CSF Fistula Following Neuraxial Labor Analgesia: A Case Report

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Disclosures

• None

Introduction

- Cerebrospinal fluid (CSF) cutaneous fistula is an uncommon complication of neuraxial anesthesia, where CSF leaks abnormally from the subarachnoid space to the skin at the epidural insertion site.
- While most CSF leaks resolve on their own, persistent leakage can lead to a fistula, causing significant complications such as meningitis, headaches, and neurological deficits.
- We present a case of a 33-year-old primigravida who developed a CSF fistula following neuraxial anesthesia for labor.



Case



- A 33-year-old G1P0 patient was induced at 40 weeks gestation due to elevated blood pressure. After an uncomplicated dural puncture epidural, she delivered a healthy baby via spontaneous vaginal delivery. Her pregnancy was complicated by HELLP syndrome, a third-degree perineal laceration, and postpartum hemorrhage.
- The epidural catheter was left in for 25 hours after delivery, until it was certain that her post-partum hemorrhage had resolved, and she did not require another procedure.
- A few hours after removal, clear fluid leaked from the insertion site. This continued despite pressure dressing application. The fluid tested positive for glucose on dipstick, indicating CSF leakage. The patient had no symptoms of a post-dural puncture headache.
- After consulting neurosurgery, and discussion with the patient, an epidural blood patch was performed.
 16cc of the autologous blood was injected, stopping the leakage. A steri strip and sterile dressing were used to approximate the skin at the point of leakage.
- The patient recovered without complications.



Discussion

 Unresolving leakage of clear fluid from neuraxial insertion sites should prompt consideration of a CSF fistula



- Early diagnosis and management may help prevent complications, including meningitis, post-dural puncture headache and radiculopathy
- Diagnosis may be aided by history, examination, lab analysis of fluid (glucose, protein, beta-2 transferrin [most specific, but expensive and time-consuming with little impact on clinical management]) and imaging (MRI and MR myelography)
- Management may be conservative(first-line) or invasive:
 - Conservative: bed rest, pressure dressing, positioning(lateral or supine), skin adhesive, hydration, analgesia, acetazolamide, antibiotics(controversial)
 - Invasive: direct suture of puncture site, epidural blood patch, surgical intervention
- Hypothesized risk factors include: use of larger gauge epidural catheters, presence of intrathecal catheter, larger bore spinal needle, numerous neuraxial attempts

References

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