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Case Report

Recurrent head thump sensations: two cases suggesting a novel headache phenotype

Marcelo Moraes Valença[1,2,3,4], Rita Santana dos Reis[1], Florisvaldo José Morais Vasconcelos Júnior[1], Claudia Cristina de Lira Santana[1,4], Bruno Felipe Novaes de Souza[1,4], Juliana Ramos de Andrade[1,3], Mario Fernando Prieto Peres[5,6]

[1]Federal University of Pernambuco, Recife, Pernambuco, Brazil
[2]Hospital Esperança, Recife, Pernambuco, Brazil
[3]Instituto Keiso Azami, Federal University of Pernambuco, Recife, Pernambuco, Brazil
[4]Unimed Recife Hospital Complex, Recife, Pernambuco, Brazil
[5]Institute of Psychiatry, Hospital das Clínicas, University of São Paulo School of Medicine, São Paulo, São Paulo, Brazil
[6]Hospital Israelita Albert Einstein, São Paulo, São Paulo, Brazil

Marcelo Moraes Valença
mmvalenca@yahoo.com.br

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Raimundo Pereira Silva-Néto

Introduction
Paroxysmal cranial sensations without pain are rarely reported and remain poorly characterized within current headache classifications. Although entities such as primary stabbing headache or epicrania fugax are defined by brief, sharp pain, non-painful focal cranial paroxysms are uncommon and understudied. We describe two cases of recurrent, brief, non-painful "head thump" sensations involving the vertex or parietal regions, persisting for over one year, to increase awareness of this atypical sensory phenomenon.

Case Reports
The first case involves a 60-year-old woman with a 7-year history of spontaneous sensations described as a sudden "thump" or "blow" localized to the vertex. Episodes lasted approximately 2 seconds and occurred about once per month. She denied pain, auditory or visual symptoms, dizziness, nausea, aura, or autonomic features. Events occurred in various positions and were not triggered by movement or Valsalva maneuvers. Neurological examination was normal, and there was no relevant medical history.

The second case is a 40-year-old woman who experienced brief jolt-like sensations lasting about 3 seconds, localized to a 3-cm area in the left mid-parietal region, often while seated and working. These episodes were immediately followed by a non-painful, warm, heavy sensation extending over a 6–8 cm area, lasting approximately 30 minutes. The phenomenon was non-pulsatile and not associated with nausea, photophobia, or phonophobia. Episodes occurred spontaneously 2–3 times per month over 18 months and were rated as mildly bothersome but not painful.

Comment and Conclusion
These presentations do not conform to existing ICHD-3 diagnoses and may represent a benign primary cranial sensory paroxysm. Differential diagnoses include focal sensory epileptic phenomena or peripheral neuropathic events; however, the ultra-brief, stereotyped, non-painful nature and long-term stability favor a benign entity. Recognition of such cases may contribute to improved classification and understanding of non-painful cranial paroxysms.

Keywords:
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Introduction

Paroxysmal cranial sensations without associated pain are rarely reported in clinical practice (1). Most primary headache disorders with paroxysmal presentations, such as primary stabbing headache or *epicrania fugax*, are characterized by sharp or electric shock-like pain. In contrast, non-painful cranial phenomena remain poorly understood and often go unclassified in the current International Classification of Headache Disorders (ICHD-3) (2).

We present two cases of recurrent, brief, non-painful focal cranial sensations with long-term stability and no associated neurological, autonomic, or systemic symptoms. By detailing the clinical characteristics and temporal profile of these events, this report aims to contribute to the description of atypical cranial sensory paroxysms and to support their recognition in routine neurological practice.

Case reports

Case 1

A 60-year-old woman presented with a 7-year history of a recurrent cranial sensation described as a "thump" or "blow" localized at the vertex. The episodes were spontaneous, lasted approximately 2 seconds, and occurred about once a month. The patient explicitly denied any pain, describing the sensation as startling but not distressing. There were no accompanying symptoms such as sound, visual disturbance, dizziness, or nausea. She reported that the episodes could occur while lying down, sitting, or walking, and were not triggered by physical activity, head movement, or Valsalva maneuvers.

During episodes, the patient would stop her activity due to a brief fear of losing balance, although no actual falls occurred. She denied any sensation of pressure, stabbing, or pulsation. There was no identifiable aura or post-event fatigue. She had no history of hypertension, diabetes, smoking, or recent trauma. Her weight and general health were within normal limits. Neurological examination was unremarkable.

Case 2

A 40-year-old woman reports a brief "jolt-like" sensation, described as a sudden blow or shock lasting about 3 seconds, localized to a 3-cm area in the left mid-parietal region. This often occurs while she is seated and working. Immediately afterward, she experiences a bothersome heaviness, as if something warm were pulling toward the left side, involving a 6–8 cm area of the left parietal region. This second sensation lasts approximately 30 minutes. It is not pulsatile and is not accompanied by nausea, photophobia, or phonophobia.

These episodes occur spontaneously, without identifiable triggers, about 2–3 times per month over the past 18 months. She rates the intensity as 4/10 but does not consider it to be pain.

