

Cervical Blood Patch for the Management of Spontaneous Intracranial Hypotension in the setting of Cerebrospinal Fluid Leak

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Introduction

Spontaneous intracranial hypotension (SIH) due to cerebrospinal fluid (CSF) leakage is a rare, underdiagnosed condition affecting roughly 5 per 100,000 individuals annually. Patients frequently present with orthostatic headaches, nausea, vomiting, and auditory disturbances. Given the absence of prior trauma or procedural intervention, clinical recognition remains challenging. This case report details a young adult with SIH who achieved significant symptomatic relief following multiple cervical epidural blood patch's (EBP).

Case Description

This case describes a 27-year-old male with no significant past medical history who presented with two weeks of orthostatic headache, diplopia, and neck pain. Brain MRI demonstrated diffuse dural thickening and pituitary enlargement consistent with intracranial hypotension. Spine MRI revealed extensive epidural fluid collection extending the length of the cervical, thoracic and lumbar spine suggestive of CSF leak. Digital subtraction myelography performed in both the left and right lateral decubitus positions yielded no evidence of a CSF-venous fistula. Intravenous hydration, caffeine administration, and oral analgesics failed to alleviate symptoms. Subsequently, the patient underwent a fluoroscopically guided cervical interlaminar EBP at the C7–T1 level using 8 mL of autologous blood. The intervention yielded immediate symptom resolution, allowing for discharge on postoperative day two. Upon follow-up, the patient reported a recurrence of symptoms, prompting evaluation at an outside institution where a second epidural blood patch (EBP) was performed, resulting in complete resolution.

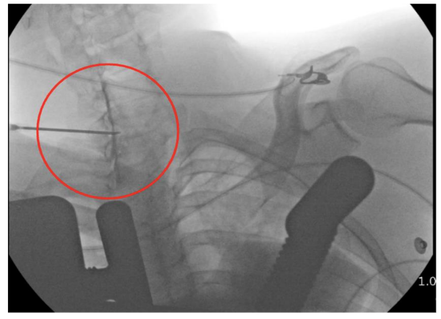
References

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Figures

Figure 1

- ***Image demonstrating a Fluoroscopically guided cervical interlaminar epidural blood patch at C7-T1***



Discussion

The heterogeneous clinical and radiographic presentations of spontaneous intracranial hypotension (SIH) often complicate diagnosis. Patients may present with varying symptoms and imaging findings, making recognition particularly challenging when classic features are absent or nonspecific. Management spans from conservative strategies to surgical repair, with epidural blood patch (EBP) serving as the primary therapy following failed conservative measures, even when the precise leak location is unidentified. EBP promotes sealing of the dural defect and may restore normal cerebrospinal fluid dynamics, providing symptomatic improvement in appropriately selected patients. When the location of a CSF leak can be identified, targeted EBP may offer a more directed therapeutic approach by delivering blood closer to the site of dural disruption. This may be particularly relevant in cases involving high spinal leaks, where conventional lumbar EBP may provide limited effectiveness. This case highlights the unique presentation and diagnostic hallmarks of SIH, demonstrating targeted cervical EBP as a highly effective intervention for high spinal cerebrospinal fluid leaks. The successful outcome further emphasizes the importance of accurate leak localization and individualized procedural planning when managing complex SIH cases.