

## Spontaneous Intracranial Hypotension (SIH) Following Soccer Game: Potential Role of MRI in the Treatment Response

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To the Editor:

It was with great interest that we read the paper by Girgis et al. (3) and the related papers regarding spontaneous intracranial hypotension (SIH) in Turkish Neurosurgery. SIH is characterized with orthostatic headache, diffuse dural enhancement on MRI and low cerebrospinal fluid pressure in the absence of trauma history or lumbar puncture (3). Herein, we aimed to share our experience in a man diagnosed with SIH following soccer game managed with epidural blood patch (EBP) and underline potential role of magnetic resonance imaging (MRI) in the treatment response with demonstrative images.

A 36-year-old man was admitted with a sudden onset of headache spreading from the neck to the top of the head after a soccer game without a history of trauma. Clinical history revealed that the pain worsened during erect posture. Neurologic examination and laboratory findings were unremarkable. He was referred to computed tomography (CT) and subsequently MRI with the suspected diagnosis of SIH. CT and MRI revealed some features of SIH (Figure 1, 2). However, the rest of the imaging features including “sagging brain” appearance, subdural effusion-hematoma, and pituitary enlargement were missing. He refused invasive imaging modalities like radio-nuclide cisternography and MR myelography. Nevertheless, based on the characteristic headache and imaging features the diagnosis of SIH was made and he was managed with medical treatment. He did not respond to intravenous hydration, theophylline or caffeinated beverages. Subsequently, he was treated with an autologous epidural blood patch (EBP) performed from the level of T12-L1. Symptoms were dramatically resolved one week after EBP and totally disappeared on the following month. Dural enhancement and venous engorgement also reduced to normal limits after EBP (Figure 3).

Enlargement of the venous sinuses and pituitary gland, pachymeningeal thickening, subdural fluid collection and/or hematoma, shrinkage of ventricles, effacement of sulci and “sagging brain” sign are MRI features of SIH (1). Interestingly,

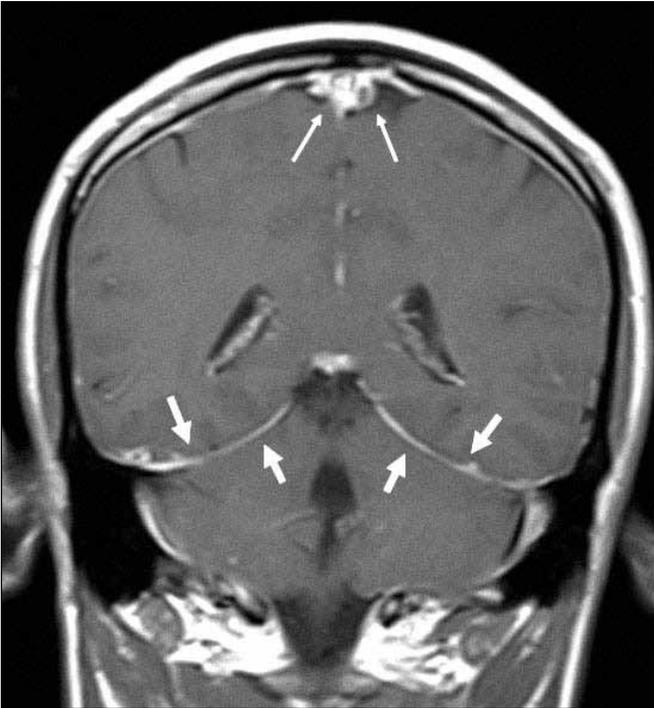


**Figure 1:** Axial non-contrast CT image shows shrinkage of ventricles (arrows) and effacement of sulci.

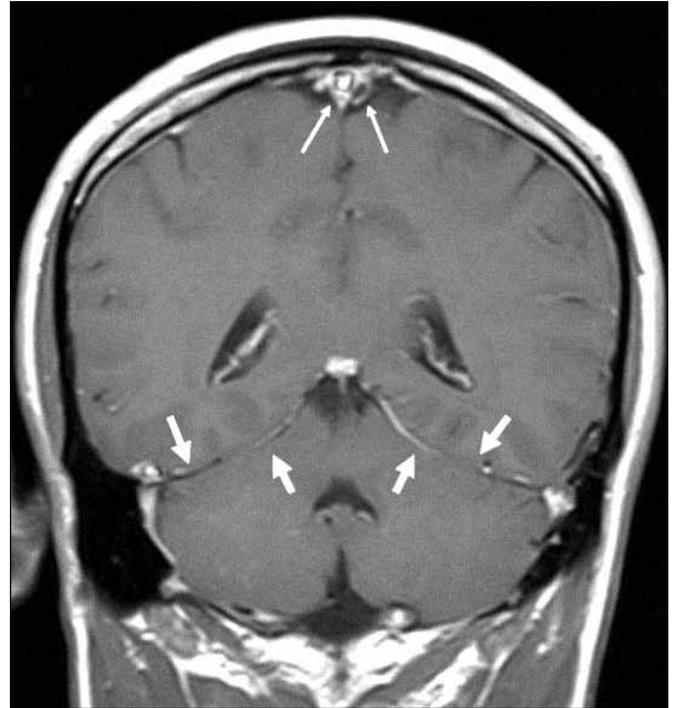


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**Figure 2:** Contrast enhanced T1W Coronal MRI during orthostatic headache episode reveals moderate dural enhancement and thickening in tentorium (thick arrows). Note that venous engorgement can be seen in the superior sagittal sinus (thin arrows).



**Figure 3:** Contrast enhanced T1W Coronal MRI obtained one month after epidural blood patch (EBP) shows regression of tentorial enhancement and thickening (thick arrows). Venous distention also decreases with regard to previous MRI scan (thin arrows).

we did not observe all suggestive imaging features of SIH in the current case and could not utilize invasive imaging modalities due to patient's refusal. However, orthostatic headache, dural enhancement and venous engorgement confirmed the diagnosis of SIH.

EBP is the cornerstone of the therapy in SIH that provides relief of symptoms in 90% of cases (2, 3). We have successfully provided symptom relief in the current case as reported in the literature. In conclusion, SIH can emerge following physical exertion. Although the current case does not reveal all imaging features of SIH, MRI is efficient in the diagnosis as well as in the treatment response.

## ■ REFERENCES

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