

Post-Dural Puncture Headache

Anesthetic Pearls: Anesthetic Implications of Post-Dural Puncture Headache

Incidence of Dural Puncture during epidural attempt is ~ 1%.

Incidence of Post-Dural Puncture Headache (PDPH) is ~ 40-80% (debated / reported / reviewed by various sources).

Mechanism: Proposed to result from the release of CSF and the loss of hydrostatic pressure support allowing the brain and supporting structures to “sag” and therefore placing traction on highly innervated cerebral vascular structures and cranial nerves.

Risk Factors:

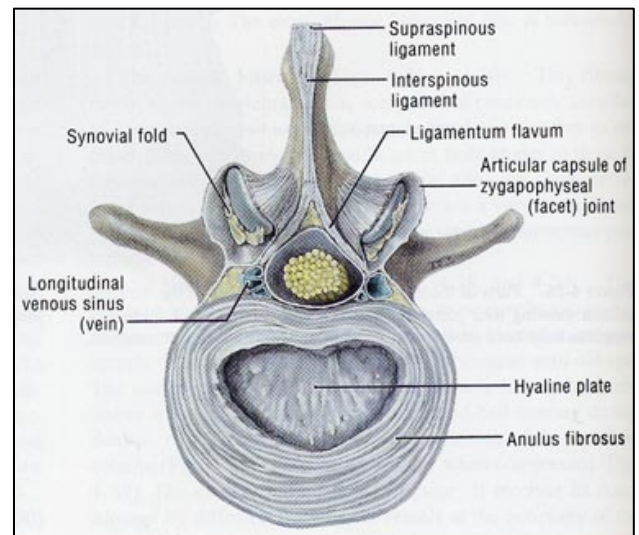
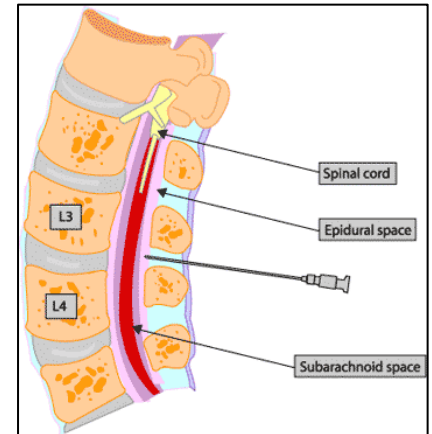
1. Youth
 2. Female gender
 3. Pregnancy (and other states of increased intra-abdominal pressures)
 4. Multiple epidural attempts
 5. Large bore needles
 6. Cutting tip needles
 7. Poor technique (the most important risk factor)
- ** Early ambulation is **NOT** a factor **

Symptoms:

- A. Postural headache (Hallmark: worse upright & relieved when supine)
- B. Headache pain is throbbing and frontal (similar in nature to vascular cluster headaches)
- C. Associated with diplopia / vertigo, nausea & vomiting
- D. Onset within 6 - 12 hours (but can be immediate)

Treatment:

1. Bed rest
2. Oral analgesics
3. Aggressive hydration (PO or IV)
4. Abdominal binders
5. Soft diet with stool softeners
6. Caffeine (may cause cerebral vascular vasoconstriction; 500mg in 1000cc LR or 300mg PO)
7. Epidural blood patch



EPIDURAL BLOOD PATCH

Indication: Persistence of headache pain beyond 48 hours with associated nausea / vomiting, and diplopia / vertigo.

Technique: 10 - 20 ml of autologous blood injected into epidural space (aseptic blood draw and epidural placement).

Results:

- A. 95% of patients experience relief within the first 24 hours with the first patch
- B. 99% of patients experience relief upon placement of second patch
- C. Up to 60% of PDPH resolve spontaneously in 1-6 weeks (however 50% of patients can be totally bedridden during this period).

Mechanism: Unknown

Proposed Mechanisms:

- 1) Activation of platelets at the raw surface of the dural tear with subsequent formation of a hemostatic plug.
- 2) Increased hydrostatic pressure within the spinal canal.

Complications: Pain on injection, dural puncture, arachnoid irritation from blood migrating into the subarachnoid space, infection / meningitis.