Treatment of Post-Dural Puncture Headache (PDPH) with Sphenopalatine Ganglion Block (SPGB) in a Pediatric Patient w/ Cervical Syringohydromyelia Presenting w/ Acute Altered Mental Status (AMS) s/p Vaccination Series vs Tic Bourne Infection

Preet Patel MD, Shruti Shah MD, Scott Mellender MD, Shaul Cohen MD
Department of Anesthesiology, Rutgers-Robert Wood Johnson Medical School, New Brunswick, NJ 08901

**Background:** Post-Dural Puncture Headache (PDPH) is a debilitating complication of lumbar puncture (LP) characterized by a vicious cycle of immobility, weakness and depression [1]. Numerous treatments have been applied for the proper management of PDPH but their safety and efficacy still need improvement.

**Case Report:** A 17 y/o F w/ PMHx/o PCOD & IBS was admitted to PICU w/ AMS and h/o of clonic movements in UE/LE’s. Two days prior to presentation, the patient complained of B/L extremity weakness while at work. Later that day, symptoms progressed as she developed confusion and began experiencing spontaneous, clonic movements in all extremities. Patient denied incontinence or post-ictal period. Patient’s father took her to an ED where they suspected dystonic reaction and administered diphenhydramine and then lorazepam (1 mg) which broke the movements. Labs were normal and urine toxicology was negative. The next day, patient was seen by pediatric neurology and had normal EEG. They determined that the etiology was unlikely to be neurological in origin and recommended f/u w/ ID. The evening prior to admission, the patient’s clonic movements persisted and she began experiencing new onset visual hallucinations. In addition, the patient’s mother also found two ticks (embedded, not engorged) on the patient’s posterior knee and abdomen just prior to presentation in our ED. The patient had been hiking earlier in the week. On PE, no fever or rashes were noted. No recent travel history. The patient received Yellow Fever vaccine (4 weeks prior), meningococcal conjugate booster (Menactra) and hepatitis A booster (10 days prior) and typhoid vaccine (PO 5 and 3 days prior). Patient reported feeling feverish for 3 days following her booster vaccines. LP, head CT w/o contrast, brain MRI w/ & w/o contrast and lumbar spine MRI w/ & w/o contrast were negative. During her stay in the PICU, patient developed a postural frontal headache suspected to be PDPH secondary to LP. Headache was effectively treated w/ SPGB.

**Discussion:** Therapeutic epidural blood patch (EBP) is currently the standard of care for post-LP cephalalgia with a success rate ranging from 68% - 90% [2]. Epidural blood patches are known to be associated with negative sequelae, including subdural and epidural hematoma, needle trauma, back pain, meningitis, and a possible second dural puncture [3, 4]. Thus, we are advocating the use of sphenopalatine ganglion block (SPGB) as a first-line treatment for PDPHs. SPGB is a noninvasive anesthetic intervention with minimal adverse effects and high efficacy [5, 6]. It can be performed by inserting a cotton-tipped applicator saturated with 5% water-soluble lidocaine ointment through each nares bilaterally and positioning the end of the applicator tip just superior to the middle turbinate and anterior to the pterygopalatine fossa and sphenopalatine ganglion for 10 minutes with the patient in supine position. Acute stimulation of the SPG with good anatomical and physiological placement leads to rapid termination of severe headache [7, 8].

**References:**

**Axial View**

Cervical and thoracic spine MRI w/ & w/o contrast revealed syringohydromyelia of the cervical and upper thoracic spinal cord w/o associated enhancement or intraspinal lesion.

**Sagittal View**

Cervical and thoracic spinal cord w/o associated enhancement or intraspinal lesion.