J Oral Maxillofac Surg
59:453-456, 2001

Acyclovir Treatment in 2 Patients With Benign Trigeminal Sensory Neuropathy

Miguel Peñarrocha, MD, José Vicente Bagán, MD,†*
Alberto Alfaro, MD,‡ and María Peñarrocha, MD§

Idiopathic trigeminal sensory neuropathy (TSN) is characterized by transient sensory disturbances in the distribution of one or more branches of the trigeminal nerve. Pain is not a typical complaint. Although the symptoms may last from days to years, complete recovery is normal in half of the patients.[1,2]

A viral theory has been postulated as the cause of TSN.[3-8] In support of this hypothesis, herpes simplex virus oral mucosal lesions have been reported in patients with trigeminal neuropathies,[9] and 2 cases of recurrent idiopathic TSN have been described.[10]

This report describes 2 patients with facial numbness diagnosed as TSN who had associated ulcerated oral lesions and who were cured with acyclovir. These results favor a viral etiology and suggest the possibility of treating TSN with antiviral agents.

Report of Cases

The diagnostic criteria for TSN are as follows[1]: 1) sensory loss symptoms limited to the territory of one or more of the 3 branches of the trigeminal nerve; 2) absence of any underlying condition that could have explained the symptoms, especially dental and facial trauma, neoplasms, mul-

* Assistant Professor of Oral Medicine, School of Dentistry, University of Valencia, Valencia, Spain.

† Professor and Chairman of Oral Medicine, School of Dentistry, University of Valencia, Valencia, Spain.

‡ Associate Professor of Neurology, La Fe University Hospital, University of Valencia, Valencia, Spain.

§ Associate Professor of Oral Medicine, School of Dentistry, University of Valencia, Valencia, Spain.

Address correspondence and reprint requests to Dr Peñarrocha-Diago: Clínicas Odontológicas, Facultad de Odontología, c/Gascó Oliag 1, 46010-Valencia, Spain; e-mail: penarroc@uv.es

0278-2391/01/5904-0018$35.00/0
doi:10.1053/joms.2001.21887

tiple sclerosis, and vertebrobasilar vascular disease; 3) no abnormalities in the panoramic or maxillary sinus radiographs, or craniofacial computed tomography (CT) scans; 4) a negative test for syphilis; 5) adequate follow-up for persistence of symptoms; and 6) exclusion of psychiatric disorders.

CASE 1

A 38-year-old woman presented with a history of episodic seasonal left facial numbness over the past 10 years. The symptoms reappeared each year in autumn, lasted the entire winter, and disappeared in the summer (ie, duration of 6 to 8 months). We had witnessed the seasonal occurrence of symptoms on 2 occasions.[10] There were no other antecedents of disease. Numbness began at the tip of the tongue, gums, and lips and spread through the lower half of the face to affect the entire left side of the face (Fig 1). The patient had difficulty speaking and swallowing because of repeated inadvertent biting of the tongue and lips. The lips and tongue were always the last regions to improve.

Clinical examination revealed moderate hypoesthesia to pinprick and touch in the region of the second and third branches of the left trigeminal nerve. The remainder of the neurologic examination, which included corneal reflexes and trigeminal motor function, was normal. Intraoral examination revealed a small fibroma on the tip of the tongue, caused by biting, and a small ulceration of the gum adhered to the lower right first premolar. Urinalysis, blood tests, and the sedimentation rate were normal. Serology for syphilis was negative. Serum immunoglobulin (Ig) G antiherpes simplex virus antibodies (1:1,280) and serum IgG antiherpes zoster antibodies were positive (1:1,200 and 1:640, respectively). An enzyme-linked immunosorbent assay showed that the IgM antivirus antibodies were negative. A CT scan of the skull base and mandible were normal. A magnetic resonance imaging (MRI) study of the brain was also normal. The neurophysiologic study of the trigeminofacial reflex (blink reflex) and trigeminal somatosensory evoked potentials were normal on both sides of the face.

