A Perfect Storm: Coexisting Septic Shock and Post-Dural Puncture Headache

Diksha Verma, MD, Shruthi Krishnamurthy, MD, Jacqueline M Galvan, MD

Background:

- Incidence of sepsis in pregnancy 0.04%
  - Chorioamnionitis, endometritis, pneumonia
- Complications of previable labor with barriers to definitive treatment
  - Chorioamnionitis, hemorrhage, ICU admission
- Neuraxial complications in pregnancy
  - Inadvertent Dural Puncture (IDP) 0.1%, post dural puncture headache (PDPH) 50%-80%
- Epidural blood patch (EBP) is most reliable treatment for PDPH
- **Neuraxial interventions in the setting of septic shock is a contraindicated and controversial intervention**
- Limited data exists on the safety of EBP in septic obstetric patients with PDPH

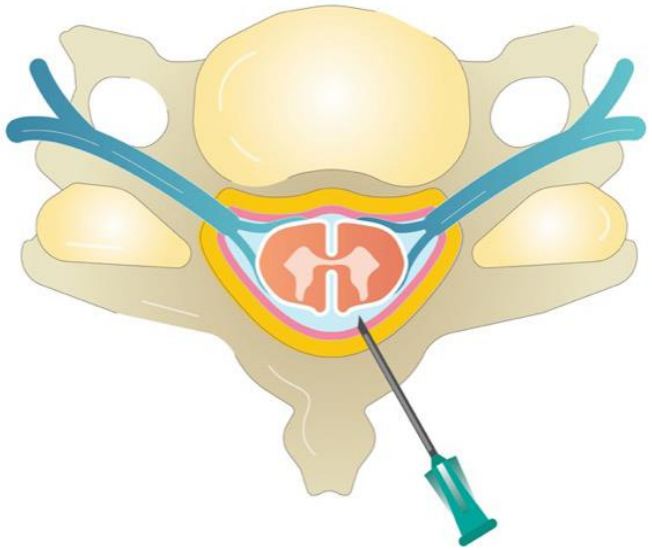

Fig 1. Dural Puncture Image adapted from Pain Medicine News

We present a case of a parturient with previable demise complicated by chorioamnionitis, concurrent COVID infection, florid sepsis, complicated by PDPH

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Case: 39 y/o G3P2 parturient at 21w0d presented with 2 cm dilation with bulging bag at the cervical os

PMH: +COVID infection, hx fibroids, hx prior C-section and infant with Spina Bifida

Hospital Course:

Day 1 – Severe abdominal pain, periviable labor assessment, fetal heart tones were present

Day 5 – Shared decision making, patient opts for comfort care for the fetus

Day 10 – Fever, chills and tachycardia

Day 11 – Arrested preterm labor confirmed

- **Severe sepsis 2/2 chorioamnionitis**, antibiotics initiated
- IUFD confirmed, labor induction with misoprostol
- Dural puncture epidural (DPE) placed for labor analgesic but complicated by **inadvertent dural puncture (IDP)**
- Clinically deteriorated
- STAT D&E due to hemodynamic compromise

Day 12 – **Transferred to MICU** for respiratory and hemodynamic support, E. Coli bacteremia confirmed

Day 14 – +PDPH with symptoms including positional headache, 8/10 pain in occipital region

- DDx; migraine, meningitis, central venous sinus thrombosis, and pneumocephalus
- PO acetaminophen with no improvement ; **EBP offered with caution**
- Daily follow up with anesthesia team for 5 days, offered EBP but refused on post procedure day 1

Day 16 – Spontaneous resolution of PDPH, patient discharged

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Teaching Points:

#1 Sepsis in Pregnancy

- Common etiologies include chorioamnionitis, endometritis and pneumonia
- Complications in women with previable labor and barriers to definitive treatment; chorioamnionitis, hemorrhage, ICU admission

#2 Post Dural Puncture Headache and Epidural Blood Patch in Septic Parturient

- ASRA and current guidelines recommend EBP for definitive treatment (in the absence of sepsis or other contraindications)
- Delay neuraxial procedures in bacteremic patients until antibiotic therapy initiated
- Alternative treatments include hydration, NSAIDS, sumatriptan, sphenopalatine ganglionic block

#3 Epidural blood patch in septic parturient with previable IUFD: Lessons learned

- Multidisciplinary planning, shared decision making and individualized risk benefit assessment necessary in PDPH with sepsis
- Ultrasound guided epidural or placement by a more experienced provider in these higher risk patients to reduce risk of IDP
- Non-invasive modes of pain management in the setting of IUFD

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