Her medical history is notable for migraine with visual aura, with headache predominantly on the left side, currently occurring on 15 days per month. She denies medication overuse, hypertension, diabetes, and smoking. Brain MRI revealed an image suggestive of a small arachnoid cyst measuring 2.5 × 0.9 × 2.3 cm, causing enlargement of the extra-axial space in the left occipital region, without contrast enhancement (Figure 1).

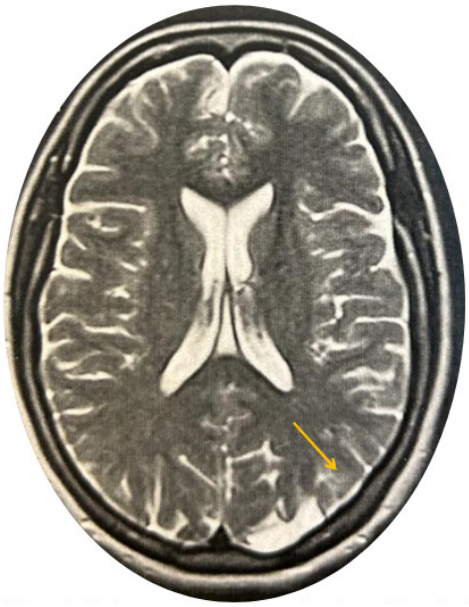

Figure 1. Brain magnetic resonance imaging of Case 2 showing (arrow) findings suggestive of a small arachnoid cyst in the left occipital region, measuring approximately 2.5 × 0.9 × 2.3 cm, with enlargement of the adjacent extra-axial space and no contrast enhancement.

Discussion

These cases describe a unique cranial sensory phenomenon characterized by episodic, non-painful sensations localized to the head. The brief duration and focal distribution resemble primary stabbing headache; (2–11) however, unlike that disorder, the sensations are not painful and lack the typical "icepick-like" quality that defines primary stabbing headache. Similarly, epicrania fugax (12–17) presents with very brief painful episodes that often radiate along a trajectory, features not present here. Epicrania fugax is characterized by short, sudden bursts of pain that spread across the scalp, traveling in a

straight or zigzagging path and crossing various cranial nerve regions (13).

These cases do not fulfill criteria for any established primary headache disorder under ICHD-3. It also lacks signs suggestive of a seizure, transient ischemic attack, or sensory aura. The description is not consistent with typical paresthesias, as the sensation is a single, isolated event rather than tingling or numbness. The strictly localized, paroxysmal nature raises the possibility of a benign parietal lobe sensory discharge, although the absence of associated symptoms makes epileptiform activity unlikely.

Importantly, this sensory phenomenon has remained stable for more than one year, with no progression in frequency, duration, or associated symptoms. The lack of warning signs (e.g., focal deficits, cognitive changes, or systemic signs) and the stereotyped nature of the episodes support a benign etiology. Although not mandatory, brain MRI may be considered to exclude rare structural causes involving the parietal lobe, cortical dysplasia, or vascular malformations. We considered the arachnoid cyst found in the second reported woman to be an incidental finding, unrelated to the described phenomena.

The pathophysiology may involve brief, localized dysfunction of somatosensory cortical areas or transient discharges within pericranial sensory afferents. To our knowledge, similar cases have not been extensively reported, suggesting a potential underrecognition of benign, non-painful paroxysmal cranial events.

As a differential diagnosis, consider Exploding Head Syndrome (EHS) (18–23), a rare parasomnia in which patients perceive a sudden, very loud noise or explosive sensation inside the head at sleep–wake transitions. Although alarming, EHS is not associated with true pain or physical injury. Individuals typically describe the event as a bang, explosion, gunshot, or electrical surge that seems to originate intracranially. The episode may be accompanied by brief visual phenomena (for example, flashes of light), acute fear or panic, and transient autonomic signs such as tachycardia and sweating (19). The exact pathophysiology of EHS remains unclear. Hypotheses include transient dysregulation of the reticular formation during transitions between sleep stages, sudden bursts of neural activity in the auditory cortex, or brainstem dysfunction involving arousal mechanisms (19,24,25). It has also been speculated to share some overlap with other parasomnias, such as sleep paralysis (26).

Conclusion

We report two rare cases of a recurrent, non-painful head thump sensation occurring in otherwise healthy women. This sensory phenomenon does not fit within existing headache or neurological classifications but appears benign and self-limited. Increased awareness and documentation of such cases may improve understanding of atypical cranial sensory syndromes.

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Marcelo Moraes Valença
https://orcid.org/0000-0003-0678-3782
Rita Santana dos Reis
https://orcid.org/0000-0002-9868-2411
Florisvaldo José Morais Vasconcelos Júnior
https://orcid.org/0009-0003-0605-1044
Claudia Cristina de Lira Santana
https://orcid.org/0000-0001-5571-2003
Bruno Felipe Novaes de Souza
https://orcid.org/0000-0001-5738-3717
Juliana Ramos de Andrade
https://orcid.org/0000-0002-5445-8872
Mario Fernando Prieto Peres
https://orcid.org/0000-0002-0068-1905

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