Clinical Update 2010: Epidural Blood Patch

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Objective: After this presentation participants will –
1. Understand the place of epidural blood patch as a therapy for headache
2. Be able to obtain informed consent from obstetric patients with post-dural puncture headache
3. Have a framework for the successful conduct of an epidural blood patch

Summary: The results of expectant, symptom management of post-dural puncture headache are disappointing and epidural blood patch (EBP) is effective. Anecdotal reports suggest it is effective for postural headache due to cerebrospinal fluid leak in spontaneous intracranial hypotension. The efficacy of EBP appears lower in the obstetric population, possibly related to gender, age or pregnancy/postpartum differences. In my opinion prophylactic EBP is not worthwhile.

Women with a firm diagnosis of post-dural puncture headache should be advised of the benefits and risks of EBP and alternative treatments. Expectant management delays discharge but it appears that delaying EBP up to 48 hours improves success rates. Although 95% of patients obtain short-term relief of symptoms and complete relief usually persists if headache resulted from a small, non-cutting spinal needle, after unintentional dural puncture only 35-70% remain headache-free after several days and up to 40% of these patients request a second EBP.

The main adverse effects of EBP are vertebral pain during injection of blood and post-procedural back pain (moderate in up to a third, lasting up to 5 days). Repeat dural puncture and subarachnoid injection of blood are concerns. Quantifying serious complications is not possible, but subdural hematoma, cranial nerve palsy, seizures, radicular back pain and infection or arachnoiditis appear to be very rare.

The conduct of EBP varies considerably, largely due to poor levels of evidence for specific practices. Expert opinion and best evidence supports performing the procedure in a sterile fashion at or near the original intervertebral space, with the patient positioned laterally. The optimum volume after unintentional dural puncture appears to be 20 ml and ideally the patient should remain supine for 2 hours after the procedure. Repeat EBP should only be undertaken after patient review and if the diagnosis is in any doubt, other pathologies must be excluded.

Key Points:
1. Epidural blood patch is the most effective therapy for post-dural puncture or low intracranial pressure-type headache.
2. Epidural blood patch completely relieves post-dural puncture headache in up to 95% of cases resulting from a spinal technique but less than half of those resulting from epidural insertion.
3. Awaiting spontaneous resolution of headache delays hospital discharge but EBP should preferably be delayed 24-48 hours after the onset of headache.
4. The EBP procedure requires sterility, avoidance of repeat dural puncture and injection of 20 ml of blood, unless the volume is restricted by back pain
5. Other pathologies must be excluded if the headache is atypical or other features indicate that investigation is warranted.

Key References: