Scholars Journal of Medical Case Reports
Abbreviated Key Title: Sch J Med Case Rep
ISSN 2347-9507 (Print) | ISSN 2347-6559 (Online)
Journal homepage: https://saspublishers.com

OPEN ACCESS

Health Care

Bell's Palsy - An Unusual Trigger?

Syed Talat Hosain Wasty[1*], Maria Syed Wasty

[1]Primary Health Care Corporation (PHCC), Bu Hasa St, Doha, Qatar

DOI: https://doi.org/10.36347/sjmcr.2025.v13i02.024 | **Received:** 18.01.2025 | **Accepted:** 24.02.2025 | **Published:** 27.02.2025

***Corresponding author:** Syed Talat Hosain Wasty
Primary Health Care Corporation (PHCC), Bu Hasa St, Doha, Qatar

Abstract **Case Report**

Bell's palsy is a common condition that is largely diagnosed and managed in family medicine. Despite the symptoms and management being well-established, less is known about its aetiology. Various factors have been implicated as the trigger for Bell's palsy, with herpes virus reactivation as the most likely cause. However, many other theories have been proposed. We report the case of a 47 years old man with no significant previous medical problems, presenting with symptoms of Bell's palsy after an unusual possible trigger. This article presents this case alongside existing evidence in the literature for the same trigger.

Keywords: Bell's Palsy, Facial Nerve Palsy, Neurapraxia.

INTRODUCTION

Facial nerve palsy is not an uncommon presenting complaint in primary care. One possible diagnosis is Bell's palsy, which affects approximately 1 in 60 people in their lifetime and has an annual incidence of approximately 20 per 100,000 population (Holland NJ *et al*., 2014). It usually presents with rapid onset unilateral facial weakness involving the upper and lower parts of the face, but patients can have milder symptoms such as dry mouth, drooling, excessive tearing and hyperacusis.

The aetiology of Bell's palsy remains unclear, with reactivation of the herpes virus thought to be the most likely trigger, but other possible factors may include autoimmune disease, immunosuppression, other viral infections, physical trauma, stress, and sleep deprivation. Conditions associated with higher prevalence of Bell's palsy include diabetes, obesity, hypertension and pregnancy (Glass GE *et al.*, 2014). More recently, a link between Covid-19 vaccination and Bell's palsy has been postulated, although this is yet to be confirmed or refuted (Garg RK *et al*., 2022).

In the following case, we describe a patient who presents with a possible unusual trigger for unilateral facial weakness, and explore evidence in the literature linking this trigger with Bell's palsy.

CASE REPORT

We present the case of a 47 year old male with no significant past medical history, who presented to his family medicine doctor with left sided facial weakness of acute onset. The day prior, he had had a dental check-up carried out involving full examination, but did not include any local anaesthetic or procedural work.

The facial weakness was initially mild, only manifesting as difficulty in eating, with repeated biting of his lip when trying to consume food. The next day the paralysis was more overtly noticeable, with asymmetric facies when trying to smile or raise his eyebrows. He had no other symptoms.

Six weeks prior to these symptoms, the patient had had a self-resolving viral upper respiratory tract infection. He had no chronic medical conditions, and had received the full complement of Covid vaccinations to date, as well as the seasonal influenza vaccine 4 months earlier.

His physician diagnosed him with Bell's palsy and started him on high dose prednisolone for 10 days. 1 week after completing the course of steroid treatment, he developed upper respiratory tract symptoms again and tested positive for Covid, from which he made a full and uneventful recovery.

DISCUSSION

Whilst the clinical presentation and current management of Bell's palsy is relatively well-established, the aetiology of this common condition remains unclear. Although herpes simplex or zoster reactivation seems to be cited as the most likely trigger, the case described above could lend support to the notion that physical trauma, even minor, from a dental examination may have been a contributing factor.

Physical Trauma as a Trigger

Neurapraxia is the term given to a mild form of nerve injury which results in conduction loss due to focal demyelination, but without any damage to the endoneurium, perineurium or epineurium (Carballo Cuello CM *et al*., 2023). It often occurs with compression, traction or ischemia, and less commonly due to thermal, electric shock, radiation, percussion, and vibration. A mild oedema develops within the cell body and there is focal disruption of the myelin sheath, and subsequent transient disruption of nerve conduction (Omejec G *et al*., 2020).

