

Postdural Puncture Headache in a Patient with Thoracic Arachnoid Web with known Joint Hypermobility: Considerations and Cautions

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Background

- Patients with connective tissue disorders can present unique challenges in management and for possible procedural complications due to tissue fragility.
- Post dural puncture headaches (PDPH) are positional bilateral headaches associated with nausea and dizziness.
 - Due to the formation of fragile meningeal diverticula or simple dural rents, there is an increased risk of PDPH in patients with connective tissue disorders.
 - The current gold standard, Epidural Blood Patches (EBPs) are unfortunately invasive and can be associated with worse outcomes in such patients.
- This case highlights the need for less invasive diagnostic and therapeutic care in this population.

Case Description

- This case report presents a rare and complex scenario involving a 48-year-old female patient with a history of joint hypermobility syndrome.
- Presented with acute on chronic low back pain complicated by new onset right lower extremity weakness and radicular symptoms, and a band-like mid-thoracic pain.
- Diagnostic investigations revealed a L5-S1 radiculopathy and the unexpected finding of a thoracic arachnoid web.
- During her rehabilitation, while undergoing a diagnostic thoracic spine myelogram (TSM), she experienced PDPH.
- Initial conservative treatments (bed rest, hydration, caffeine) provided minimal relief, and medications (tylenol, gabapentin, opiates) also provided limited benefit.

Diagnostics & Results

- Lumbar MRI revealed mild bilateral foraminal encroachment without significant stenosis, and EMG confirmed L5-S1 radiculopathy.
- A sphenopalatine ganglion block offered brief mild improvement, and was generally well tolerated and did briefly promote improved therapy tolerance and function.
- Due to persistent symptoms, an epidural blood patch (EBP) was performed 9 days later.
- EBP was initially poorly tolerated but ultimately did provide mild relief.
- Given her medical history, there was concern for worsening radiculitis, and arachnoiditis from a more invasive option such as EBP.

