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## A case report on bell's palsy induced after uprooting mandibular lower molar

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### ABSTRACT

Bell's Palsy or Facial Nerve Paralysis is an unusual form of neuropathy after maxillofacial surgery. Its incidence is about 23 per 100000 persons annually, and very few cases were reported in the literature. Dr Charles Bell discovered it in 1821 as complete facial paralysis. Various aetiologies associated with the bell's palsy include trauma, pregnancy, diabetes, and neoplastic infiltrations. Apart from these recent kinds of literature report, surgical interventions like dental extractions are also a significant cause of this condition. With this, we report a case of 25 years old male presented to Government General Hospital with symptoms of drooping of eyebrow and incomplete eye closure with ringing sensation in the left ear. On investigation of his past medical history, he underwent tooth extraction before a month. Therefore, the condition was diagnosed as bell's palsy induced after the dental extraction. He was treated with prednisolone, acyclovir, and Betahistine for ten days. After the treatment, there is an improvement in the facial movements, and symptoms were normalized. Bell's palsy is common, but this condition after dental extractions is very rare. Hence this case signifies the rare occurrence of neuropathies after dental extractions and the need for early treatment procedures must be initiated to reduce the future neurological complications in post-dental operative patients.



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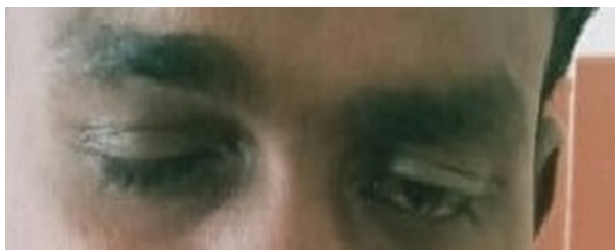
### INTRODUCTION

Bell's palsy or Facial nerve paralysis is neuropathy of the seventh cranial nerve that is caused either by infections, diabetes, and trauma. It affects the movements in the facial region and results in weakness of the affected area. Sir Charles Bell first discovered it as idiopathic facial paralysis (Adisen *et al.*,

2016). However, this condition is very rare in occurrence after dental extraction. Its incidence is about 23 per 100000 persons annually (Tolstunov and Belaga, 2010). It occurs within a short duration after the dental extraction due to local anaesthetics or delayed in onset that was due to the infection of Herpes simplex virus. The purpose of this work is to report a rare case of bell's palsy induced after the lower molar extraction without any evident skin manifestations and to create awareness among the public regarding the postoperative neurological complications of dental extractions.

### Case Report

A 25 years old male presented to Government General Hospital, Kadapa with complaints of drooping of the brow and the corner of the mouth, widening of the palpebral fissure and unable to close the eye as shown in Figure 1 with ringing sensation in the left ear and pain in the left mandibular region for 15 days. His past medical history reveals that he had



**Figure 1: Revealing drooping of the brow and incomplete eye closure a sign of unilateral nerve paralysis**

undergone a lower molar dental extraction one month back. His present complaints developed, followed by dental extraction. Clinical signs like icterus, pallor, clubbing, oedema, and cyanosis were absent. On the evaluation of vitals, the temperature was recorded as 36.5°C and blood pressure 120/80 mm of Hg. All other laboratory investigations, like blood count and biochemical investigations, were within normal limits. Lumbar puncture and cerebrospinal fluid analysis had not performed because patient parents did not want to do it.

Therefore, correlating the history and present symptoms, his condition was diagnosed as bell's palsy induced by dental extraction due to viral infection, although no lesions were present.

#### Outcome And Follow-Up

He was treated with the Tablet. Acyclovir 400 mg five times a day, Tablet. Prednisolone 60 mg once a day, Tablet. Betahistine 8 mg twice a day and Vitamin B Complex every 12 hours for ten days. After the follow up for ten days, his symptoms like ringing in the ear were diminished, and the movement began to appear in his facial muscles.

#### Discussion

Before the dental extraction, there were no such symptoms. They tend to appear after one month of dental surgery. Many literature reviews and case reports suggest that dental extractions are the rare cause for the occurrence of the bell's palsy (Furuta *et al.*, 2000). Various aetiologies that result in this condition include the local anaesthesia during tooth extraction, infections, Osteotomies, etc. Depending upon the time of onset of the condition, these are immediate and delayed-type. Immediate nerve paralysis was mostly due to dental procedures in anaesthetic solution and later is mostly by infection of virus (Tazi *et al.*, 2003). Evidence suggests that possible mechanisms for the bell's palsy after dental surgery were local anaesthetic toxicity, intraneural hematoma formation, and viral reactivations (Vasconcelos *et al.*, 2006). In our case, as the patient developed the condition that was delayed in onset

after the surgery, which was possibly due to viral reactivation hence treated with an antiviral drug as empirical therapy. So far, various triggers were reported for this condition like Stress, Fatigue, and Underlying diseases with infections (Gaudin *et al.*, 2017). But recent reports like this work signifies that dental procedures were also one of the additional risk factors for the conditions like bell's palsy following dental extraction. As the patient is experiencing the facial paralysis at one side, this was Unilateral nerve paralysis condition which was also rare in occurrence when compared to Bilateral facial paralysis (F, 2016).

#### CONCLUSIONS

Neurological complications after dental extractions are a growing concern among the public. To support the statement this work, provide evidence with bell's palsy as Post-operative dental procedures are one of the additional risk factors which cause viral reactivations by nerve damage. Differential diagnosis with a proper treatment plan is essential to provide accurate therapy to avoid poor prognosis. Hence adequate management precautions should be suggested by dentists for the patients who underwent dental operations to avoid Post-operative neurological complications.

#### Conflict Of Interest

The authors declare that they have no conflict of interest for this study.

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