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Case Report

Corpalgia associated with migraine: a case report

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Introduction
Corpalgia is a phenomenon associated with chronic migraine, in which the patient experiences painful hypersensitivity in the cephalic and extracephalic regions.
Objective
To describe the case of a patient with chronic migraine who experienced an episode of corpalgia.
Case report
This is a 19-year-old woman with chronic migraine for over two years. The patient reports that upon waking, in the midst of a migraine episode, she felt intense pressure in the upper and lower limbs corresponding to the side of the headache, lasting approximately 8 hours.
Conclusion
Corpalgia is a rare phenomenon that differs from other symptoms in its characteristics, such as intensity and duration. It can manifest itself uniquely for each patient.

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Introduction

Corpalgia is a phenomenon that can occur in patients with migraine, in which pain extends beyond the head and is perceived in other regions of the body during an attack. It can be well-localized or nonspecific (1–4). Unlike sensory aura, which is transient and typically lasts less than 60 minutes, corpalgia can persist for hours (5,6). This uncommon manifestation remains poorly described in the literature, raising important questions about its underlying mechanisms and clinical implications. In this article, we present the case of a 19-year-old woman patient with an episode of migrainous corpalgia.

Case Report

We report the case of a 19-year-old woman, 1.55 m in height and weighing 64 kg, with a long-standing history of migraine that had become more frequent over the past two years. Occasionally, her headaches were preceded or accompanied by visual aura, consisting of white luminous spots lasting about 10 minutes during the attack. Her headaches were frontal, pulsatile, unilateral (sometimes alternating sides) or bilateral fronto-temporo-parietal, associated with nausea, vomiting, phonophobia, and photophobia, reaching a severity of 10/10 on the visual analog scale (VAS). She admitted to excessive use of analgesics, with compulsive medication-seeking behavior as observed by her mother. For the past year, she has been on escitalopram for anxiety and depression.

One week prior to medical evaluation, she experienced a migraine attack located on the left hemicranium, accompanied by ipsilateral hemibody pain. The body pain was described as "tensional," resembling post-exercise muscle soreness, rated 6/10 compared to 10/10 for the head migraine pain. Both pains appeared upon awakening. The corpalgia lasted for 8 hours, while the headache persisted for several additional hours.

Discussion

This case highlights corpalgia as a rare manifestation of migraine. Several mechanisms may be associated with this phenomenon.

One possible mechanism for the existence of body pain as a migraine phenomenon is central sensitization, a well-described mechanism in chronic migraine, in which repeated activation of the trigeminovascular pathways lowers the threshold for pain perception (7). Patients with central sensitization have been shown to experience pain disproportionate to the nature of the pathology, hyperalgesia with the presence of allodynia and diffuse pain, and musculoskeletal hypersensitivity (7,8). Furthermore, widespread activation of second- and third-order neurons in the caudal trigeminal nucleus and thalamus may extend pain perception beyond the head, potentially explaining the involvement of the hemibody. In an experimental study conducted with mice to evaluate metabolic alterations between energy metabolism and excitatory and inhibitory neurotransmitters in the brain under migraine-like conditions, it was observed that important metabolites such as AMP (adenosine monophosphate), NAD+ (nicotinamide adenine dinucleotide), ADP (adenosine diphosphate), inosine, IMP (inosine monophosphate), and ATP decrease dramatically in conditions similar to chronic migraine. Furthermore, migraine-like conditions lead to a quantitative increase in excitatory neurotransmitters and a decrease in inhibitory agents, leading to dysregulation of brain sensitization (9).

Another aspect related to corpalgia is its ability to overlap with other symptoms, such as aura and allodynia. Unlike the classic sensory aura, which manifests as tingling or numbness and lasts less than 60 minutes, corpalgia in this patient persisted for 8 hours, suggesting a distinct process. This prolonged duration and quality of muscle pain contradict a typical aura mechanism, reinforcing the role of central sensitization. Migraine is related to the interaction of central and peripheral structures; in this context, clinical manifestations are extremely varied, making patient treatment difficult. For example, the structures of the trigeminal-cervical system are implicated in the initiation and maintenance of pain input in peripheral regions of the body, such as the cervical spine. In turn, peripheral stimulation leads to the activation of CNS structures, such as the thalamus, hypothalamus, cerebral cortex, and brainstem, leading to body hyperalgesia (10).

Dysregulation of the serotonin (5-HT) and calcitonin gene-related peptide (CGRP) pathways, both central to the pathophysiology of migraine, may also contribute to the spread of pain perception beyond the cephalic regions. Elevated levels of pro-inflammatory mediators can activate nociceptors within and outside the trigeminovascular system (11–13).

Corpalgia can lead to diagnostic confusion, being misinterpreted as fibromyalgia, psychogenic pain, or even a neurological deficit, as well as being confused with other symptoms, such as allodynia (6). Therefore, recognizing corpalgia as a phenomenon related to migraine and its characteristics is crucial to prevent misdiagnosis.

A study of three cases of patients with episodes of corpalgia demonstrated that each patient may have a different painful area, which may be cephalic or extracephalic (1). Furthermore, the same patient may have sensitized

areas in varying ways depending on the episode, or they may often appear in overlapping patterns. The pain can also be described differently, sometimes with sensations of throbbing, tightness, burning, pressure, or even milder. Furthermore, the duration of pain varies, lasting from minutes to hours. In common, each patients presented excessive use of analgesics (1). The presence of medication overuse in this patient highlights the need for careful management, since central sensitization is aggravated by the excessive use of acute medications.

Conclusion

Corpalgia may occur as part of the migraine spectrum and should be distinguished from sensory aura. While the underlying pathophysiology likely involves central sensitization and thalamic dysfunction, further studies are required to clarify its mechanisms. Clinicians should be aware of this phenomenon to avoid misdiagnosis and to ensure adequate patient management.

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