A Very Rare Type of Neuralgia: Nervus Intermedius Neuralgia

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Dear Editor,

The nervus intermedius, which is the peripheral part of the facial nerve, has visceral motor and special sensory fibers. First described in 1563, the nerve was referred to as “*portio media inter communicantem faciei et nervum auditorium*” by Heinrich August Wrisberg in 1777 (1). The word “intermedius” is used because of the intermediate position of the nerve between the superior part of the vestibular nerve and the facial nerve (2). The nervus intermedius enters the internal auditory meatus immediately after leaving the brainstem and travels with the facial nerve through the facial canal (Figure 1). According to the diagnostic criteria of the International Classification of Headache Disorders, 3rd edition (beta version), nervus intermedius (facial nerve) neuralgia (NIN) is a rare disorder characterized by brief paroxysms of pain felt deep in the auditory canal that sometimes radiates to the parieto-occipital region (3).

A 55 year-old woman presented to a hospital with very severe burning sensation and stinging pain attacks that persisted for seconds and often occurred during the day in her right ear. From her past medical history, it was understood that she had diabetes mellitus, hypertension, and hyperlipidemia. In addition, she was involved in a car accident seven years ago, which resulted in loss of consciousness and high-resolution magnetic resonance image of the brain and inner ear were normal. Hypoplasia of the anterior cerebral artery on the right side was seen during brain magnetic resonance angiography. Moreover, her temporal bone computed tomography image was normal. She had insignificant presbycusis bilaterally during her audiological evaluation. Thus, in line with existing evidence, she was diagnosed with NIN, and following six months of treatment with 1200 mg/day of gabapentin, her pain attacks stopped.

While the most common cause of cranial neuralgia is trigeminal neuralgia, limited data are available on the incidence of NIN. However, NIN is very rare; the number of cases found between 1932 and 2012 was less than 150 (4). Other neurological and otolaryngological etiologies should be excluded in patients with NIN, which is mostly seen in middle-aged women. Therefore, it is essential to thoroughly examine the head, ear, nose, throat, face, and neck of patients. When there is no underlying etiology, it is referred to as classical NIN. Some secondary reasons have been reported: herpes zoster, temporomandibular joint dysfunction, nasopharyngeal carcinoma, petrous bone osteoma, and neuroborreliosis (5,6).

Depending on the patient's condition, there are several treatment options such as surgical treatment, physical

Figure 1. Anatomy of the facial and intermedius nerve

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therapy, analgesic treatment, and nerve block. While antiepileptic drugs such as carbamazepine, gabapentin, baclofen, or amitriptyline can be used for medical treatment, radiofrequency gangliolysis, retrogasserian glycerol injections, microvascular decompression surgery, and the gamma knife system are other treatment modalities.

Nervus intermedius neuralgia should be considered as a differential diagnosis if a patient presents with paroxysmal localized pain in the ears.

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