

# Seizures after epidural blood patch for post-dural puncture headache

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## Introduction

- Unintentional dural puncture (UDP) is an infrequent complication of epidural anesthesia with an incidence ranging from 0.4-6%
- A post-dural puncture headache (PDPH) occurs in half of patients with UDP and can lead to significant distress
- Conservative medication management can be offered but is often minimally effective; epidural blood patch (EBP) is the gold standard treatment
- EBP is usually well tolerated but rare serious complications (arachnoiditis, subdural hematoma, cerebral venous sinus thrombosis) have been reported

## Case Presentation

- A 23yo G3P1011 healthy patient presented at 40w4d in labor
- She underwent epidural placement with no UDP noted at that time and had an uncomplicated delivery
- On postpartum day 1 (PPD1), she developed a positional headache, relieved when supine, concerning for PDPH
- Conservative treatment with acetaminophen, ibuprofen, and cosyntropin offered no relief
- MRI head obtained showed dural sinus distension cisterns concerning for intracranial hypotension and UDP
- Given failure of conservative management, patient elected for EBP on PPD3

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## Epidural Blood Patch Course of Events

- EBP was performed on PPD3 with 20mL blood injected into epidural space with rapid improvement in headache
- 1 hr postprocedure: headache resolved, pt noted to be intermittently hypertensive with systolic BP 130-160's, resolved soon after
  - BP attributed to reequilibrating intracranial pressure, was not treated
- 4 hr post: pt endorsed dizziness and blurred vision, then seized 2-3 minutes before resolving spontaneously
  - Magnesium started for presumed eclampsia, CT head obtained, unremarkable
- 5 hr post: patient endorsed dizziness again, had another seizure. Received midazolam.
- Patient transferred to neuro ICU, started on levetiracetam and monitored on continuous EEG
- 1 day post: normotensive with no lab evidence of preeclampsia, magnesium stopped. No further seizures
- 2 days post: patient discharged with neurology follow-up scheduled



MRI brain showing dural sinus distension consistent with intracranial hypotension and UDP

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## Discussion

- Seizures during pregnancy and peripartum are often attributed to eclampsia, but alternative etiologies occur and must be considered
- Seizures after EBP are extremely rare but have been reported
- Cerebral autoregulation regulates cerebral blood flow (CBF) in the setting of intracranial hypotension following unintentional dural puncture. A sudden increase in ICP following EBP can cause alterations in CBF
- The patient's prodromal dizziness before both seizures suggests that reduced CBF may have contributed. Re-equilibration of CBF could explain her quick recovery
- Blood in the spinal fluid is epileptogenic and may also have been an etiology of seizures post-EBP

## Sources

1. Prichard A, Appiah S, Kearsley R, Arnold G. Seizures after epidural blood patch in a postpartum patient later diagnosed with hypertension and proteinuria: a diagnostic conundrum. *Anaesth Rep.* 2022 Feb 24;10(1):e12149. doi: 10.1002/anr3.12149. PMID: 35237757; PMCID: PMC8870969.