



## Research Article

### BELL'S PALSY: A REPORT OF TWO CASES

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#### ABSTRACT

Bell's palsy is a neuropathy of the peripheral seventh cranial nerve, usually resulting from traumatic, compressive, infective, inflammatory or metabolic abnormalities. The onset of Bell's palsy may be delayed or it may be sudden onset which often results in panic state. For speedy recovery, correct diagnosis and early treatment are crucial. This paper presents two cases of Bell's palsy which are diagnosed at its initial stage.

#### Keywords:

Bell's palsy,  
Children.

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## INTRODUCTION

Bell's palsy is a neuropathy of the peripheral seventh cranial nerve, usually resulting from traumatic, compressive, infective, inflammatory or metabolic abnormalities. However, in many cases no proper etiology is identified and the eventual diagnosis is idiopathic. (Rajendra and Sivapathasundharam, 2006) There are many theories about the cause of Bell's palsy but the etiology is unknown. The most common etiological factor is that it is caused by a virus similar to Herpes simplex or zoster. Other proposed etiologies include physiologic compression of the nerve due to arteriospasm, venous congestion or ischemia, and narrowing of the bony canal. Incidence of bells palsy is slightly greater in females at a 1.5 to 1 ratio and effects 1 in 5000 persons per year. There is no race predilection for Bell's palsy. May et al. (1981) evaluated 170 children over a 17-year period and found that Bell's palsy accounted for 42% of the facial nerve paralyse. (Martha Ann Keels et al., 1987) The clinical signs of Bell's palsy include widening of the palpebral fissure, flattening of the nasolabial fold, and drooping of one corner of the mouth when smiling. These signs occur on the same side of the face as the lesion.

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There may be an inability to wrinkle half of the fore-head, to close one eye completely, and to purse the lips. Facial appearance becomes asymmetric, and saliva dribbles down the angle of the mouth. (Martha Ann Keels et al., 1987) Bell's phenomenon is a classic condition wherein the eye cannot close without a simultaneous movement of the eyeball upward and outward. Eye irritation often results from lack of lubrication and constant exposure. Tear production decreases; however, the eye may appear to tear excessively because of loss of lid control, which allows tears to spill freely from the eye.

(Jeffrey D. Tiemstra and Nandini khatkhate, 2007) Patients with Bell's palsy usually progress from onset of symptoms to maximal weakness within three days and almost always within one week. A more insidious onset or progression over more than two weeks should prompt reconsideration of the diagnosis. Left untreated, 85 percent of patients will show at least partial recovery within three weeks of onset.<sup>3</sup>The symptoms of Bell's palsy include pain and numbness on the affected side of the face, especially in the temple, mastoid area, and along the angle of the mandible. The mouth may be dry due to decreased salivary secretion and there may be loss of taste on the anterior part of the tongue as well as hyperacusis on the affected side. (Martha Ann Keels et al., 1987)

### Case report 1

A patient name Master Vinay age of 8 years resident of Davangere reported to private dental clinic with the chief complaint of pain in lower right back tooth region along with pain associated with opening of the mouth since a week. Patient was referred to dental clinic by the patient pediatrician. On examination, deep caries lesion was present in relation to lower right second molar tooth with history of swelling and pus discharge and also caries tooth was seen irt lower left second molar. Patient was prescribed antibiotics and analgesics. Patient mother reported after 3 days with complain of slurred speech and altered path of mouth opening. On extra-oral examination, patient shown deviation of mandible towards left side, inability to close right eyes completely, watering of the right eyes, patient was not able to hold air in mouth on right side. Patient was advised OPG to rule out TMJ abnormalities and fracture. Patient was suspected with Bell's palsy and referred to neurophysician for the confirmatory diagnosis. Patient was diagnosed with Bell's palsy and put under medication and also advised for physiotherapy. Patient was completely recovered within 3weeks. Dental treatment was carried out with Pulpectomy followed by stainless steel crown irt 85 and extraction followed by space maintainer irt 75. After 2 months follow up, patient shown no recurrence of Bell's palsy and no other symptoms. [Refer Figure 1, 2, 3 and 4]



Figure 1. Pre-operative



Figure 2. Inability to hold air in mouth on right side



Figure 3. Inability to close right eye on forced closure



Figure 4. Deviation of jaw to left side



Figure 5. Pre-operative



Figure 6. Deviation of jaw to right side



Figure 7. Inability to hold air in mouth on left side

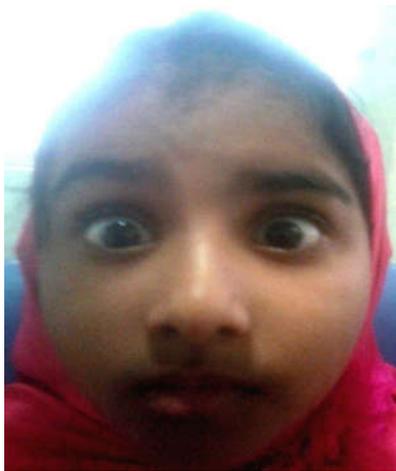


Figure 8. Inability to raise left eyebrow

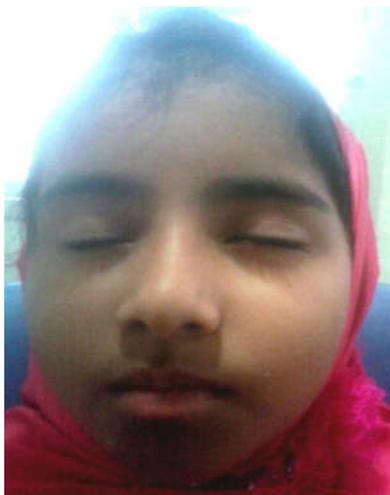


Figure 9. Slight inability to close left eye

### Case report 2

A patient Tabassum age of 7 years resident of Hadagali taluk reported to clinic with the chief complaint of pain in lower left and upper right back tooth region since one month. Patient mother gives medical history of Bell's palsy which was diagnosed a week before by the general physician. On extra-oral

