CASE REPORT

Unilateral hypoglossal nerve palsy due to infected molar: a rare entity
Mubeen Khan & Neera Ohri
Department of Oral Medicine and Radiology, Government Dental College and Research Institute, Bangalore, Karnataka, India

Introduction
Isolated hypoglossal nerve palsy is a rare condition, because intramedullary lesions usually involve either adjacent cranial nerve nuclei or corticospinal, pyramidal, spinothalamic tracts, and because extracranial lesions usually involve other cranial nerves. Several causes are attributed to its etiology. Cases of hypoglossal nerve palsy following impacted tooth extraction have also been reported. This paper focuses on an interesting case of isolated hypoglossal nerve palsy caused by an infected impacted tooth.

Case report
A 23-year-old female attended the outpatient department, Department of Oral Medicine and Radiology, Government Dental College and Research Institute, Karnataka, Bangalore, with the chief complaint of pain in the lower left back tooth region, with unilateral left hypoglossal nerve palsy. All investigations were negative. The infected tooth was removed, and the patient had speech therapy and was actively rehabilitated. The isolated hypoglossal nerve palsy could have been due to the infected impacted tooth. Therefore, dentists presented with a case of isolated hypoglossal nerve palsy should consider the infected impacted tooth as the differential diagnosis.

Keywords
hypoglossal nerve palsy, impacted tooth, nerve compression, swelling, tongue.

Correspondence
Dr Neera Ohri, Department of Oral Medicine and Radiology, Government Dental College and Research Institute, Bangalore, Karnataka 560002, India.
Tel: +91-97399-22160
Fax: +91-2670-3176
Email: neera_ohri@yahoo.co.in

Received 5 January 2011; accepted 10 April 2011.

Abstract
Isolated hypoglossal nerve palsy is a rare condition. There are several causes that can be attributed to it. We present a case where a patient presented herself with pain in the left back tooth region, with unilateral left hypoglossal nerve palsy. All investigations were negative. The infected tooth was removed, and the patient had speech therapy and was actively rehabilitated. The isolated hypoglossal nerve palsy could have been due to the infected impacted tooth. Therefore, dentists presented with a case of isolated hypoglossal nerve palsy should consider the infected impacted tooth as the differential diagnosis.
Routine examination of the total count, differential leucocytic count, and immunological and serological examinations showed no viral infection or autoimmune disease. Blood glucose and the liver function test were normal. The chest X-ray was clear with no lung pathology. The impacted tooth was extracted. The patient was put on multivitamins, analgesics, and antibiotics. A speech and language therapy assessment was arranged for the patient, and examined periodically every other week. A decrease in the deviation of the tongue was seen in the course of 5 months, and the patient has become more comfortable while speaking after speech therapy. The patient was regularly followed up.

Discussion

The hypoglossal nerve is a pure motor nerve that innervates intrinsic, as well as extrinsic, muscles of the tongue. It could be divided into five segments: medullary (nuclear), cisternal (extramedullary intracranial), skull base (the segment that passes through the hypoglossal nerve canal), nasopharyngeal, oropharyngeal, and carotid (in close vicinity to the glossopharyngeal and vagus nerves, as well as to the internal carotid artery), and sublingual space (where its branches terminate innervating lingual muscles). The nerve can be damaged anywhere during its course. Localizing the lesion could allow the clinician to narrow possible etiological factors.3

Peripheral lesions of the hypoglossal nerve are generally classified into four categories: extramedullary intracervical lesions, hypoglossal foramen lesions, extracranial lesions of the XIIth nerve at the base of the skull, and cervical hypoglossal nerve lesions.4 The causes of nuclear paralysis of the hypoglossal nerve are multiple and include motor neuron disorders, syringobulbia, tumors, medial medullary infarction, primary medullary hemorrhage, dissecting aneurysms of the carotid artery, trauma, rheumatoid arthritis, viral infectious (e.g. infectious mononucleosis, the common cold, and influenza vaccination),1 multiple myeloma, systemic lupus erythematous, type IV familial amyloid polyneuropathy, intracranial non-specific inflammatory granulomas, and radiation-induced cranial nerve palsy. Transient unilateral hypoglossal nerve palsy have occasionally been reported, in which the underlying cause could not be established.5

The hypoglossal nerve’s carotid space segment, after emerging from the hypoglossal canal, lies deep to the internal carotid artery, the internal jugular vein, the glossopharyngeal nerve, and the vagus nerve. Thereafter, it lies between the internal jugular vein and the internal carotid artery. The lingual segment of the hypoglossal nerve, at the angle of the mandible, loops around the occipital artery to lie superficially, and at the level of the hyoid bone, it lies over the hyoglossus after crossing the lingual vessels, in the sublingual space.6

The probable cause after exclusion in the present case seems to be the infected impacted tooth, which might have led to the massive swelling, thus causing compression of the hypoglossal nerve with the subsequent palsy on the left side.

References

2 Dearing J. Transient contralateral hypoglossal nerve palsy following third molar surgery under day-case general anaesthesia: a case report and review.