Journal of Oral and Maxillofacial Surgery, Medicine, and Pathology xxx (2016) xxx–xxx

Contents lists available at ScienceDirect

Journal of Oral and Maxillofacial Surgery, Medicine, and Pathology

journal homepage: www.elsevier.com/locate/jomsmp

Case Report

Symptomatic trigeminal neuralgia secondary to tumours: A case series

Jie Ying Hoo[a,*], Hans Prakash Sathasivam[a], Shin Hin Lau[b], Chee Lynn Saw[c]

[a] Oral Medicine & Oral Pathology Unit, Sultan Ismail Hospital, Taman Mount Austin, 81100 Johor, Malaysia
[b] Institute for Medical Research, Jalan Pahang, 50588 Kuala Lumpur, Malaysia
[c] Air Itam Clinic, Jalan Air Itam, 11500 Penang, Malaysia

ARTICLE INFO

Article history:
Received 17 July 2015
Received in revised form 6 April 2016
Accepted 10 May 2016
Available online xxx

Keywords:
Trigeminal
Neuralgia
Tumour
Nasopharyngeal carcinoma

ABSTRACT

Trigeminal neuralgia (TGN) is an extremely painful condition affecting the face. Although the precise mechanism of TGN is still incompletely understood, it is believed that the majority of patients have some form of compression of the nerve caused by blood vessels. However, a proportion of patients may have TGN caused by involvement of the nerve by space occupying lesions such as tumours. Six cases of TGN secondary to tumours that involved the trigeminal nerve are presented. The importance of thorough clinical examination as well as diagnostic imaging in the assessment and management of TGN patients is discussed.

1. Introduction

Trigeminal neuralgia (TGN) is a severe condition characterized by paroxysms of pain that is either a sharp, stabbing, electric current-like or excruciating pain within the distribution of the fifth cranial nerve [1]. Although the exact mechanisms for TGN are still a mystery, several possible aetiological factors have been considered such as compressive lesions (vascular or tumour), infectious agents and demyelinating conditions [2–9].

TGN caused by structural lesions aside from vascular compression was formerly called Symptomatic Trigeminal Neuralgia (STN) in the second edition of The International Classification of Headache Disorders (ICHD-II) [10]. In the recently published third edition of The International Classification of Headache Disorders (ICHD-III) beta version, TGN caused by space occupying lesions such as tumours were re-classified as "Primary trigeminal neuropathy attributed to space-occupying lesion" [1]. This change is reflective of the improved understanding of the clinico-pathological difference between classical TGN and TGN caused by structural lesions other than neurovascular compression.

Anywhere between 5 and 15% of patients with TGN-like symptoms are thought to have TGN secondary to tumours [5,7,11–13]. At times the TGN-like pain may be the initial presenting symptom of the underlying tumour [7]. Early diagnosis of the offending tumours is imperative as it may decrease morbidity and mortality through early surgical intervention. This article aims to present a series of such cases and to highlight the importance of thorough clinical examination as well as the usefulness of diagnostic imaging in the assessment and management of TGN patients.

2. Case reports

This study has been given approval by the institutional ethics committee and all the patients involved provided written informed consent to allow usage of their clinical information and radiographic images for this case series. A summary of the pertinent demographic features, clinical findings, findings from neuroimaging studies and management of the six patients is listed as below.

This case series has been registered with the National Medical Research Registry and exemption was granted from ethical review as this is not a prospective research. Medical records of patients with trigeminal neuralgia seen over a period of 2 years were reviewed and six cases of TGN secondary to tumours with complete clinical data were found. The following are the findings from clinical examination and diagnostic imaging of the cases.

☆ Asian AOMS: Asian Association of Oral and Maxillofacial Surgeons; ASOMP: Asian Society of Oral and Maxillofacial Pathology; JSOP: Japanese Society of Oral Pathology; JSOMS: Japanese Society of Oral and Maxillofacial Surgeons; JSOM: Japanese Society of Oral Medicine; JAMI: Japanese Academy of Maxillofacial Implants.

* Corresponding author. Tel.: +60 164840611; fax: +60 73565071.
E-mail addresses: gabjying@gmail.com (J.Y. Hoo), hans@hsi.gov.my (H.P. Sathasivam).

http://dx.doi.org/10.1016/j.ajoms.2016.05.005
2212-5558/

2.1. Case 1

A 63-year-old woman was referred to our clinic for pain and numbness over the right cheek region for 4 months. The pain and numbness were localized to the right maxillary distribution of the trigeminal nerve and did not cross the midline. Upon clinical examination, her right eye had diplopia and blurry vision, loss of corneal and blink reflexes, loss of gag reflex, nasal fullness, hearing impairment over the right ear and numbness over the right maxilla as compared to the left maxilla. She had no other significant medical history. The pain was well controlled with Gabapentin. Due to the clinical presentation, imaging was ordered for further assessment. Urgent referral to the Otolaryngology and Ophthalmology department was also organized. Computed tomography (CT) of the head and neck region showed the presence of a nasopharyngeal tumour, measuring 5 cm × 2.5 cm with local large enhancing mass of the posterior nasopharynx. There were also intracranial extensions to the base of the skull, middle cranial fossa, sphenoid sinuses with involvement of the right optic canal and right superior orbital fissure. Multiple enlarged left cervical lymph nodes were also present. The impression from the investigations was of a nasopharyngeal carcinoma with intracranial extension and left cervical lymphadenopathy (Fig. 1). She was subsequently referred to the Otolaryngology and Oncology Department for further management.

