

Background



- **HELLP syndrome** is a severe obstetric complication characterized by hemolysis, elevated liver enzymes, and low platelets
 - Involves endothelial dysfunction, increased vascular permeability, and systemic inflammation causing **interstitial fluid shift** and **generalized edema**
- **Epidural analgesia** remains the standard of care for labor pain management
- **Key complication** of epidural placement is **inadvertent dural puncture**, which may result in **cerebrospinal fluid (CSF) leakage** from the intrathecal space into the epidural space
- CSF leakage may lead to **post-dural puncture headache (PDPH)**, a positional headache due to intracranial hypotension

Case



- **38-year-old G1P0** woman with preeclampsia and **HELLP syndrome**
- Underwent cesarean section at 33w3d gestation with **combined spinal-epidural anesthesia**
- **12 hours** after epidural catheter removal, patient noted **clear, yellow-tinged fluid leakage** from epidural site on their back
- Patient denied symptoms of PDPH, including headache
- Fluid analysis showed **↑protein and ↑glucose** with **(-)beta-2-transferrin**, consistent with interstitial fluid
- Leakage resolved by **postoperative day 4**, and patient was discharged with routine follow-up

Teaching Points



- Post-epidural site fluid leakage is **not necessarily CSF**
 - **Interstitial fluid from generalized edema** may mimic a CSF leak
- Suspected CSF leakage should prompt workup of potential dural puncture, given risk of PDPH and other neurologic complications
- **Beta-2-transferrin testing** can help distinguish CSF from non-CSF fluid
- Accurate differentiation can guide appropriate management and prevent unnecessary interventions, such as an **epidural blood patch**