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Orthostatic Headache due to CSF Leakage Detected by MR Myelography:A CASE REPORT

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Introduction

Spontaneous intracranial hypotension(SIH) is a well-known clinical entity and the most common cause of SIH is a spinal CSF leak. Diagnostic criteria of SIH include orthostatic headache, brain MR imaging with pachymeningeal enhancement and/or brain sagging. The mainstay of treatment for SIH is autologous epidural blood patch. Cerebrovascular venous thrombosis is an uncommon entity that may occur in the sinuses of dura and cortical veins. Common etiologies include states of hypercoagulability and other causes include inherent thrombophilic states. The impact of intracranial hypotension due to cerebrospinal fluid(CSF) leak on venous flow and thrombosis is not clear. But recent study, Chalouhi et al. suggested that CSF leak and Resulting intracranial hypotension may be a risk factor for cerebral venous sinus thrombosis. Because of targeted therapy may improve clinical outcomes, localization of CSF leakage can be important for treatment. MR myelography(MRM) is a noninvasive Method that can be used for demonstrating and localization of CSF leakage at spine. It has no radiation hazard and can be performed without intrathecal administration of contrast media or radioisotopes, unlike CT myelography(CTM). We present the case and treatment course of the patient who initially presented orthostatic headache due to a CSF leak which was revealed by MRM.
Case: A 42-year-old female suffered sudden onset of occipitoparietal headache while changing her posture during sleep in the early morning of April 18th, 2018. She suffered from a holocranial, oppressive, and throbbing headache with nausea and dizziness persisting for several hours. She admitted our hospital on May 11th, 2018(21days after the onset). And she took a Brain MRI with contrast which showed minute SDH(Fig 1) in the convexities and tentorium that means suspicious of the SIH. After she admitted our hospital, she was conservatively managed with bed rest and intravenous hydration. Under suspicion of spontaneous spinal CSF leak, She took MRM which revealed CSF leakage at T 7-8 level(Fig 2). She did not have any episode of trauma or procedure in thoracic level. She complained perioral sensory numbness on May 17th, 2018 and took diffusion MRI which revealed new high signal intensity change in the right parietal lobe sulci, which means of minute SAH. We injected autologous blood (10cc) into the epidural space at T 7-8 level(Fig 3) on May 18th, 2018. After she received epidural blood injection, her orthostatic headache have been improved and she was discharged from hospital 3 days later.

Conclusion

When the patient presented orthostatic headache and diagnosed SIH, we first consider CSF leakage which can detected by MRM. MRM is a useful tool diagnosing SIH due to CSF

leakage without using contrast agents. And MRM is helpful in determining the site where to inject autologous blood into epidural space.

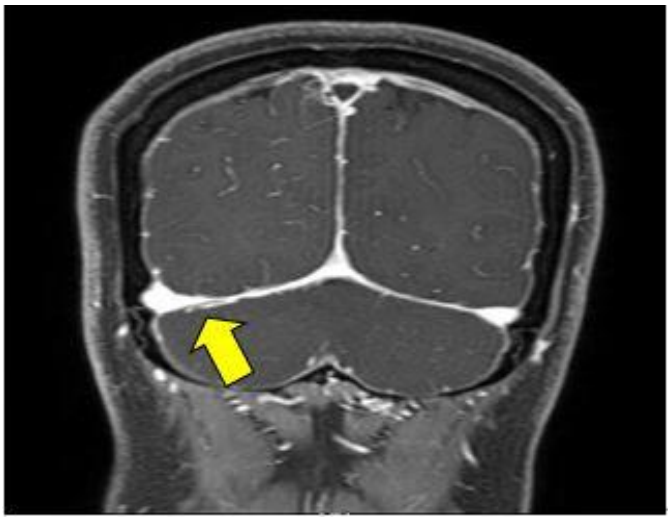

Fig.1.T1-weighted magnetic resonance image shows minute SDH in tentorium 3 weeks after the initial manifestations.

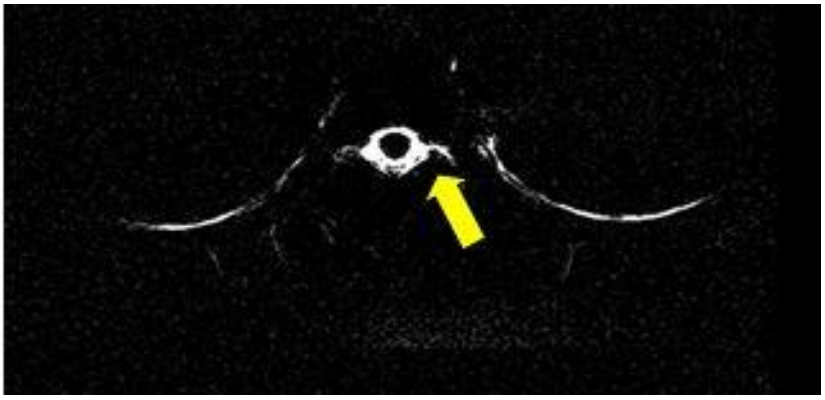

Fig.2.Magnetic resonance myelogram shows CSF leakage at thoracic spine 7-8 level in dural sleeve.

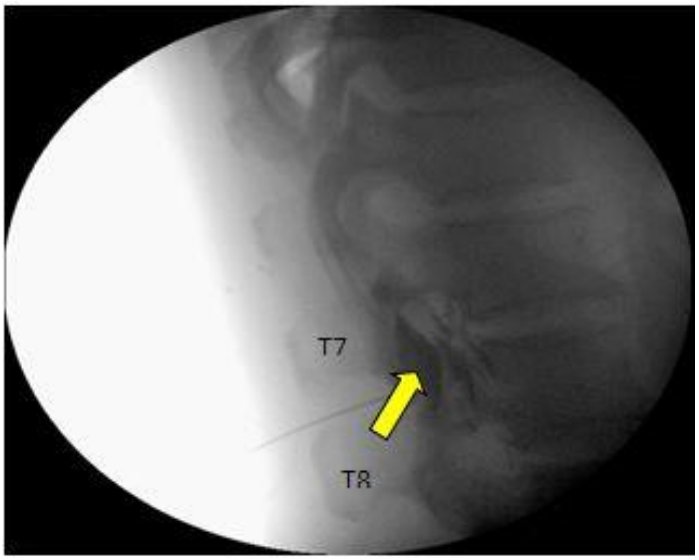

Fig.3.C-arm guided autologousblood injection into the epidural space where CSF leakage at thoracic spine 7-8 level