaine, commonly used agents in OB can lead to significant complications
  - Prolonged intubations
    - Up to 2 hours if heterozygous, up to 4-8 hours if homozygous (vs. 3-5 minutes)
  - Extended epidural effects
    - Up to 3 hours (vs. 45-60 minutes)
- Rocuronium, a non-depolarizing NMBA with hepatic metabolism should be the alternative in the event of an RSI
  - Caution with reversal with Sugammadex due to concerns about interference with establishment of lactation and drug exposure via breastmilk
- Remifentanil is another alternative for rapid vocal cord relaxation to facilitate intubation

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Emergency Planning:

- Ensure close monitoring of FHT to avoid delays in communication
- Perform epidural rounds with level checks q4-6 hours
- Utilize DPE or CSE techniques to increase chances of successful epidural conversion to CD and avoidance of GETA
- Lidocaine, rocuronium, and remifentanil can be alternatively used in the appropriate clinical context
  - Present additional challenges such as slower onset, the need for reversal, and non-optimal intubating conditions