examination, patient shown deviation of mandible towards right side, inability to close left eyes completely, inability to raise the eyebrows on the left side and patient was not able to hold air in mouth on left side. She was under medication which was prescribed by the physician for 3 weeks. She was on tapering dose of Prednisolone along with Serratiopeptidase and zinc and multivitamin tablet along with physiotherapy. Patient underwent her dental treatment with pulp therapy. Patient was recalled after 1 month for the routine check up and she was completely recovered from signs of Bell's palsy. [Refer figure 5,6,7,8 and 9]

### DISCUSSION

Sir Charles Bell's originally described this condition in 1821.<sup>1</sup> The term Bell's palsy is used to describe an acute-onset, idiopathic facial paralysis resulting from a dysfunction anywhere along the peripheral part of the facial nerve from the level of the Pons distally. (Martha Ann Keels *et al.*, 1987) The condition is characterized by sudden onset of complete or partial facial paralysis that usually occurs overnight. Bell's palsy is a much less common cause of facial palsy in children under 10 years of age. So the children affected with Bell's palsy should be carefully reviewed and differential diagnosis must be obtained to rule out any other alternative cause. House-Brackmann has given different grading system in order to assess the degree of nerve damage which ranges from grade I to VI.

**Grade I** - Normal facial function.

**Grade II- Mild dysfunction.** Characteristics include Slight weakness is noted on close inspection, Slight synkinesis may be present, Normal symmetry and tone are noted at rest, Forehead motion is moderate to good, Complete eye closure is achieved with minimal effort, Slight mouth asymmetry is noted.

**Grade III - Moderate dysfunction.** The characteristics includes an obvious, but not disfiguring, difference is noted between the 2 sides, A noticeable, but not severe, synkinesis, contracture, or hemifacial spasm is present, Normal symmetry and tone are noted at rest, Forehead movement is slight to moderate, Complete eye closure is achieved with effort, A slightly weak mouth movement is noted with maximal effort.

**Grade IV- Moderately severe dysfunction** Signs include An obvious weakness and/or disfiguring asymmetry is noted, Symmetry and tone are normal at rest, No forehead motion is observed, Eye closure is incomplete, An asymmetrical mouth is noted with maximal effort.

**Grade V- Severe dysfunction.** Characteristics includes Only a barely perceptible motion is noted, Asymmetry is noted at rest, No forehead motion is observed, Eye closure is incomplete, Mouth movement is only slight.

**Grade VI** - Total paralysis with Gross asymmetry and No movement.

In this system, grades I and II are considered good prognosis, grades III and IV represent moderate dysfunction, and grades V and VI describe poor results. (Tashika Kushraj *et al.*, 2014) Since in both cases, Bell's palsy was detected at its early stage (According to House-Brackmann grading system, it is grade II)

so prognosis was good and both patient recovered completely within 3weeks. The main goal of treatment is to improve the function of the facial nerve and reduce neuronal damage. In most of the cases, no treatment is required as it can spontaneously recover by itself. In the cases which are diagnosed at late stage or which requires treatment can be achieved with pharmacological, non- pharmacological or surgical means. (Julian Holland and Graeme M. Weiner, 2004) Most of the patients were treated with tapering dose of Prednisolone along with the antiviral drugs depending on the cause of onset of the bells palsy. According to the American Academy of Neurology [AAN] guidelines 2012, recommended dose of prednisone is 1 mg/kg or 60 mg/day for 6 days, followed by a taper, for a total of 10 days. But the steroids should be given cautionally in pregnancy, Diabetes mellitus, Renal or hepatic dysfunction and especially in the children's who are in the growth period. (Tashika Kushraj *et al.*, 2014)

### Conclusion

Bell's palsy is peripheral seventh cranial nerve disorder which is less common in the children under age of 10years. The accurate diagnosis of the cause of Bell's palsy and treating in its early stage helps in complete recovery of patient. The recurrence of Bell's palsy is rare in children and most of the patient recovery in 3-4weeks. The steroids should be carefully used in children as it has many side effect on growth of the children. Dentists, especially those who deal with children, should be aware of this disorder.

### REFERENCES

- Jeffrey D. Tiemstra, MD, and Nandini khatkhate, MD, 2007. Bell's palsy: Diagnosis and Management: *American Family Physician*, 17; 7; 997-02.
- Julian Holland, G.N. raeme M. Weiner, 2004. Recent developments in Bell's palsy: *BMJ*, 329(4); 553-7.
- Martha Ann Keels, D.D.S. Linwood M. Long, Jr. DDS, and MS William F. Vann, Jr., DMD, MS, PhD, 1987. Facial nerve paralysis: report of two cases of Bell's palsy: *Pediatric Dentistry*, 9(1);58-63.
- Rajendra, R. and Sivapathasundharam, B. 2006. Diseases of nerves and muscles: Shafer's text book of oral pathology. 5<sup>th</sup> ed. Livingstone: Elsevier; 1163-98.
- Tashika Kushraj, Laxmikanth Chatra1, Prashanth Shenai, K. M. Veena, Prasanna Kumar Rao, Rachana V Prabhu, Prathima Shetty, K.A. Shahin, 2014. Bell's Palsy: A Case Report and Literature Review: *Cukurova Medical Journal*, 39(3):581-588.

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