

Post-traumatic auriculotemporal neuralgia: A previously unreported complication of endaural incision

Kamal G. Effat

Department of Otolaryngology, El-Sahel Teaching Hospital, Cairo, Egypt

Correspondence to Kamal G. Effat 51A, El-Madina El-Monawara Street, Madinet El-Mohandesseen, Giza, Egypt
Tel: +20 122 425 0373;
e-mail: kamaleffat@hotmail.com

Received 28 February 2013

Accepted 12 May 2013

The Egyptian Journal of Otolaryngology
2014, 30:180–181

Auriculotemporal neuralgia is a rare form of facial pain. In this report, the author presents a case of auriculotemporal neuralgia following an endaural incision. This condition has not been previously documented in the literature.

Keywords:

Auriculotemporal neuralgia, Endaural incision, Pain, Surgery

Egypt J Otolaryngol 30:180–181

© 2014 The Egyptian Oto - Rhino - Laryngological Society
1012-5574

Introduction

Auriculotemporal neuralgia is a rare form of facial pain that is scarcely described in the literature. It is characterized by paroxysms of unilateral pain in the distribution of the auriculotemporal nerve, with tenderness over the affected nerve. The pain is abolished by local anesthetic blockade or ablation of the nerve [1]. The condition is currently postulated to be an entrapment neuropathy caused by spasm of the lateral pterygoid muscle in the infratemporal fossa, leading to compression of the auriculotemporal nerve [2].

Neuralgia is classified as post-traumatic neuralgia, if the characteristic neuralgia-type pain begins following an antecedent trauma or surgical procedure. It is frequently seen in the trigeminal distribution following dental extraction and involves the branches of the trigeminal nerve [3]. The aim of this study was to document the case of auriculotemporal neuralgia developing after an endaural incision. In a careful review of the literature (PubMed/Medline search), the present author did not find any previously reported case of auriculotemporal neuralgia after ear surgery.

Case report

A 32-year-old female teacher with bilateral chronic otitis media and bilateral central tympanic membrane perforations underwent a successful right-sided underlay myringoplasty by a standard endaural incision.

Six weeks after the operation, she started to suffer from paroxysms of severe pain in front of the right ear, radiating downwards to the ipsilateral side of the jaws and upwards to the temporal region. The pain was described as analogous to tooth pain and was associated with a burning sensation on the overlying skin during

the pain attacks. She did not complain of previous dental caries or temporomandibular joint disorders. There were no identifiable triggering factors for the pain, which would develop nearly daily and would last 1–2 h. There was no rhinorrhea, facial flushing, or ipsilateral lacrimation. She did not suffer from any systemic disease.

On examination, the preauricular wound scar, external auditory canal, and tympanic membrane did not show signs of inflammation. Cranial nerve function was normal, apart from an area of diminished light touch sensation over the right preauricular and parotid regions. These areas showed tenderness on deep pressure. Examination of the teeth, parotid duct orifice, and temporomandibular joint movement revealed no abnormality. In view of the risk of injury to the facial nerve branches, a local anesthetic blockade was not attempted at that stage.

The patient was treated with various NSAIDs for 2 weeks, but the pain was still causing great distress. She was then started on carbamazepine (Tegretol), a drug which is commonly administered to patients with trigeminal neuralgia. She obtained marked relief on this medication, and she is currently receiving 200 mg tablets twice a day. At present, she has been on Tegretol for 2 months and her complete blood count is regularly checked.

Discussion

The auriculotemporal nerve is a branch of the posterior division of the mandibular nerve, which carries sensory and autonomic fibers. The terminal fibers innervate the tympanic membrane, the skin of the external auditory canal, the superior auricle, the temporal region, the parotid gland, and the temporomandibular joint capsule [4].

The endaural incision is frequently used by otologists as an approach to the middle-ear cleft [5]. The incision would conceivably cut several terminal sensory fibers of the auriculotemporal nerve. However, as far as the author is aware, no previous case of auriculotemporal neuralgia after an endaural incision has been documented in the literature.