2.2. Case 2

A 63-year-old woman with a medical history of cervical spondylosis and hypertension, was referred to our clinic for management of pain over the left face. A similar episode of facial pain had occurred 6 months ago and she was seen by a private medical practitioner. At that time the medication given helped with the pain and the pain spontaneously disappeared after a month only to return later. Clinical examination revealed the pain to be composed of a "sharp-shooting" type of pain but also an occasional "burning" type of pain. There was also some altered sensation over the left face suggestive of trigeminal neuropathy. Her facial pain was eventually well controlled with pharmacotherapy. A magnetic resonance imaging (MRI) of the brain was performed and the findings were suggestive of multiple meningioma with a significant mass effect on the pons, which was distorted (Fig. 2). She was subsequently referred to a Neurosurgery Unit for further consultation. The neurosurgeon noted that the meningioma had increased in size but no invasive treatment was rendered nor advised due to the patient's age.

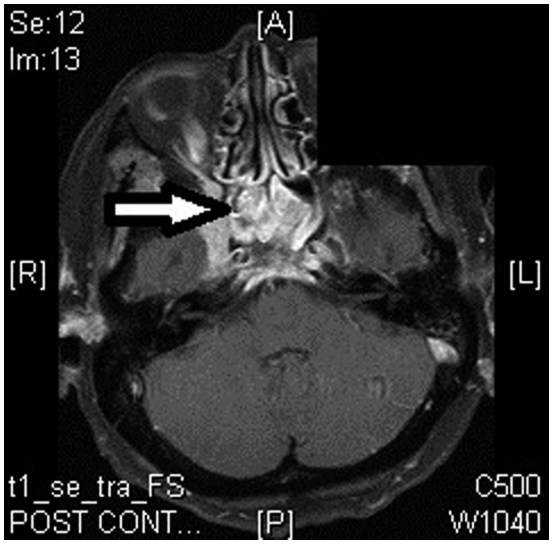

Fig. 1. Nasopharyngeal carcinoma (arrow) with intracranial extension. Patient presented with paraesthesia and pain over the right maxillary region, diplopia and impaired vision of the right eye, loss of gag reflex, nasal fullness and hearing impairment of the right ear.

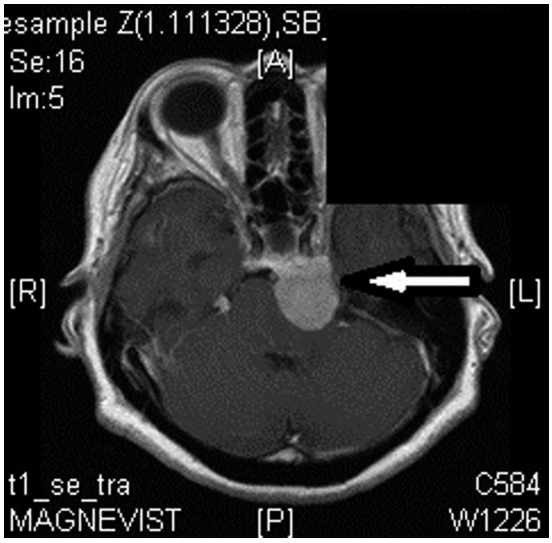

Fig. 2. Meningioma (arrow) with a significant mass effect on the pons. Patient presented with paraesthesia, sharp-shooting and burning pain over the left side of face.

2.3. Case 3

A 69-year-old woman diagnosed with TGN of the left side of the face 7 years ago at a different hospital was referred to us for assessment and management as her pain became less responsive to Carbamazepine. Clinical examination revealed that there was hearing impairment and tinnitus over the left ear. The pain appeared to involve both the maxillary and mandibular branch of the left trigeminal nerve. An MRI was requested and the patient was also referred to the Otolaryngology Clinic. MRI of the brain showed left cerebellopontine angle mass suggestive of either a meningioma or Schwannoma, causing compression to the left trigeminal nerve (Fig. 3). The patient was subsequently referred to a Neurosurgical Unit for further assessment and management. The patient declined surgical intervention from the Neurosurgical Unit and the pain is being managed via pharmacotherapy.

2.4. Case 4

A 61-year-old woman was diagnosed as having TGN of the left side of the face more than 10 years ago. Her pain was well controlled with Carbamazepine for the past few years however recently it became less responsive. Clinical examination revealed some additional paraesthesia over the distribution of the left trigeminal nerve. Further investigation with MRI of the brain revealed an intrinsic left trigeminal nerve lesion involving the preganglionic and ganglionic segment that was suggestive of a Schwannoma (Fig. 4). The patient was subsequently referred to a Neurosurgical Unit for further assessment and management. The pain is being controlled with pharmacotherapy.

2.5. Case 5

A 62-year-old man presented with pain over the right cheek region that was paroxysmal and electric shock-like over a period

Please cite this article in press as: Hoo JY, et al. Symptomatic trigeminal neuralgia secondary to tumours: A case series. J Oral Maxillofac Surg Med Pathol (2016), http://dx.doi.org/10.1016/j.ajoms.2016.05.005