

BACKGROUND

- Neuraxial anesthesia is the cornerstone of pain management in laboring patients.
- Combined spinal epidural (CSE) involves the single injection of opiate or local anesthetic into the CSF for quick relief as well as the insertion of a catheter for continuing pain relief. (2)
- CSE can be placed using a loss of resistance technique to either air or saline (1).
- Common side effects include itchiness, drowsiness, shivering and headache (2).
- Pneumocephalus in the obstetric setting typically results from the accidental injection of air into the intrathecal space while using the loss of resistance technique. (1)
- Headache from dural puncture typically results from CSF leak but can rarely be associated with pneumocephalus. (1)

Common Clinical Findings of Pneumocephalus:

- Headache
- Nausea
- Vomiting
- Seizures
- Dizziness
- Cranial nerve palsies
- Hemiparesis
- Encephalopathy

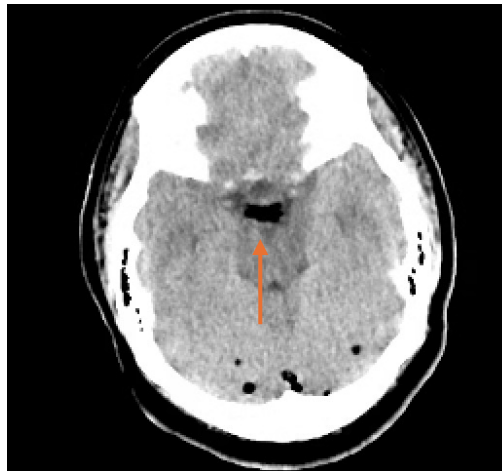
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CASE REPORT

- Patient is a 31-year-old G4P0 at 39 weeks and 2 days gestation who presented for external cephalic version (ECV) and induction of labor vs. C-section.
- An epidural catheter was placed using the loss of resistance to air technique and the procedure was completed uneventfully with no signs of inadvertent dural puncture or “wet tap”.
- Patient then underwent ECV which was successful and continued to progress throughout her labor.
- A few hours later, patient is noted to be very drowsy and not as responsive as she was earlier in the day. She also developed globus sensation, an inability to swallow and an inability to keep her eyes open.
- She then becomes hypoxic with SPO2 in the 80s and responds well to 2L NC. At this point, she also exhibits eye crossing, complains of blurry vision and has periods of blank stare from which she has to be “snapped back into consciousness”.
- Code stroke is called.

Imaging Findings:

CT: Moderate to large volume pneumocephalus in cavernous sinuses, gas in the subarachnoid space considered to be iatrogenic



Management:

- Neurosurgery and tele stroke neurology were consulted and patient was started on 100% oxygen via nonrebreather mask. No surgical intervention necessary. Patient improved significantly and was able to deliver vaginally.

CASE CONCLUSION

- Four days after discharge, the patient presented again to the ED with complaints of intractable headache. She was admitted to the neurologic ICU for further evaluation and management.
- MRI was concerning for bilateral holohemispheric, thin, nonhemorrhagic subdural collections consistent with intracranial hypotension.
- Patient underwent epidural blood patch by interventional radiology.
- She improved significantly and was discharge home after a 3 day stay in the neurologic ICU.

DISCUSSION

Key Points:

- This case highlights a potential and rare consequence of utilizing the loss of resistance to air technique in the routine placement of a CSE
- Early recognition of post-procedural atypical neurologic symptoms is crucial
- Multidisciplinary involvement is important in the management of suspected pneumocephalus
- Appropriate, image guided diagnosis of the condition is key