Introduction

Anatomy and function of the facial nerve (FN) was first identified by Sir Charles Bell in 1800s\(^1\). The facial nerve is the seventh of 12 cranial nerves innervating the muscles which control facial expressions and transmits the taste sense from oral cavity and two thirds of the posterior side of the tongue\(^2\). Facial nerve palsy (FNP) may appear due to many reasons. Although possible reasons include genetic factors, vascular ischemia and inflammation due to a viral infection, autoimmune diseases, temporal bone fractures, head-neck tumors, central nervous system lesions, and etiology is still contradictory. Despite all reasons mentioned above, two third of FNPs has no reason and is called “idiopathic”\(^3,4\).

Motor nuclei of the facial nerve on the pons are innervated by the motor cortex bilaterally; upper 1/3 of the face receives fibers from double innervated part of the nucleus on the pons whereas lower 2/3 of the face receives fibers from single innervated part. In consideration of this trace, there are two types of facial paralysis; facial and central facial paralysis\(^5,6,7,8,9\).

We aimed to present a rare case with bilateral facial paralysis after tooth removal.

The Case

A 44-year old male patient referred emergency clinic because of numbness on both halves of the face and difficulty to close the eyelids. Medical history investigation revealed that the patient had removal of one of the teeth on the right mandible and he had pain and numbness on the chin 4 days before the referral. Past medical history of the patient was nonspecific.

The following findings were obtained during physical examination at referral to the emergency clinic; overall state was well, arterial blood pressure was 130/80 mmHg, pulse was 95/min, body temperature was 36.5°C. Neurological examination of the patient revealed that the patient was conscious; he has cooperation and orientation; pupils were isochoric; light reflex was positive bilaterally; conjugated eye movements were liberated at four directions; eye squeezing was weak bilaterally; eyebrow elevation loss bilaterally; nasolabial sulcus was indistinct bilaterally; no neck stiffness was detected. Muscle strengths are complete, cerebellar tests are normal and no ataxia was detected. There was not any pathological finding in examination of the respiratory system, cardiovascular system and abdomen.

Blood tests were as follows; WBC: 12.12 10³/uL, Hb:15.8 g/dl, Plt:434 10³/uL, Urea:34 mg/dl, creatinine: 0.86 mg/dL, Na:137 mmol/L, K:3.9 mmol/L, AST:39 U/L, ALT: 16 U/L. Normal sinus rhythm existed in the ECG of the patient. Computed tomography of the brain was normal and there was not any pathology in diffusion magnetic resonance (MR) imaging. Neurology department was consulted for the patient. Contrast cranial MRI was taken by suggestion of the neurology department and there was not any pathology detected. Ear-nose-throat department was consulted for the patient. Contrast cranial MRI was taken by suggestion of the neurology department and there was not any pathology detected. Ear-nose-throat department was consulted for the patient. Ear-nose-throat department recommended 1 mg/day methylprednisolone with gradually decreasing doses. Ophthalmology department was consulted. Artificial tear was recommended. Neurology clinic was consulted again and follow-up in an advanced medical center and the patient was referred to a tertiary medical center for further treatment.
**Discussion**

Facial palsy is a clinical presentation of a paralysis which develops in two forms including peripheral and central due to dysfunction of seventh cranial nerve along the facial nerve; and treatment planning includes acceleration of the healing by cortisone, preventing corneal complications and other possible sequels and inhibition of viral replication, if any\(^2\).

The causes for peripheral facial palsy may be viral (HSV, VZV, CMV, EBV)\(^3,6,8,9,10,11,12,13,14,15,16,17,18\). However, trauma such as dental treatment may cause the condition\(^5,6,8,9,10,11,12,13,14,15,16,17,18\). Facial palsy usually appears unilaterally; bilateral form is rare. Sowmya et al.\(^19\) and Owsley et al.\(^20\) reported unilateral facial palsy after tooth removal; however, such cases developed unilateral paralysis. The case presented here developed bilateral facial paralysis after tooth removal.

Kutluhan et al.\(^21\) and Akdag et al.\(^22\) reported cases with facial palsy due to bilateral otitis media and Melkersson-Rosenthal Syndrome, respectively. As is seen, bilateral facial palsy is rarely detected due to different causes. The cause presented in this case report was tooth removal.

**Conclusion**

Emergency medicine physicians should be aware that bilateral facial palsy may exist due to different underlying causes; and they should investigate the etiology during medical history taking.

It should be noted that traumatic procedures such as tooth removal may cause paralysis which is rarely bilateral; neurology and ear-nose-throat clinics should be consulted for investigation of the etiology and the patient should be referred to an advanced medical center for further research.

**References**