NEUROLOGICAL COMPROMISE FROM EPIDURAL FLUID AND GAS COLLECTION MIMICKING A SPINAL HEMATOMA FOLLOWING TECHNICALLY DIFFICULT EPIDURAL PLACEMENT: A CASE STUDY

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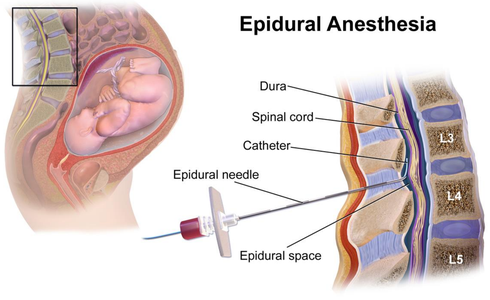
"Making Waves" 25th Annual Pain Medicine Meeting
November 5-7, 2026 | Tampa, Florida

BACKGROUND

- Epidural analgesia is the most common form of labor pain management
- Potential complications include spinal hematoma, high spinal, systemic toxicity, infection, and nerve injury
- Risk ↓ in OB cases likely due to the hypercoagulable state of pregnancy and a more compliant epidural space
- Risk factors: difficult placement, multiple attempts
- Up to 13% of reported cases have no identifiable risk factor
- In the event of a suspected spinal spidural hematoma, early recognition and prompt decompression are critical

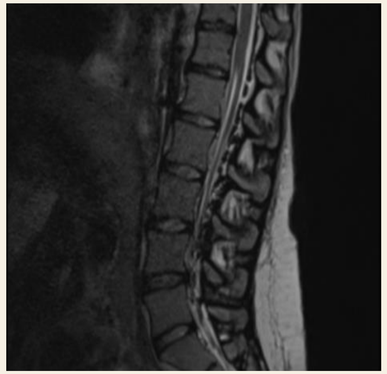
OUR PATIENT

- 20 yo F, G1P0, 40w2d, admitted for spontaneous labor
- PMH: tobacco use, buprenorphine maintenance (h/o substance use disorder), anxiety
- Minimal prenatal care
- Coagulation status normal, confirmed during the event
- Allergies: none
- Medications: buprenorphine



THE CASE

- **8:24 PM** Anesthesia called for labor epidural
- **9:25 PM** 1st epidural placed; technically difficult (2 levels, 2 redirects) due to limited cooperation
- **12 AM** Epidural noted non-functional (failed)
- **1:02 AM** 2nd epidural at patient request; multiple attempts at L3-L4, success at L2-L3
- **3:00 AM** Infusion decreased to 8 mL/hr for hypotension
- **3:13 AM** Prolonged fetal deceleration; resolved with repositioning
- **4:32 AM** Dyspnea, sensory level T3, dense bilateral LE block; epidural stopped, coags sent
- **5:31 AM** Coags, platelets, fibrinogen all normal; catheter removed
- **7:10 AM** MRI spine obtained



- Spinal epidural fluid and gas collection greatest at L3-L4 and L4-L5
- Moderate spinal canal stenosis
- Superior extension partially seen to T10

MANAGEMENT

- **7:15 AM** Neurosurgery consulted; plan for L2-L4 laminectomies
- **8:35 AM** OR: GA induced, C-section first (uncomplicated), then prone for laminectomy
- **12 PM** PACU: motor function and sensation at baseline
- **4:41 PM** Op report: "No clear visualization of coagulated blood or clot"
- **5:20 PM** Moving all extremities, sensation at baseline all extremities with sensation at baseline.

DIFFERENTIAL DIAGNOSES:

- ❑Epidural Hematoma
- ❑Seroma/ fluid collection
- ❑Resorbed hematoma
- ❑Epidural abscess
- ❑Pseudomeningocele

EPIDURAL COMPLICATIONS

- ❑Hematoma
- ❑LAST
- ❑High Spinal
- ❑Hypotension
- ❑Subdural spread
- ❑Pneumocephalus
- ❑Infection
- ❑Post dural punctural headache
- ❑Nausea and Vomiting
- ❑Intrapartum fever

KEY TEACHING POINTS & CONCLUSION

- Epidural hematoma is rare in OB
- Must remain on the differential when new neurological symptoms follow neuraxial anesthesia
- Difficult placement with multiple attempts increases procedural risk
- Signs to watch for: progressive motor block, high sensory level, and respiratory compromise
- Management includes immediate infusion cessation, neuro exam, coagulation studies, and urgent imaging
- MRI is the gold standard
- Absence of gross clot suggests a seroma or resorbed/redistributed collection
- Epidural gas may reflect a loss-of-resistance-to-air technique.
- Time to decompression is the key prognostic factor, the ~5.5-hr interval here likely drove the excellent outcome.
- Prompt decompression within 8–12 hrs drives favorable neurological outcomes

REFERENCES AND ACKNOWLEDGEMENT

- Special thanks to Dr. Florin Orza and the WFUSM Department of Anesthesiology for this opportunity!

- Please scan the QR code for a list of references