Oral acyclovir was given (1,000 mg daily, for 10 days) starting from the appearance of symptoms (ie, when perioral numbness was first noted). The symptoms disappeared entirely after the treatment. The patient was followed for 3 more years; the first year numbness did not develop in the usual winter period, whereas in the subsequent 2 years numbness did appear and again disappeared after receiving acyclovir treatment.

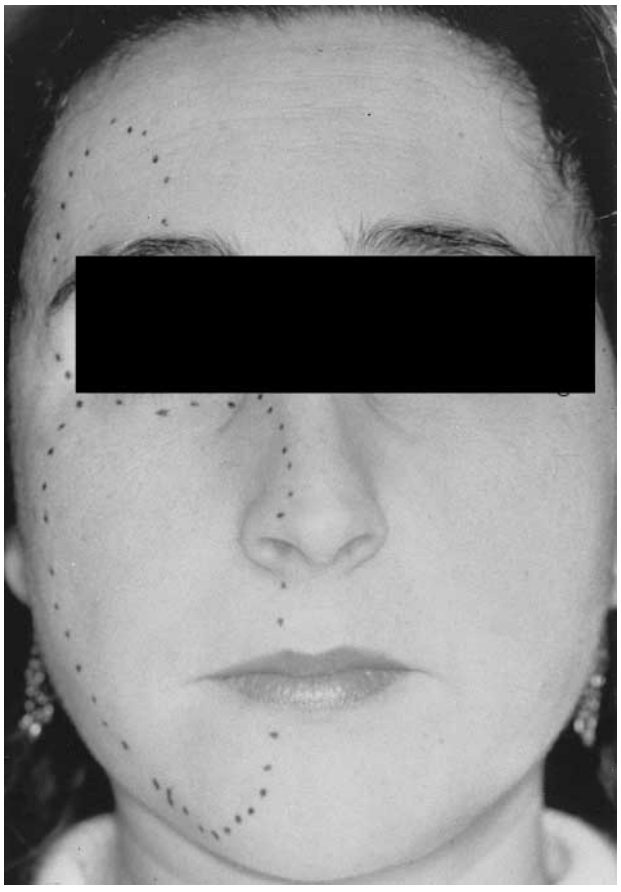

FIGURE 1. Area of hypoesthesia corresponding to the entire region of the left trigeminal nerve.

CASE 2

A 27-year-old man was referred with a history of the appearance of small ulcers in the oral cavity 2 months before, followed 1 week later by oral numbness similar to that experienced under dental anesthesia. The numbness began in the lower lip and spread from the oral commissure toward the region of the third branch of the right trigeminal nerve.

Examination revealed trigeminal hypoesthesia in the territory of the third branch of the right side (Fig 2). The remainder of the neurologic and oral examination was normal, as were urianalysis, blood tests, and sedimentation rate. The serum IgG antiherpes simplex virus antibodies titer was greater than 2,560, and no IgM antivirus antibodies were present. Oral acyclovir was given (1,000 mg daily for 10 days), with total disappearance of symptoms. Follow-up for 2 years showed no recurrence of symptoms.

Discussion

Facial numbness may only be considered idiopathic when other possible causes have been excluded and when a careful, prolonged patient follow-up is performed. A differential diagnosis that includes malignant disease must always be established in the case of facial numbness localized to the distribution of the third branch of the trigeminal nerve, or that starts in the region of the oral commissure and gradually spreads to the entire side of the face.[11-13] Collagen disease must also be excluded.[14,15]

Patients with TSN commonly lack disease antecedents of importance or associated neurologic disorders. Trigeminal motor function is usually preserved. According to Fisher,[8] pain is present in approximately one of every 3 cases in the initial stages of the disease. However, no associated pain was noted in 2 cases. Sensory deficiency varies from slight to severe,[4,5,16,17] and was found to be moderate in these patients. In decreasing order of frequency, hypoesthesia affects all the trigeminal branches; the second and third branches; the third branch only; the second branch only; and the first and second branches. Thus, the

