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Pictorial Review

Intracranial hypotension: An uncommon entity with common presentation



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ABSTRACT

Headache disorders are among the most common presenting complaints in any neurology outpatient department. International Headache Society classifies headaches as “primary” or “secondary”. The causes of secondary headaches are varied and intracranial hypotension is one of them. It typically presents clinically with postural headaches but most of the times, its diagnosis is delayed, as it is an uncommon cause and there is poor awareness among the medical fraternity about this condition. Imaging, especially magnetic resonance imaging (MRI), plays a crucial role in the diagnosis of intracranial hypotension by not only confirming the diagnosis but also detecting the cause in some cases. This case series tries to highlight the MRI findings of intracranial hypotension in three cases with different etiologies.

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Introduction

Headache is one of the most common presenting complaints in any neurology outpatient department. Headache disorders are associated at times with disability, poor quality of life, and financial burden for the patient. International Headache Society classifies headaches as “primary” or “secondary”.¹ Primary headaches do not have any underlying cause or pathology and are benign and recurrent in nature. Secondary headaches have an underlying cause which may be an infection, vascular disorders, cerebral bleed, tumors, or head injury. History taking and thorough neurological examination are generally enough to arrive at a conclusion, whether the

headache is primary or secondary. Neuroimaging is utilized to evaluate the suspected cases of secondary headaches. We present here three cases of headaches which were diagnosed on magnetic resonance imaging (MRI) as intracranial hypotension (IH).

Case reports

Case 1

A 19-year-old male patient presented with history of severe headache on and off for the last 4 months which was localized to occipital region and nape of neck. The patient was apparently asymptomatic till 4 months back when he sustained a flexion injury to neck while playing volleyball and developed severe headache 4 h later which was relieved

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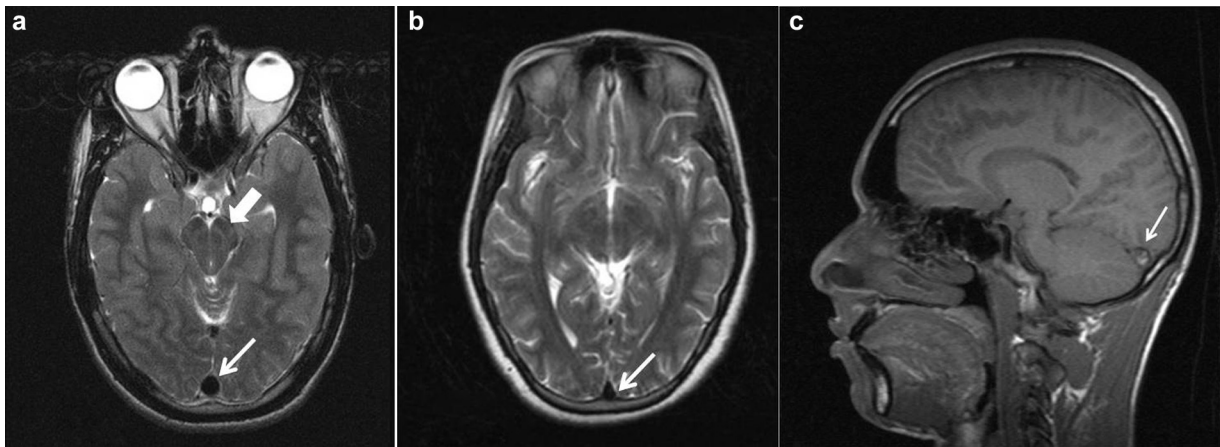


Fig. 1 – (a) Axial T2WI showing anteroposterior elongation of mid brain (block arrow) and rounded superior sagittal sinus (arrow). (b) Axial T2WI shows normal appearance of superior sagittal sinus having triangular configuration for comparison (arrow). (c) Sag T1W image showing venous distension of dominant right transverse sinus as convex bulging of superior border (arrow).

by rest and hydration. The MRI brain and computerized tomography (CT) neck done a week later were reported as normal. For the next 4 months, the patient suffered multiple episodes of such severe headaches which were typically brought on when the patient was standing or sitting and was relieved by lying down. There was no association with physical exertion or time of the day. General examination was normal, and there was no neck stiffness, rigidity, or swelling. Routine laboratory investigations such as complete hemogram, urine routine examination (RE), blood sugar, urea, and serum creatinine were within normal limits. Central nervous examination revealed normal higher mental functions, with no

motor or sensory deficit, cranial nerve assessment was normal, and deep tendon jerks were normal. Fundus examination was normal. Based on the history and examination, clinical suspicion of IH was raised and the patient was subjected to MRI evaluation. MRI brain revealed anteroposterior elongation of mid brain and rounding of the superior sagittal sinus on axial T2W image and convex superior border of dominant right transverse sinus on Sag T1WI (Fig. 1a-c), and sagittal T1W image showed brainstem sagging, tonsillar herniation, flattening of central pons, and effacement of prepontine cistern (Fig. 2). The mamillopontine distance was 4 mm (Fig. 3) and the pontomesencephalic angle was 33.1°



Fig. 2 – Sag T1W image showing tonsillar herniation (arrow), flattening of central pons, and effacement of prepontine cistern (broad arrow).

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