Neuralgia is classified as post-traumatic neuralgia, if the characteristic neuralgia-type pain begins after an antecedent trauma or surgical procedure. The pathogenesis of post-traumatic neuralgia is related to both peripheral and central factors [6]. The peripheral mechanisms include increased sensitivity of nociceptive afferents to endogenous chemical mediators, abnormal firing patterns in the nerve fibers after demyelination, and neuroma formation. The central mechanisms involve morphologic, neurochemical, and physiological changes in the central pathways. It is postulated that deafferentation from a corresponding area supplied by a sensory nerve leads to heightened excitability of the central neurons in the nociceptive pathways, a phenomenon known as central neuroplasticity [6].

The treatment of auriculotemporal neuralgia has not been standardized because of the paucity of patients reported with this disorder [1]. Nonopioid analgesics are used initially. Opioid analgesics are very effective; however, the major disadvantage of opioids is dependence and addiction [7]. Carbamazepine is an antiepileptic drug that is effective in reducing the pain of various neuralgias [7]. The patient in this report obtained marked relief on carbamazepine. Auriculotemporal neuralgia blockade is diagnostic and therapeutic. However, recurrence of pain is frequent, and the risks of intravenous injection and facial nerve palsy are real concerns. The material used for blockade is a local anesthetic, with or without a steroid [8,9]. The application of botulinum toxin has been successfully used for various neuralgias [10]. Recently, electrical neurostimulation is being increasingly used for neuromodulation in refractory neuralgias [11].

Conclusion

A case of facial pain after an endaural incision for myringoplasty is presented. The paroxysmal nature of pain in the distribution of the auriculotemporal nerve and good response to carbamazepine therapy provide an evidence for this facial pain to be classified as post-traumatic auriculotemporal neuralgia. As far as the author is aware, this is the first case to be documented in the literature following an endaural incision.

Acknowledgements

Conflicts of interest

None declared.

References

- 1 Speciali JG, Gonçalves DA. Auriculotemporal neuralgia. *Curr Pain Headache Rep* 2005; 9:277–280.
- 2 Headache Classification Subcommittee of the International Headache Society. The International Classification of Headache Disorders: 2nd edition. *Cephalalgia* 2004; 24:9–160.
- 3 Acquadro MA, Montgomery WW. Treatment of chronic paranasal sinus pain with minimal sinus disease. *Ann Otol Rhinol Laryngol* 1996; 105:607–614.
- 4 Schmidt BL, Pogrel MA, Necoechea M, Kearns G. The distribution of the auriculotemporal nerve around the temporomandibular joint. *Oral Surg Oral Med Oral Pathol Oral Rad Endod* 1998; 86:165–168.
- 5 Shenoi PM. Surgical approaches to the middle ear and mastoid. In: Ballantyne JC, Morrison A, (editors). *Rob & Smith's operative surgery-ear*. 4th ed. London: Butterworth; 1983. 47–66.
- 6 Kukkar A, Bali A, Singh N, Jaggi AS. Implications and mechanism of action of gabapentin in neuropathic pain. *Arch Pharm Res* 2013; 36:237–251.
- 7 Phero JC, Dionne RA. Pharmacological management of head and neck pain. *Otolaryngol Clin North Am* 2003; 36:1171–1185.
- 8 Murayama RA, Stuginski-Barbosa J, Moraes NP, Speciali JG. Toothache referred from auriculotemporal neuralgia: case report. *Int Endod J* 2009; 42:845–851.
- 9 Stuginski-Barbosa J, Murayama RA, Conti PCR, Speciali JG. Refractory facial pain attributed to auriculotemporal neuralgia. *J Headache Pain* 2012; 13:415–417.
- 10 Persaud R, Garas G, Silva S, Stamatoglou C, Chatrath P, Patel K. An evidence-based review of botulinum toxin (Botox) applications in non-cosmetic head and neck conditions. *JRSM Short Rep* 2013; 4:10.
- 11 Jenkins B, Tepper SJ. Neurostimulation for primary headache disorders, part 1: pathophysiology and anatomy, history of neuromodulation in headache treatment, and review of peripheral neuromodulation in primary headaches. *Headache* 2011; 51:1254–1266.