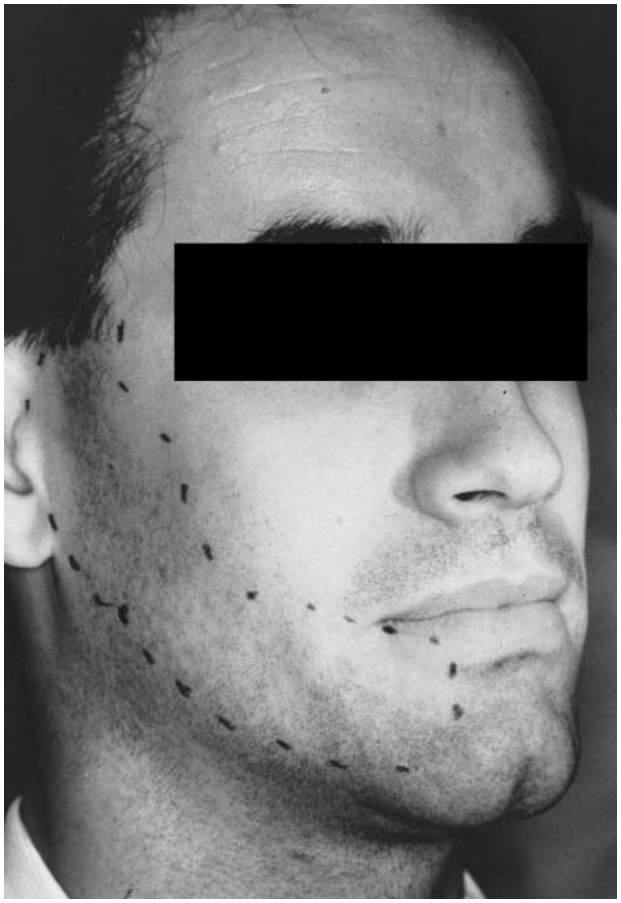

FIGURE 2. Anesthetic area corresponding to the region of the third branch of the right trigeminal nerve.

second and third trigeminal branches are affected with approximately the same frequency and twice as often as the first branch.[14] In the present cases, one patient had involvement of all three branches, and the second suffered hypoesthesia in only the region of the third trigeminal branch.

Sensory loss is well defined and corresponds to the territory innervated by each of the affected trigeminal branches. This suggests that the underlying lesion in benign TSN could be located in the trigeminal ganglion or peripherally. However, the general absence of pain is an argument against ganglion involvement.

The true cause of this syndrome remains open to debate. Hughes[18] observed arachnoiditis of the trigeminal sensory roots in 3 cases during surgery. However, these patients suffered a rapid onset of severe facial pain, with steady worsening and no recovery—observations that are not usual in benign TSN. Jannetta and Robbins[19] described arterial compression that distorted the trigeminal nerve in 4 patients with idiopathic trigeminal neuropathies.

On the other hand, Blau et al[4] postulated a viral etiology for TSN and suggested that their cases of trigeminal neuropathy, as well as the more common transient paralysis of the external ocular motor muscle and facial nerve may have similar etiologies. Likewise, Seward[3] described 4 cases with partial or complete recovery and suggested an analogy between this clinical condition and Bell's palsy. In this regard, Ch'ien and Halsey[5] reported 2 patients with transient trigeminal sensory neuropathy associated with Bell's palsy. A viral etiology was also postulated by Mandal and Allbeson[7] who described a case of trigeminal sensory neuropathy in a patient with hepatitis. Likewise, Easton[6] reported a case of localized herpes infection with elevated antibody titers against herpes zoster, no dermal herpetic lesions, and the subsequent development of trigeminal sensory neuropathy. Fisher[8] also supported the viral theory, suggesting the possibility that herpes simplex may cause subacute trigeminal ganglionitis. This suggestion was based on the finding by Baringer and Swoveland[20] of herpes simplex virus in 40% of the trigeminal ganglia of 60 random adult cadavers.

