

Nummular Headache responding to Oxcarbazepine: A Rare Case

Sir,

Nummular headache (NH) is a chronic headache disorder with mild-to-moderate pressure-like pain in a small round/elliptical area of the head, lasting for minutes to hours in absence of any lesion of the underlying structures. NH was first described by Pareja *et al.* in 2002 with nearly 200 cases reported in the medical literature.^[1] NH differs from other headache syndromes in its

characteristics of constant location, size, and shape of the affected area during each attack.^[2] NH is categorised in Part 1 “Primary Headache Disorders” (4.8) in the International Classification of Headache Disorders (ICHD-III). Medications reported to provide relief in NH are tricyclic antidepressants (TCA), anticonvulsants, local anesthetics, and botulinum toxin, yet no definite medication has been reported to treat NH completely.^[3]

We report a case of primary nummular headache who responded to oxcarbazepine.

A 54-year-old male presented with a history of continuous persistent unilateral headache for 4 years. The pain was located in left parietal region of severity 5–6/10 on a Visual Analogue Scale. The headache was sharply contoured, fixed in size. The patient described it to be like a five Indian rupee coin placed on the left parietal part of his head. It was not associated with any of nausea, vomiting, photo-phono-phobia, rhinorrhea, lacrimation, conjunctival injection, or focal neurologic symptoms. He was normal on physical examination. His magnetic resonance imaging of head with contrast was normal. He had received multiple treatments in the past with no response to any of paracetamol, aspirin, indomethacin, etoricoxib, and tramadol. Other agents including amitriptyline, topiramate, verapamil, propranolol, and benzodiazepine did not lead to any improvement.

A diagnosis of nummular headache based on ICHD-III beta classification was considered. Gabapentin titrated gradually up to a dose of 1200 mg/day had no benefit. When oxcarbazepine was titrated to a dose of 900 mg/day over a week, he reported complete improvement and continued it for a period of 3 months with complete pain relief. When he defaulted oxcarbazepine, he had recurrence of symptoms in 2 weeks. Subsequent restarting of oxcarbazepine led to the complete improvement of all symptoms again. We followed the patient for one year subsequently, and found that the patient became symptom-free while on oxcarbazepine.

Since the first description by Pareja *et al.*, newer studies have expanded the clinical learning of NH. Nummular headache is of mild-to-moderate in intensity and constrained to the round or elliptical 2 to 6 cm area of the scalp lasting for minutes to hours with the background pain being constant.^[1,4] The affected area continues to be hyperesthetic, allodynic, paresthetic, and/or tender despite the pain being remitted after the paroxysm.^[5] The most common region of the scalp affected by NH is the parietal region.^[6] NH is not associated with nausea, retching, light or sound affectability, rhinorrhea, lacrimation, conjunctival reddening, or focal neurologic manifestations.

The presumed pathology is that the pain originates from epi-cranial tissues such as the inner and outer layer of skull and almost all layers of scalp including branches of epi-cranial nerves. This hypothesis suggests pain confinement to the localized area.^[7] There has been a debate of NH being linked to Herpes zoster (VZV) infection, epicrania fugax (EF), or trigeminal neuralgia (TN). Chen *et al.* described the relationship between VZV infection and NH. They noted a case where a patient had two episodes of focal headache of similar characteristic as NH. During the second episode, cluster of vesicles with the erythematous base were observed within the same region of the head, which was diagnosed to be Herpes Zoster due to VZV infection. The main differing point is that NH occurs for a short duration and mainly on the parietal region in a shape of a coin, whereas pain of shingles

occurs for a longer duration and even anywhere in the body at a specific dermatome including the parietal region.^[2] There are a few similarities between NH and EF as described by Herrero-Velázquez *et al.* In their case, EF resembles NH when there is interictal pain remains in a well-circumscribed area. When this area is highly localized with the sharp borders, it acquires round pattern resembling NH. The difference between these two epi-cranial headache syndromes is that EF can radiate with a rapid movement of the head, which is not seen in NH according to the ICHD-III criteria.^[7] Cupka *et al.* reported a case of TN evolving into NH. They mentioned a patient who had three episodes of pain among first was a left retro-orbital pain radiating to left eye and left occipital region, second was the superficial, lancinating, intermittent pain on the left side of the face lasting for seconds to minutes consistent with TN, and third was more confined and elliptical to the left temporal-parietal region with allodynia on the affected area considered with NH. The main difference between TN and NH is that TN lasts for few seconds to minutes is located mainly unilaterally on the face and triggered by shaving, brushing, chewing, etc.^[8]

NH has been tried to be treated with trials of medications like gabapentin, indomethacin, nortriptyline, topiramate, amitriptyline, duloxetine, clomipramine, local interventions like auriculotemporal nerve blocks, local subcutaneous lidocaine application, local botulinum toxin, and local transcutaneous electric nerve stimulation in few successful cases.^[3] Man *et al.* described Carbamazepine as the treatment of choice for NH in their reported case where it relieved the intensity of pain and frequency of attacks. It works best when the patient has a lancinating pain attacks similar to what can be seen in TN and Occipital neuralgia.^[3]

Our patient did not have any relief with multiple treatments, but had complete relief with oxcarbazepine. The pain recurred on defaulting oxcarbazepine and improved again on resumption confirming the response. We could have started carbamazepine as well when he had relapse after default with oxcarbazepine, but as he had complete relief with oxcarbazepine, the patient was not willing to try any other medicine. Both carbamazepine and oxcarbazepine work with the same mechanism of inhibition of activated voltage-gated sodium channels, stabilizing the hyper excited neuronal membrane and thus stopping the seizure activity and pain signals sent to the brain, thus working as analgesic in neuropathic pain and headache disorders. Therefore, it can be helpful in alleviating pain in NH. Considering the improvement in our patient with oxcarbazepine, NH may share similar pathologic mechanisms with trigeminal neuralgia. The links among NH, trigeminal neuralgia, and epicrania fugax need to be studied further to have a better understanding of this rare syndrome.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other

clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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