Headache Medicine

ID: 49

From central pharmacology to peripheral modulation: multisite nerve blockade for hemicrania continua when indomethacin is contraindicated

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Introduction

Hemicrania continua (HC) is a primary headache within trigeminal autonomic cephalalgias, defined by continuous strictly unilateral pain with superimposed exacerbations and ipsilateral cranial autonomic features. Absolute response to indomethacin is the diagnostic hallmark per the International Classification of Headache Disorders, 3rd edition (ICHD-3). However, long-term indomethacin is often limited by gastrointestinal, renal, and cardiovascular toxicity. We describe a patient with HC and chronic kidney disease in whom multisite peripheral nerve blockade provided durable pain control.

Case presentation

A 42-year-old woman with stage 1 chronic kidney disease presented with a 6-month history of continuous right-sided periocular, hemifacial, and parietotemporal pain with allodynia, and exacerbations of moderate intensity lasting minutes to hours. She also had stabbing pains of 3 to 5 seconds, occurring 1 to 3 times daily in the same region. Most episodes were accompanied by ipsilateral lacrimation, conjunctival injection, and nasal congestion. Oral indomethacin in ascending doses over 30 days produced complete pain relief, confirming HC per ICHD-3 criteria, and was discontinued due to renal contraindication. Topiramate at 50 mg/day was partially effective. A nerve blockade was performed targeting the greater and lesser occipital, auriculotemporal, supraorbital, and supratrochlear nerves, and the sphenopalatine ganglion, with 2% lidocaine. The patient was pain-free for 14 days. Later recurrences responded to simple analgesics, and improvement persisted at 2-month follow-up.

Discussion

The choice of multisite peripheral nerve blockade was based on its known central mechanism and on prior reports of efficacy in HC. Local anesthetic blocks afferent nociceptive input from the targeted nerves. Functional imaging in HC has shown activation of the contralateral posterior hypothalamus and ipsilateral dorsal rostral pons, involved in descending pain modulation. Reducing peripheral input may interrupt this descending facilitation. Adding the sphenopalatine ganglion engages parasympathetic outflow, clinically relevant in HC given the autonomic features. An open-label series showed multisite blockade achieving response rates above 80% in HC, higher than isolated occipital blockade, with a safety profile more favorable than that of chronic indomethacin. Serial blockade may serve as maintenance when indomethacin remains contraindicated. Paroxysmal hemicrania, which is abolished by indomethacin, was ruled out by the continuous baseline pain. Short-lasting unilateral neuralgiform headache attacks with conjunctival injection and tearing or with cranial autonomic symptoms were ruled out because they do not respond to indomethacin.

Conclusion

Multisite peripheral nerve blockade with sphenopalatine ganglion targeting should be considered as a transitional or maintenance therapy in HC patients with contraindications to indomethacin, including chronic kidney disease.

Keywords:
Trigeminal autonomic cephalalgia
Hemicrania continua
Nerve block

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