Gominak et al[9] described 3 patients with transient trigeminal sensory neuropathies associated with ipsilateral herpes simplex lip lesions. These cases support the theory that isolated trigeminal sensory alterations may be caused by intermittent herpes simplex viral reactivation in the trigeminal ganglion. In this regard, 2 patients who had repeated numbness following complete recovery from preceding episodes have been described.[10]

The first patient described in the present case reports suffered a 6- to 8-month episode of facial numbness annually, which then disappeared only to return a year later, for a total of 10 years. Both cases had had recent ulcerations of the oral mucosa, and the symptoms disappeared with acyclovir, supporting the viral hypothesis. However, the latter could not be confirmed, because the cytology and histopathology were nonspecific in the first case, whereas in the second case the lesions healed before the patient sought help for the numbness.

In both patients, the facial numbness disappeared after administration of acyclovir. These data further support the viral theory of spontaneous and transient trigeminal numbness and raise the question of whether patients with TSN should be treated with acyclovir.

References

1. Thrush DC, Small M: How benign a symptom is facial numbness? Lancet 2:851, 1970
2. Peñarrocha M, Alfaro A, Bagán JV, et al: Idiopathic trigeminal sensory neuropathy. J Oral Maxillofac Surg 50:472, 1992
3. Seward MH: Anaesthesia of the lower lip: A problem in differential diagnosis. Br Dent J 113:423, 1962
4. Blau JN, Harris M, Kennett S: Trigeminal sensory neuropathy. N Engl J Med 281:873, 1969

5. Ch'ien LT, Halsey JM: Trigeminal sensory neuropathy and Bell's palsy. N Engl J Med 282:224, 1970
6. Easton HG: Zoster sine herpete causing acute trigeminal neuralgia. Lancet 2:1065, 1970
7. Mandal BK, Allbeson M: Trigeminal sensory neuropathy and virus hepatitis. Lancet 2:322, 1972
8. Fisher CM: Trigeminal sensory neuropathy. Arch Neurol 40: 591, 1983
9. Gominak S, Gros D, Paydarfar D: Herpes simplex labialis and trigeminal neuropathy. Neurology 40:151, 1990
10. Peñarrocha M, Alfaro A, Bagán JV: Recurrent idiopathic trigeminal sensory neuropathy. Oral Surg Oral Med Oral Pathol 75: 712, 1993
11. Peñarrocha M, Bagán JV, Alfaro A, et al: Mental nerve neuropathy in systemic cancer. Report of three cases. Oral Surg Oral Med Oral Pathol 69:48, 1990
12. Peñarrocha M, Bagán JV, Alfaro A, et al: Malignant mental nerve neuropathy. Case report and meta-analysis. Rev Neurol (Barcelona) 101:31, 1992
13. Horowitz S: Isolated facial numbness. Clinical significance and relation to trigeminal neuropathy. Ann Intern Med 80:49, 1974
14. Flint S, Scully C: Isolated trigeminal sensory neuropathy: A heterogeneous group of disorders. Oral Surg Oral Med Oral Pathol 69:153, 1990
15. Alfaro A, Peñarrocha M, Bagán JV: Orofacial manifestations of mixed connective tissue disease with an uncommon serological evolution. Oral Surg Oral Med Oral Pathol 73:441, 1992
16. Egglestone DJ, Haskell R: Idiopathic trigeminal sensory neuropathy. Practitioner 208:649, 1972
17. Barraquer-Bordas L, Torres R, Codina M, et al: Neuropathie sensitive du trijumeau, pure, bilaterale, avec troubles trophiques oculaires. Apport d'une observation et révision du problème. Rev Neurol 129:222, 1973
18. Hughes B: Chronic benign trigeminal paresis. Proc Royal Soc Med 51:529, 1958
19. Jannetta PJ, Robbins LJ: Trigeminal neuropathy: New observation. Neurosurgery 7:347, 1980
20. Baringer JR, Swoveland P: Recovery of herpes-simplex virus from human trigeminal ganglions. N Engl J Med 288:648, 1973