Fibrin glue epidural patching for pediatric patients with spotaneous intracranial hypotension: A case series.

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Abstract:

Introduction Spontaneous intracranial hypotension (SIH) most commonly results from a spontaneous CSF leak. Certain connective tissue disorders, like Marfan's syndrome and Ehlers-Danlos syndrome, are known to be associated with meningeal abnormalities that potentially may lead to dural defects, resulting in SIH. Successful treatment of SIH symptoms with fibrin glue has been reported in post-dural puncture headache secondary to long-term intrathecal catheterization. Additionally, fibrin glue is widely used to achieve dural closure in neurosurgical operations. Results/Case report We report our observations of 4 pediatric pain patient's with SIH seen over a 6 month period at Lucile Packard Children's Hospital multidisciplinary pain clinic. Patient ages ranged from 11 years to 22 years old (median: 12 years, 6 months). Three patients carried the diagnosis of unspecified connective tissue disorders and concomitant intracranial hypotensive symptoms, notably orthostatic headache, dizziness, tinnitus, and improvement of the symptoms in the supine position. The fourth patient carried the diagnosis of erythromelalgia with severe intractable lower extremity pain requiring periodic intrathecal drug therapy. The three patients with connective tissue disorders failed initial conservative treatment consisting of hydration and caffeine, while the fourth patient had an extensive history of SIH symptoms following intrathecal catheter insertion, and thus underwent prophylactic fibrin epidural patching immediately prior to placement of intrathecal catheter for the purpose of intrathecal drug trial for chronic pain. The duration of SIH symptoms ranged from 1 year to 4 years to (median: 2 years, 6 months). Initial SIH treatment with epidural blood patching at the L4-L5 interspace failed to resolve their symptoms as well, with

successful cessation of SIH symptoms were ultimately achieved by epidural patching with fibrin glue at L4-L5 interspace in 3 of the 4 patients. Of the 3 successful interventions, one patient required 2 rounds of fibrin epidural patching to return to her pre-SIH baseline. The patient that failed the fibrin epidural patch treatment eventually experienced resolution of symptoms following a repeat epidural blood patch at the C7-T1 interspace, suggesting a cervicothoracic location as the site of the spontaneous CSF leak. At their 1 month follow-up appointments, the patients reported continued symptom relief and satisfaction with their treatment. Discussion These cases are novel as they illustrate that epidural patching with fibrin glue may be a good alternative to autologous epidural blood patching when blood patching does not result in resolution of the SIH symptoms in connective tissue disorder patients. Additionally, review of the literature shows this to be the first reported case series on the use of fibrin glue for SIH in the pediatric population.