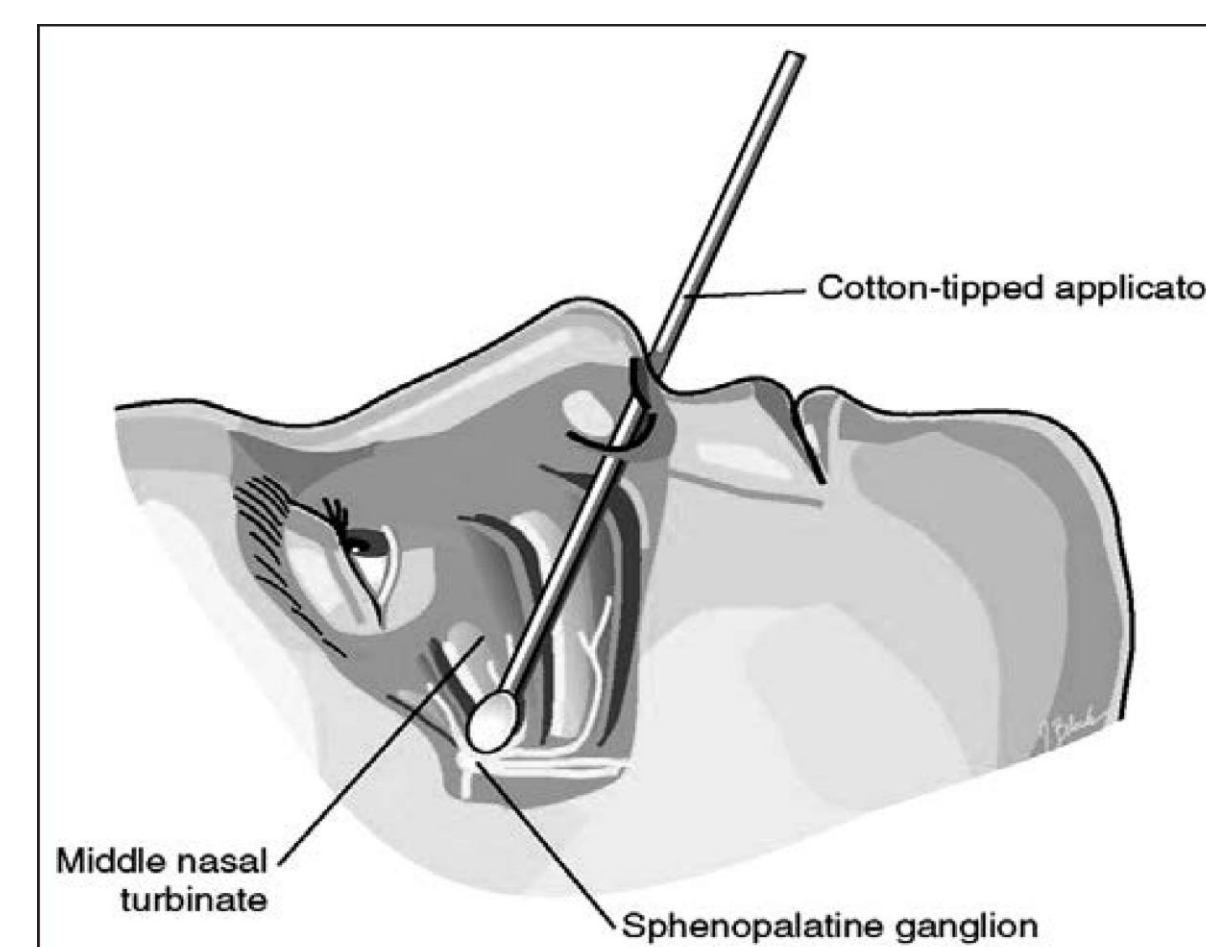


Figure 1: Depicting a sphenopalatine ganglion block. Derived from: Sphenopalatine ganglion block for post-dural puncture headache after invasive cerebrospinal fluid pressure monitoring. Case report by Felipe Chiodini Machado et al. and is licensed under CC BY 4.0 (<https://creativecommons.org/licenses/by/4.0/>).

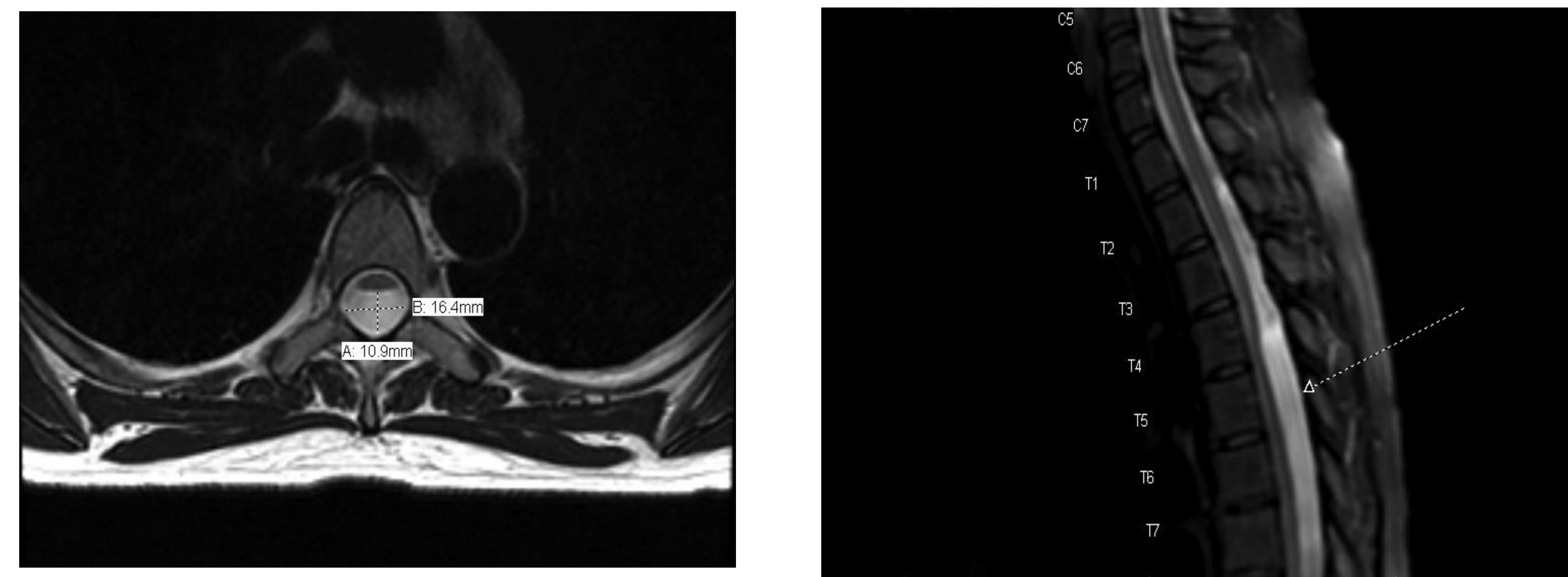


Figure 2: MRI of the Thoracic Spine depicting a T2 hyperintensity posterior to the cord around the arachnoid space between T4-T9 representing a likely arachnoid web with some associated cord flattening (axial view on the left, sagittal view on the right)

Discussion

- Patients with hypermobility and connective tissue disorders, such as Ehlers-Danlos Syndrome (EDS), have an increased risk of PDPH due to fragile meningeal diverticula or dural rents.
- Arachnoid webs/cysts are rare but spinal meningeal cysts may be linked to connective tissue disorders.
- Preliminary studies have shown EBPs, while usually well tolerated, may be poorly tolerated in this population and increased risks such as meningeal irritation, and worsening radiculopathy are to be considered.
- Certain European Anesthesia guidelines recommend avoiding neuraxial procedures in EDS patients, highlighting the need for alternative approaches.

Conclusion

- Further research is needed to explore the relationship between connective tissue disorders and poor EBP outcomes.
- Less invasive methods, such as Greater Occipital Nerve Blocks and Sphenopalatine Ganglion Blocks, could be considered before EBPs in managing PDPH in these patients.
- Emphasizing less invasive diagnostic and therapeutic procedures is crucial when treating patients with connective tissue disorders.

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