

Title: TREATMENT OF POST-SPINAL HEADACHE WITH EPIDURAL DEXTRAN 40

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**Introduction.** Injection of autologous blood into the epidural space ("blood patch") has been noted to be effective in about 95% of post-spinal headache (PSH) cases. Nevertheless, the possibility of bacterial contamination, obliteration of the epidural space following organization of the clot, and reported complications of backache and neckache, vestibular and cerebellar disturbances and nerve root compression<sup>1</sup> have prompted searches for alternative treatment. Dextran 40 has been injected into the epidural space to prolong epidural anesthesia<sup>2</sup>. Our experience using epidural injection of dextran 40, as treatment for PSH, is herein reported.

**Methods.** Informed consent was obtained from four male and fifty-two female adult patients, who had typical characteristics of PSH. All had previously been treated unsuccessfully with rest, hydration, and analgesics. Some had also been treated with steroids (8), epidural saline (6), blood patch (2), and acupuncture (6). The onset of PSH was less than 12 hours in 7 cases, 12-24 hours in 18 cases, and 24-48 hours in 26 cases. Using an aseptic technique, the epidural space was entered at L<sub>4-5</sub>. Dextran 40, 2 ml per every 10 cm of the subject's height, were injected. The time from injection to disappearance of the PSH, and any side effects following the injection, were recorded. Attempts at prolonged follow-up were attempted.

**Results.** Epidural injection of dextran 40 relieved PSH in every case. However, relief occurred immediately in 39 cases (68%), from 0-30 minutes in 5 cases (9%), from 30-60 minutes in 5 cases (9%), from 60-120 minutes in 3 cases (5%), and greater than 120 minutes in 4 cases (7%). During the injection, four subjects reported dysesthesia and two had "burning sensations". These complaints resolved spontaneously in a few minutes. No other

adverse effects were noted. Follow-up from 2 to 8 months was possible in 36 patients. No deleterious effects or recurrence of the headache were reported.

**Discussion.** Dextran 40 has been injected epidurally combined with local anesthetics without adverse effects<sup>3</sup>. When injected intravenously, dextran 40 has a half-life of 6 hours<sup>3</sup>. If deposited epidurally, it should remain longer than would normal saline, exerting a positive pressure on the dura, thus stopping or impeding the loss of CSF. Severe anaphylactic reactions to polysaccharide plasma expanders have been reported; however, the incidence is only 1:41,000<sup>4</sup> when hapten is administered prior to the dextran. Epidural dextran 40 appears to be effective treatment for PSH in 56 subjects. In 77% of the patients, PSH disappearance occurred within 1/2 hour of injection. The complications associated with this treatment were few, minor, and self-limiting. Further investigation is justified.

#### References.

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