Case Report
Eurasian Journal of Critical Care

Bilateral Facial Paralysis Following Tooth Extraction

Dilek Atik[2], Cesareddin Dikmetaş[1], Ayla Köksal[1], Serkan Doğan[1], Ahmet Erdur[1], Başar Cander[1]
[1]Sağlık Bilimleri Üniversitesi Kanuni Sultan Süleyman Eğitim ve Araştırma Hastanesi, Acil Tıp Kliniği, İstanbul
[2]Yozgat Bozok Üniversitesi, Tıp Fakültesi, Acil Tıp Anabilim dalı, Yozgat

Keywords: Bell Palsy, Facial Paralysis, Tooth Extraction

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 pıns 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 10^3/uL, Hb:15.8 g/dl, Plt:434 10^3/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. 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.

Corresponding Author: Cesareddin Dikmetaş **e-mail:** drcesareddindikmetas@gmail.com
Received: 02.09.2019 • **Accepted:** 10.12.2019

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)[5,6,8,9,10,11,12,13,14,15,16,17,18]. 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

1. Bayındır T, Tan M, Selimoğlu R: Diagnostic and Therapeutic Methods in Bell Paralysis ENT-Forum 2011;10(1)www.KBB-Forum.net..2011
2. Acarkan T, Nazlıkul H. Paralysis of the Facial Nerve Journal of Complementary Medicine, Regulation and Neural Therapy Volume 9, Number 1 : 2015
3. Adour KK. Current concepts in neurology: diagnosis and management of facial paralysis. N Engl J Med. 1982;307:348-51
4. Peitersen E. Bell's palsy: the spontaneous course of 2,500 peripheral facial nerve palsies of different etiologies. Acta Otolaryngol Suppl. 2002; 549:4-30.
5. Angerer M, Pfadenhauer K, Stöhr M. Prognosis of facial palsy in Borrelia burgdorferi meningopolyradiculoneuritis. J Neurol 1993;240:319-321.
6. Burmeister HP, Baltzer PA, Klingner CM, Pantel M, Kaiser WA. Computer und Magnetresonanztomographie des N. facialis. HNO 2010;58:433-442
7. Chen N, Zhou M, He L, Zhou D, Li N. Acupuncture for Bell's palsy. Cochrane Database Syst Rev 2010;8:CD002914
8. de Almeida JR, Al Khabori M, Guyatt GH, Witterick IJ, Lin VY, Nedzelski JM, Chen JM. Combined corticosteroid and antiviral treatment for Bell palsy: a systematic review and meta-analysis. JAMA 2009;302:985-93.
9. Kohler A, Choffl on M, Sztajzel R, Magistris MR. Cerebrospinal fluid in acute peripheral facial palsy. J Neurol 1999;246:165-169.
10. Birkmann C, Bamborschke S, Halber M, Haupt WF. Bell's palsy: electrodiagnostics are not indicative of cerebrospinal fluid abnormalites. AnnOtol Rhinol Laryngol 2001;110:581-584.
11. Dosch M. Neurologie und Neuraltherapie. Freudenstädter Vorträge 1979; 6: 129-44.
12. Gilden DH. Bell´s palsy. N Engl J Med 2004;351:1323-1331.
13. Heckmann JG, Heckmann SM, Lang CJ, Hummel T. Neurological aspects of taste disorders. Arch Neurol 2003;60:667-671.
14. Hellebrand MC, Friebe-Hoff mann, Bender HG, Kojda G, Hoff mann TK. Das Mona-Lisa- Syndrom – die periphere Fazialisparese in der Schwangerschaft . Z Geburtsh Neonatol 2006;210:126-134.
15. Hesse S, Werner C, Melzer I, Bardeleben A. Lidbeschwerung mit einem auf das Oberlid geklebten Bleiplätchen zur vorübergehenden Therapie des Lagophthalmus. Akt Neurol 2010;37:341-343.
16. House JW, Brackmann DE. Facial nerve grading system. Otolaryngol Head Neck Surg 1985;93:146-147.
17. Mamoli B. Zur Prognoseerstellung peripherer Fazialisparesen unter besonderer Berücksichtigung der Elektroneurographie. Wien Klin Wochenschr 1976;53:3-28.
18. Türk Börü Ü. Facial palsy BARNAT (Complemantary Medicine and Neural Therapy Journal) 3/ September/2007
19. Sowmya GV, Manjunatha BS, Saurabh G, Mohit Pal S,, Madhusudan A.Facial Pain Followed with Unilateral Facial Palsy: A Case Report with Literature Review. Journal of Clinical and Diagnostic Research. 2014 Aug, Vol-8(8): ZD34-ZD35
20. Owsley D, Goldsmith JP. Bell's palsy following primary tooth extraction. A case report. N Y State Dent J. 2012 Apr;78(3):32-3.
21. Kutluhan et al. Bilateral Facial Palsy Developed by 3-year Interval in Bilateral Chronic Otitis Media: A Case Report Van Medical Journal, Volume: 8, No: 1, January/2001:32-35
22. Akdag et al. A rare cause for bilateral and repetitive facial palsy: Melkersson-Rosenthal syndrome. Dicle Med J Vol 42, No 1, 102-106.