MR imaging and post LP headache

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A 44-year-old woman presented with 5 days of vertigo and lower extremity weakness and paresthesias. Lumbar puncture (LP), including opening pressure measurement, had normal results. She developed a characteristic post-LP headache. MRI of the brain and spine demonstrated abnormal diffuse pachymeningeal gadolinium enhancement (DPMGE) (figures 1 and 2). Autologous epidural blood patch (EBP) was done at the LP site with near-immediate resolution of the headache. Presumably volumetric displacement of the engorged lumbar epidural venous plexus by EBP compensates for intra-axial hypotension or low CSF volume resulting in acute relief.[1] Repeat imaging 2 weeks later had normal results, suggesting a causal role of the LP. This case highlights the rapid development and resolution of DPMGE following post-LP headache and its treatment.

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1. Senakova D, Mokri B, McClelland RL. The efficacy of epidural blood patch in spontaneous CSF leaks. Neurology 2001;57:1921–1923.

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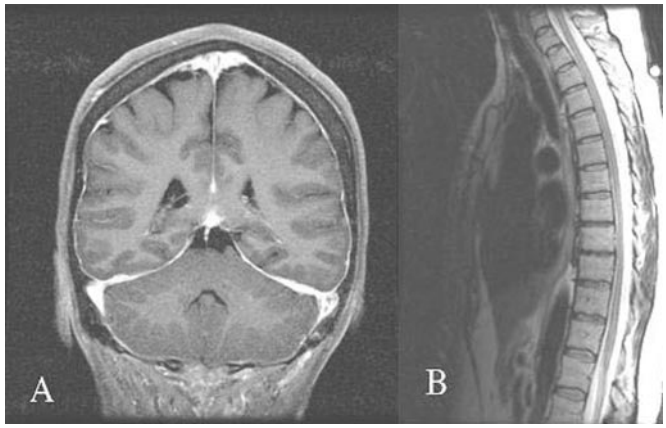

Figure 1. (A) Gadolinium-enhanced coronal T1-weighted image showing diffuse, symmetric, linear, contiguous pachymeningeal enhancement involving the dura mater of the convexities, tentorium, and falx without leptomeningeal involvement (no extension into sulci). (B) Post-gadolinium T1-weighted sagittal image showing diffuse enhancement surrounding the spinal cord.

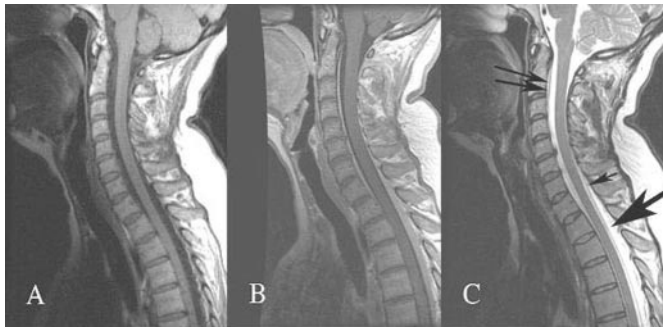

Figure 2. (A) Sagittal cervical and upper thoracic spinal T1 image showing normal spinal cord and epidural space. (B) In contrast to normal non-enhanced T1 imaging, simultaneous sagittal postcontrast T1-weighted imaging of the same region demonstrates abnormal increased signal in the epidural space suggesting epidural venous engorgement leading to flow stasis. (C) Sagittal T2 image also highlights epidural space prominence (large arrow), dural edge (small arrow) with thin line of subarachnoid CSF visible, and suggestion of an extra-axial fluid collection (double arrows).

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