Use of fibrin glue in a pediatric patient for resolution of spontaneous intracranial hypotensive symptoms for chronic, recalcitrant spontaneous CSF leak.

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Abstract:

Introduction Spontaneous intracranial hypotension (SIH) most commonly results from a spontaneous CSF leak. Intracranial hypotension, which is characterized by orthostatic headache, dizziness, tinnitus, and improvement of the symptoms in the supine position, is often encountered in patients with connective tissue disorders. The presence of a pre-existing defect in the dura is a potential cause of SIH. Certain connective tissue disorders are known to be associated with meningeal abnormalities that potentially may lead to dural defects. Meningeal diverticula are known to occur in Marfan's syndrome, Ehler's Danlos syndrome type 2, neurofibromatosis, autosomal dominant polycystic kidney disease, and familial osteosclerosis. Recently in our multidisciplinary pain clinic, we evaluated and treated a patient with an unspecified connective tissue disorder and chronic low pressure headache symptoms in whom initial treatment with an epidural blood patch failed to resolve his symptoms, but successful cessation was ultimately achieved by epidural patching with fibrin glue. Results/Case report We present the case of a 13-year-old Caucasian male with an unspecified connective tissue disorder with Marfanoid features, who met the diagnostic pattern of CSF hypotension with chronic headache and neck pain. Symptoms began in 2011, localized at the junction of the bottom of the skull and neck, in the midline and bilaterally. Intensity was described as 5/10, made worse with sitting up or standing, improved with lying down. The patient described episodes of pain as non-radiating, constant, non-pulsatile, starting in the morning with rising and lasting for 2 days. Conservative treatment consisting of hydration and caffeine

provided only mild improvement. The patient's MRI was suggestive of a CSF leak with flattening of the pons and accelerated CSF flow velocity in the cervicothoracic region, but was unable to identify the exact location of a dural tear. Therefore, he underwent empiric epidural blood patching at L3-L4 spinous interspace. The patient reported resolution of his low pressure headache symptoms after his initial intervention. Seven days following the initial epidural blood patch, the patient felt a "popping" sensation in his lower back while walking his dog and experienced a return of all symptoms including pain described as 5/10. Discussion Successful treatment of spontaneous intracranial hypotensive symptoms with fibrin glue injection has been reported in post-dural puncture headache in adults secondary to long-term intrathecal catheterization. Additionally, fibrin glue is widely used to achieve watertight dural closure in neurosurgical and orthopedic operations. After failing both conservative measures and epidural blood patch, a fibrin epidural patch was performed in the patient's lumbar spine at the L3-L4 interspace again. The patient's intracranial hypotensive symptoms resolved within the next 24 hours. At his follow-up appointment 1 month later, the patient reported continued resolution of his symptoms. This case is novel as it illustrates that epidural patching with fibrin glue may be a good alternative to autologous epidural blood patching, when epidural blood patching does not result in resolution of the symptoms in a pediatric patient in the setting of an underlying connective tissue disorder.