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## Epidural blood patch for orthostatic headache with no remarkable findings on magnetic resonance imaging

Sir,

Commonly used diagnostic criteria for spontaneous intracranial hypotension (SIH) are mainly based on postural features, typical radiological findings, low cerebrospinal fluid (CSF) pressure, and resolution of symptoms after a blood patch.<sup>[1]</sup> A recent systematic review suggests that SIH should not be excluded on the basis of normal neuroimaging because brain magnetic resonance imaging (MRI) was normal in 19% of patients and spinal neuroimaging identified extradural CSF in 48%–76% of patients.<sup>[2]</sup> If a CSF leak occurs at the tip of the dura pouches at the spinal roots, leaked fluid may have spread in the loose connective tissue around the nerve root, although such a phenomenon is not evident on spinal

neuroimaging.<sup>[3]</sup> Reports of SIH with no abnormalities in both brain and spinal neuroimaging are rare, and no guidelines for treatment have been introduced for such cases. We would like to share our experience in treating a patient with typical orthostatic headaches with no remarkable findings on MRI.

A 32-year-old woman (158 cm/62 kg) with severe orthostatic headache was referred to our clinic for intractable pain. The headache would occur within a minute of upright positioning and started 9 days prior to admission to the neurologic department. The patient had no history of headache prior to the ongoing postural headache. She initially felt pain over the entire occipital area; it then spread to the frontal

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and parietal areas. She described her headache as dull, accompanied by a squeezing sensation and mild nausea. The headache pain was graded as 50–70/100 on a numerical rating scale (NRS). Physical examination did not reveal any neurological abnormalities or symptoms. She had no history of trauma or accidental dural puncture prior to the onset of headache. Contrastingly, enhanced brain MRI and magnetic resonance (MR) angiography performed to identify SIH revealed no abnormal findings. MR myelography also showed no remarkable CSF leakage in the entire spine. The neurology department did not identify any underlying diseases associated with SIH. However, the headache persisted for the entire day during admission, despite strict bed rest and intravenous hydration therapy. The patient was unable to maintain her daily activities. A fluoroscopic-guided epidural blood patch (EBP) with 3 ml of contrast medium was administered at the T12-L1 level for pain control. Autologous blood (20 ml) was injected using a 22-G Tuohy epidural needle. The next day, the orthostatic headache had disappeared by more than 90%, without severe complications. After 1 month, the patient had no specific findings, except for an occasional mild headache after a long period of activity; the symptoms had improved. Generally, non-targeted lumbar EBP is initially recommended to prevent any unwanted complications in patients with SIH.<sup>[4,5]</sup> It can be more effective to target the thoracic level than the lumbar level because it is the most common leak location for SIH.<sup>[2]</sup> We suggest the practical use of fluoroscopy-guided single interlaminar EBP at the thoracolumbar junction for intractable orthostatic headaches with no remarkable findings on MRI.

**Declaration of patient consent**

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient has given her consent for her images and other clinical information to be reported in the journal. The patient understands that his name and initials will not be published and due efforts will be made to conceal identity, but anonymity cannot be guaranteed.

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Nil.


**Conflicts of Interest**

There are no conflicts of interest

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