

# Orofacial Paraesthesia: An Unusual Presentation of Acoustic Neuroma

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**Abstract:** Patients with acoustic neuromas commonly present with unilateral hearing loss, tinnitus and unsteadiness. An uncommon initial feature is involvement of the trigeminal nerve. The unusual feature in the case reported here was orofacial paraesthesia, which preceded hearing loss by 3-4 years. Diagnosis was made following a referral by the patient's dentist.

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**Clinical Relevance:** Patients with unexplained loss of orofacial sensation should be referred for early specialist evaluation.

Acoustic neuromas are benign tumours originating from the eighth cranial nerve. They represent 8-10% of all primary cerebral neoplasms and account for approximately 80-90% of cerebellopontine angle tumours.<sup>1,2</sup> Unilateral hearing loss, tinnitus and unsteadiness are the most common initial symptoms of an acoustic neuroma;<sup>3</sup> later features include headache, otalgia, facial numbness or weakness, diplopia, nausea, vomiting and dysguesia.<sup>1</sup> Orofacial anaesthesia has been reported as the initial symptom in about 5% of acoustic neuromas.<sup>4</sup>

The case reported in this paper was particularly notable for the length of time for which the orofacial paraesthesia

preceded the hearing loss. The diagnosis was eventually made following a referral by the patient's general dental practitioner.

## CASE REPORT

A 37-year-old woman was referred by her dentist to the Oral Medicine Department at Liverpool University Dental Hospital. The presenting complaint was of diminished sensation on the right side of her face and inside her mouth. The patient had been aware of the paraesthesia for about 5-6 years before the consultation. She was generally fit and well, apart from mild gastric reflux. There was no history of facial pain or other neurological symptoms, such as dizziness, unsteadiness or tinnitus. The patient had, however, noticed slight deafness which began 2 years before. She had been seen by an Ear, Nose and Throat Surgeon for the problem but audiometry had proved normal.

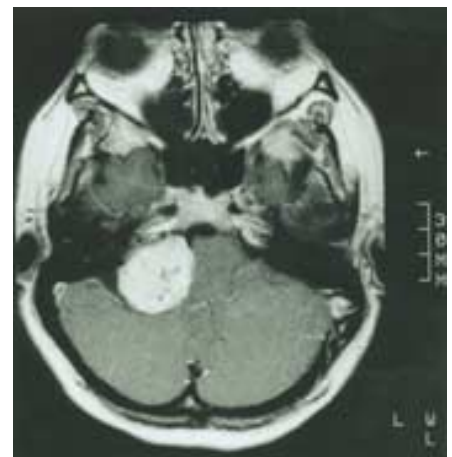
Clinical examination indicated a reduced response to pinprick sensation on the right side of the face, labial

mucosa and gingivae. There were no signs of facial nerve weakness, but the patient's hearing was reduced on the right side. All other cranial nerves appeared to be intact.

Magnetic resonance imaging (MRI) revealed a mass, approximately 3 cm in diameter, in the right cerebellopontine angle (Figure 1).

The patient was referred to a neurosurgeon who recommended surgical management of the tumour, but she was unwilling to accept the risks associated with this procedure and was therefore referred for stereotactic radiosurgery. Under local anaesthetic, with a stereotactic frame attached to the skull, computed tomography/MRI with contrast enhancement were performed with good visualization of the large acoustic neuroma. Stereotactic radiosurgery was carried out with nine fields of radiation.

The patient tolerated the procedure well and was discharged home the next



**Figure 1.** Magnetic resonance scan showing a mass in the right cerebellopontine angle (axial T1-weighted image).

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day. A follow-up MRI scan showed multiple areas of lucency within the tumour.

Almost 2 years after treatment, the patient reported no change in her symptoms. She had mild hearing loss and some residual paraesthesia on the right side of her face and gingivae. There was no facial weakness and MRI scanning showed no increase in the size of the tumour.

