

78. EPIDEMIOLOGY AND HEADACHE MANAGEMENT IN SPONTANEOUS INTRACRANIAL HYPOTENSION

Diaz, J.H. Anesthesiology & Public Health, LSU School of Medicine, New Orleans, LA

Introduction: Spontaneous intracranial hypotension (SIH) is a rare postural headache syndrome that mimics post-dural puncture (PDP) headache and has been treated with epidural blood patch (EBP).

Methods: The clinical findings and management of 22 cases of SIH reported since 1997 were reviewed in an epidemiologic analysis that determined the most common clinical findings, the most successful diagnostic tools, and the outcomes of EBP in managing postural headaches. The study population was stratified by sex in order to evaluate the possibility of significant sex differences in presentations and outcomes of management. Continuous variables were compared for differences by unpaired t-tests; categorical variables were compared for differences by chi-squares. Statistically significant differences were identified by P values of 0.05 or less.

Results: The mean age of the study population was 43 +/- 16 years (age range 16-76 years) with a female to male ratio of 3.4:1.0 (17 females, 5 males). Females with SIH were significantly (P = 0.050) younger (40 +/- 15 years) than males with SIH (55 +/- 13 years). The sequence of presenting physical findings of SIH included: postural headache, nausea/vomiting, tinnitus, visual field cuts, diplopia from abducens palsy, hyperacusis, and unilateral nerve deafness. Men were significantly more likely to present with tinnitus (P = 0.037) and visual field cuts (P = 0.015) than women. Meningeal enhancement on contrast MRI was the most common radiographic finding (16 patients), followed by subdural hematomas (4 patients) and hygromas (2 patients). Radionuclide cisternography demonstrated thoracolumbar dural leaks in 7 of 9 patients. Cerebrospinal fluid (CSF) opening pressure was very low in all patients (11.5 +/- 8 mm of water) with no sex differences. EBP was performed in 8 patients, repeated in 3 patients, failed to relieve headache in 3 patients, and offered short-term improvement in only 5 patients. One patient was managed by epidural saline infusion at 15 ml/hr for 5 days. The mean volume of autologous EBP was 37 +/- 34 ml (range 15-120 ml). Subdural hematomas and hygromas were drained by burr holes or craniotomies. Postural headaches resolved in all patients with time, regardless of treatments, and restoration of physiologic intracranial fluid dynamics was confirmed by normal brain MRI or CT findings.

Discussion: SIH headaches are more common in women than men, mimic PDP headaches in presentation, are less responsive to EBP than PDP headaches, and may have significant co-morbidities. Males with SIH present with cranial nerve palsies more often than females, possibly due to longer brainstem nerves stretched over the petrous temporal bone by heavier, ptotic brains. The management of postural headache in SIH by techniques, other than EBP, to stop CSF leaks (fibrin glues) and by methods to restore CSF volumes (epidural saline infusions) should be investigated further. EBP transiently translocates, but does not permanently restore CSF volume, which may explain its treatment successes in PDP headaches and failures in SIH headaches.

1. Weitz SR, Drasner K: *Spontaneous intracranial hypotension: A series. Anesthesiology 1996; 85: 923-5*

2. Benzon HT, Nemickas R, Molloy RE, Ahmad S, Melen O, Cohen B: *Lumbar and thoracic epidural blood injections to treat spontaneous intracranial hypotension. Anesthesiology 1996; 85: 920-2*