However, neurapraxia carries a good prognosis and generally there is complete recovery within days or weeks. Prognosis in Bell's palsy follows a similar timeline, with clinically important improvement within 3 weeks in 85% of people and within 3 to 5 months in the remaining 15% (Holland NJ *et al*., 2014).

There is little evidence in the literature for minor facial trauma or dental procedures causing Bell's palsy. One case report from Nepal describes a 13 year old child who developed symptoms of Bell's palsy following trauma to the face when another child slapped his cheek. Although the diagnosis was made based on clinical features not imaging, as would be the gold standard, they concluded that "even minor trauma to the face can lead to facial palsy" (Ghimire R, 2021).

Several articles cite dental anaesthesia as a trigger for transient facial nerve palsy, including a recent case report describing a 51 year old male who developed unilateral facial nerve paralysis following a right-sided posterior superior alveolar nerve block during the restoration of a tooth (De Leon RE *et al*., 2024). However, there is little in dental literature to suggest oral/dental examination itself can lead to Bell's palsy.

Other cases have been reported where it is suggested that facial nerve palsy due to dental anaesthesia usually results in an immediate palsy with quick recovery (within 7 hours), but a delayed type of palsy could be due to "excessive stretching of the facial nerve from prolonged oral instrumentation leading to direct damage or ischaemia" (Jenyon T *et al*., 2020) (Bernsen PLJA, 1993). Our patient started developing symptoms of Bell's palsy 24 hours after dental examination that involved prolonged instrumentation, which matches the timeline of a delayed paralysis as described in these previous reports.

CONCLUSION

Bell's palsy is a commonly presenting condition to primary care, yet the exact cause remains uncertain. Herpes simplex virus (HSV)-1 has been detected in up to 50% of cases by some researchers (Holland NJ *et al*., 2014), but other triggers cannot be ruled out, including minor physical trauma from dental procedures even in the absence of use of dental anaesthesia.

Early treatment with a short course of high dose steroids is used to manage Bell's palsy. This helps to improve the chances of full recovery, as untreated Bell's palsy can result in up to 30% of patients with residual weakness (Glass GE *et al*., 2014). The benefit of steroids seems to be linked to reduction in oedema around the facial nerve that results from the initial insult, regardless of its nature. However, the use of high dose steroids is not without risk, so every effort should be made to mitigate triggers for Bell's palsy that can reasonably be avoided.

Our case report sits alongside some previous evidence that minor physical trauma, such as prolonged dental instrumentation even without anaesthesia, should be considered one such avoidable trigger for Bell's palsy.

REFERENCES

- Bernsen, P. L. (1993). Peripheral facial nerve paralysis after local upper dental anaesthesia. *Eur Neurol*, *33*(1), 90-1.
- Carballo Cuello, C. M., & De Jesus, O. (2023). Neurapraxia. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2025 Jan. Available from: https://www.ncbi.nlm.nih.gov/books/NBK560501/
- De Leon, R. E., Cabrera, R., & Guerrero, P. (2024). Routine dental procedure induced hemifacial paralysis - case report. *SVOA Dentistry*, *5*(5), 202-206.
- Garg, R. K., & Paliwal, V. K. (2022). Spectrum of neurological complications following COVID-19 vaccination. *Neurol Sci*, *43*(1), 3-40.
- Ghimire, R. (2021). An unusual case of facial nerve palsy due to minor face trauma: A rare case report. *SAGE Open Med Case Rep*, *7*(9).
- Glass, G. E., & Tzafetta, K. (2014). Bell's palsy: a summary of current evidence and referral algorithm. *Fam Pract*, *31*(6), 631-42.
- Holland, N. J., Bernstein, J. M. (2014). Bell's palsy. *BMJ Clin Evid*, 1204.
- Jenyon, T., Panthagani, J., Green, D. (2020). Transient facial nerve palsy following dental local anaesthesia. *BMJ Case Rep*, *13*(9), e234753.
- Omejec, G., & Podnar, S. (2020). Contribution of ultrasonography in evaluating traumatic lesions of the peripheral nerves. *Neurophysiol Clin*, *50*(2), 93-101.