## DISCUSSION

Facial paraesthesia has been reported as the presenting feature in only about 4-10% of patients with acoustic neuroma.<sup>4-6</sup> The clinical presentation of acoustic neuroma is partly dependent on the position of the tumour. In the internal auditory meatus the eighth nerve is closely related to the facial nerve. The eighth nerve leaves the meatus, passing into the subarachnoid space of the posterior cranial fossa at the cerebellopontine angle, where it is still closely related to the facial nerve and, anteriorly, also to the trigeminal nerve; hence as the tumour enlarges the trigeminal nerve is almost inevitably involved.<sup>7</sup>

In previous case reports of initial trigeminal involvement, facial paraesthesia has generally preceded other signs and symptoms by about a year. Ferguson and Burton<sup>7</sup> reported a 58-year-old woman who presented with a burning tongue of 9 months' duration which had been followed by a reduced sensation of the upper and lower lips on the left side and itching of the left

cheek. A further 12 months elapsed before more profound facial paraesthesia developed in all three divisions of the left trigeminal nerve. This patient reported no hearing problems, although testing revealed a reduction in auditory acuity on the left side. She also had nystagmus. Perusse<sup>8</sup> described two cases, one a 60-year-old woman with facial paraesthesia which had been developing over 8 months. This affected the maxillary division of the right trigeminal nerve, and was associated with progressive hearing loss. Perusse's second patient was a 37-year-old woman with a 6-month history of right mandibular anaesthesia, associated with slight dizziness; examination also showed reduced hearing loss on the right.

The patient described in our report had unilateral facial paraesthesia for 3-4 years before she first noticed that her hearing was affected. Despite ENT evaluation and normal audiometry, there was a further delay of 2 years, totalling 5-6 years from initial symptoms to the diagnosis of acoustic neuroma. Although acoustic neuromas may present with trigeminal involvement, the interesting feature in this case is the 3-4 years' lapse between initial facial paraesthesia and any other symptoms – particularly hearing loss. (The only other reference to a long period after initial trigeminal symptoms is in a patient who had been diagnosed with trigeminal neuralgia 14 years previously<sup>5</sup>). A report on 1000 acoustic neuromas stated that, in the 9% of patients with trigeminal nerve symptoms, not necessarily at presentation, the duration between

initial symptoms and diagnosis was, on average, 1.3 years.<sup>9</sup>

This case highlights the importance of a specialist referral and appropriate imaging for any patient who reports reduced sensation in the face or mouth, particularly if there are other neurological symptoms such as deafness. The referral from this patient's dental practitioner to the oral medicine department prevented further delay in the diagnosis of her acoustic neuroma and illustrates the important role that the dentist has in the total healthcare of the patient.

## REFERENCES

1. Harner SG, Laws RE. Clinical findings in patients with acoustic neurinoma. *Mayo Clin Proc* 1983; **58**: 721-728.
2. Valvassori GE. Cerebellopontine angle tumours. *Otolaryngol Clin North Am* 1988; **21**: 337-348.
3. Shaan M, Vassalli L, Landolfi M, Taibah A, Russo A, Sanna M. Atypical presentation of acoustic neuroma. *Otolaryngol Head Neck Surg* 1993; **109**: 865-870.
4. King TT, Gibson WPR, Morrison AW. Tumours of the eighth cranial nerve. *Br J Hosp Med* 1976; **16**: 259-272.
5. Edwards CH, Paterson JH. A review of the symptoms and signs of acoustic neurofibromatosis. *Brain* 1951; **74**: 144-190.
6. Berrettini S, Ravecca F, Russo F, Bruschini P, Sellari-Franceschini S. Some uncharacteristic clinical signs and symptoms of acoustic neuroma. *J Otolaryngol* 1997; **26**: 9-103.
7. Ferguson JW, Burton JF. Clinical presentation of acoustic nerve neuroma in the oral and maxillofacial region. *Oral Surg Oral Med Oral Pathol* 1990; **69**: 672-675.
8. Perusse R. Acoustic neuroma presenting as orofacial anaesthesia. *Int J Oral Maxillofac Surg* 1994; **23**: 156-160.
9. Matthies C, Samii M. Management of 1000 vestibular schwannomas (acoustic neuromas): clinical presentation. *Neurosurgery* 1997; **40**: 1-9.

## ABSTRACT

### WHO DESIGNS YOUR ADVERTS?

Why do some Yellow Page Advertisements Capture Attention Better than Others? Risto Tuominen. *Acta Odontol Scand* 2001; **59**: 79-82.

This is a most interesting report of an unusual piece of research directly

relevant to dental practice. One thousand adults were asked for their opinions on various yellow page advertisements, in particular which they would respond to. People liked most large advertisements with low text density, pictures or photographs, and a clear message. They disliked mostly advertisements with frames, small print, a boring or uninformative message, and a muddled look. Sadly,

the five advertisements most disliked by the people questioned had all been planned by dentists themselves, whilst three of the five most liked had been designed professionally!

Advertising is only expensive if it is not fruitful, and a little research such as this before placing your next entry may reap high rewards.

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