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CASE REPORT

Administration of palmitoylethanolamide in combination with topiramate in the preventive treatment of nummular headache

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Abstract: Nummular headache has been recently described as a primary disorder characterized by head pain exclusively felt in a small rounded area typically 2–6 cm in diameter, not attributed to another disorder. Both size and shape of the painful area remain constant since the onset of symptoms. A 57-year-old woman presented with a history of focal episodic pain in a circumscribed area on the right parietal region. The administration of standard oral doses of palmitoylethanolamide and topiramate in combination showed an improvement in pain symptoms and on pain measuring scales.

Keywords: algometry, migraine, nummular headache, palmitoylethanolamide, topiramate

Introduction

Nummular headache (NH) was described in 2002 by Pareja et al.[1] According to the *International Classification of Headache Disorders*, 3rd edition, beta version, it is a type of headache included under the category of other primary headaches.[2] NH is characterized by a unifocal superficial localized pain, generally in the parietal scalp, confined to a small area like a coin, usually 2–6 cm in diameter. This type of headache is not frequent; only 200 cases have been reported till now. Females are affected more than males, with a ratio of about 2:1 and an average age of 40 years. Pain intensity is generally mild or moderate, with periods of remission still tending to become chronic.[3–6] In some cases, NH is described along with other types of neuralgias or neoplastic brain disorders (a case of meningioma) or malformations, such as an arachnoid cyst.[7] An alteration of the skin trophism (alopecia)[8,9] or use of cosmetic dyes in the affected area associated with NH was also reported. Medical treatment with nonsteroidal anti-inflammatory drugs, gabapentin, and antidepressants, such as amitriptyline, may be supported by the administration of botulinum toxin and transcutaneous electrical nerve stimulation. However, the results were variable in terms of pain response, ranging from little to discrete effectiveness.

Case report

We report a case of a 57-year-old woman with a history of 10 years of superficial cranial pain in a rounded area of the right parietal region described as a coin. The patient provided written informed consent to publish this case report. Pain was described as a daily, subcontinuous one, with exacerbations in some periods. The patient had no personal or family history of typical forms of primary headache, but she was a habitual consumer of

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painkillers and antianxiety drugs. Computed tomography, brain magnetic resonance imaging, and routine blood tests showed no abnormalities. On admission, ~8 months ago, neurological and general examinations were unremarkable with neither sensory symptoms nor local trophic changes within the affected regions of the head, except cranial superficial pain, located in the right parietal scalp, round like a coin. The pain did not change on applying finger pressure, and no trophic changes were visible in the pain area. Therefore, we measured the area affected by pain, and we found a diameter of ~4 cm. We also used pain measuring scales such as visual analog scale (VAS), numerical rating scale (NRS), and verbal rating scale (VRS), and the patient rated the pain intensity score as 7 of 10 on VAS (0= no pain and 10= the worst imaginable pain), 7 on NRS, and severe pain on VRS. In fact, the patient reported to be in a period of exacerbation of pain several times a day. Magnetic resonance imaging and X-ray examination of the skull, as well as an ultrasound examination of the scalp, confined to the affected area, were normal. Therefore, we decided to refer the patient to preventive therapy with topiramate, at a dose of 50 mg × 2/d tablet, for a month, after which we carried out the first clinical control. After about a month, the patient reported a small change in the rating scales of pain (6 on VAS, 6 on NRS, and severe pain on VRS). A 600 mg/d tablet of palmitoylethanolamide (PEA) was then added to topiramate for a period of about a month. After 1 month, she again reported a slight improvement in pain rating scales (5 on VAS, 5 on NRS, and mild to moderate–severe pain on VRS). After 2 months of prophylaxis, the follow-up showed a clear change of parameters (2 on VAS, 3 on NRS, and moderate-to-mild pain on VRS). Therefore, a further observation period of 2 months was proposed, reducing the topiramate first at 50 mg/d tablet and then at 25 mg/d tablet and maintaining the same dose of PEA. Subsequent control showed further improvement in the parameters (1 on VAS, 1 on NRS, and no or mild pain on VRS). Currently, the patient manifests a certain satisfaction in the improvement of clinical symptoms.

Discussion

The present case fulfilled the diagnostic criteria of NH according to the *International Classification of Headache Disorders*, 3rd edition.[2] The case that we observed and treated highlights two interesting points: first, the excellent response to prophylactic therapy, consisting of two drugs, both used for neuropathic pain, supports the theory that this type of headache is due to an activation of the trigeminal vascular system, according to which the stimulation of the trigeminal fibers would cause the release of algogenic substances such as substance P, calcitonin gene-related peptide, and neurokinin A, resulting in neurogenic inflammation. On the other hand, the location of the pain so limited and superficial clinically confirmed the involvement of cutaneous branches of the trigeminal sensory fibers.[8,10] The second point concerns the empirical use of PEA, an endogenous lipid, that may reduce neuropathic pain through the modulation of the activity of mast cells and microglial cells. In particular, PEA, keeping within certain limits of degranulation of mast cells, prevents the alteration of the relationship between nerve fibers and vessels of the microcirculation, thus preventing the onset of inflammatory edema.[11] In the case described, the effectiveness of PEA as a prophylactic therapy for NH is clear, as demonstrated by the improvement in rates of pain measuring scales, with excellent clinical response, as evidenced also by the gradual improvement in pain symptoms, despite the reduction of topiramate.[12] No adverse effects related to the drugs administered were reported during the observational periods, but a case series or clinical trial is necessary for the future.

Conclusion

NH is a rare nosological entity, which is clinically relevant, because of its pain characteristics. It is generally subcontinuous and occurs in a small enclosed area of the scalp, which might be due to possible activation of the trigeminal vascular system. The particular topography suggests that the pain has a probable epicranial source conveyed by, or originated in, a few terminal branches of the cutaneous nerves of the scalp. The case reported herein has shown remarkable efficacy of the prophylactic therapy adopted, topiramate and PEA in combination, which led to a significant improvement in pain symptoms and intensity that gradually improved.

Disclosure

The authors report no conflicts of interest in this work.

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