

Bell Palsy's and its Clinical Significance – A Review.

Nivetha¹, Dr.Saravana Kumar²

First year BDS¹, Senior lecturer²

Department of Anatomy, Saveetha Dental College and Hospitals, Chennai, India.

Abstract:

Bell's palsy and its clinical significance- a review. The aim of the review is to study the cause, symptoms, prevalence and diagnosis of Bell's palsy, clinical significance and facts about Bell's palsy. Bell's palsy is a form of facial paralysis resulting from a dysfunction of cranial nerve VII (facial nerve) causing an inability to control facial muscles on the affected side. In rare cases, it can occur on both sides resulting in total facial paralysis. Bell's palsy is defined as a one-side facial nerve paralysis of unknown cases. Several other conditions can also cause facial paralysis eg : brain tumour, stroke, myasthenia gravis and Lyme disease. The reason for the review is to create awareness about Bell's palsy among human population.

Keywords: Facial nerve, drooling and facial weakness..

INTRODUCTION:

Bell's palsy is named after Sir Charles Bell (1774–1842), who has long been considered to be the first to describe idiopathic facial paralysis in the early 19th century. However, it was discovered that Nicolaus Anton Friedreich (1761–1836) and James Douglas (1675–1742) preceded him in the 18th century [1]. Bell palsy is an acute, peripheral facial paresis of unknown cause. [1] Usually the diagnosis is established without difficulty. [2] Up to 30% of patients with Bell palsy fail to recover facial function completely. [3] The disease is common, with an annual incidence of 20 per 100,000. Thus, thousands of patients with Bell palsy are left with permanent, potentially disfiguring facial weakness each year. Bell's palsy (BP) can cause unilateral paralysis of the facial muscles and synkinesis. Because of the persistence of synkinesis and use of exercises or electric stimulation in an inadequate way, total recovery of the function of the facial muscles can be jeopardized [2]. Bell's palsy is an acute facial paralysis affecting the 7th facial nerve with no detectable cause. It has a reported incidence of about 25 cases per 100 000 population annually [1] and accounts for half of all paralyzes affecting the face. Within 3 months 80% of cases recover but some people are affected permanently, 5–9% have a recurrence, with the average time span between episodes being 10 years.. Incidence is similar in men and women and no seasonal variation is seen. An increase in incidence is seen with increased age [3]. The facial nerve controls a number of functions, such as blinking and closing the eyes, smiling, frowning, lacrimation, salivation, flaring nostrils and raising eyebrows. It also carries taste sensations from the anterior two-thirds of the tongue, via the chorda tympani nerve (a branch of the facial nerve). Because of this, people with Bell's palsy may present with loss of taste sensation in the anterior 2/3 of the tongue on the affected side. [4] The most alarming symptom of Bell's palsy is paresis; up to three quarters of affected patients think they have had a stroke or have an intracranial tumour. The palsy is often sudden in onset and evolves rapidly, with maximal facial weakness developing within two days. Associated symptoms may be hyperacusis, decreased production of tears, and altered taste.

FEATURES:

The signs and symptoms of Bell's palsy include:

- ❖ drooling
- ❖ difficulty eating and drinking
- ❖ an inability to make facial expressions, such as smiling or frowning
- ❖ facial weakness
- ❖ muscle twitches in the face
- ❖ dry eye and mouth
- ❖ a headache
- ❖ sensitivity to sound.

The viruses that have been linked to the development of Bell's palsy include:

- ❖ herpes simplex, which causes cold sores and genital herpes
- ❖ HIV, which damages the immune system
- ❖ sarcoidosis, which causes organ inflammation
- ❖ herpes zoster virus, which causes chickenpox and shingles
- ❖ Epstein-Barr virus, which causes mononucleosis.

Risk of developing Bell's palsy increases if you are:

- ❖ Are pregnant
- ❖ Have diabetes
- ❖ Have lung infection
- ❖ Have family history of condition.

Treatment for Bell's palsy:

- ❖ corticosteroid drugs, which reduce inflammation
- ❖ antiviral medication, which may be prescribed if a virus caused your Bell's palsy
- ❖ over-the-counter pain medications, such as ibuprofen or acetaminophen, which can help relieve mild pain
- ❖ using eye drops and an eye patch (for your dry eye)
- ❖ placing a warm, moist towel over your face to relieve pain
- ❖ massaging your face
- ❖ doing physical therapy exercises to stimulate your facial muscles. [5]

CASE DISCUSSION:

Various case report from different articles are discussed below:

CASE 1:

A healthy 32-year-old male patient reported to the Department of Oral Medicine and Radiology with a complaint of pain on left side of face that was severe, continuous and sharp shooting since 2 - 3 days. Pain was radiating to left auricular region on chewing food and was relieved on taking analgesics over the counter. The facial pain was later preceded by regional facial numbness with left sided 'droopy face' since one day [Table/Fig-1a] and drooling of saliva from left corner of mouth. The patient denied for any history of trauma, surgery or other recent infections (viral and ear infections). His medical, family, personal and previous dental history was unremarkable. Extra orally facial asymmetry was evident with tender and palpable left submandibular lymph node. On close inspection of his palsy, there was loss of action of all muscles of facial expression on the left side, was unable to lift his eyebrow, close his left eye completely, wrinkle his forehead, blow his left cheek and to smile. On intraoral examination, he had decayed left mandibular second molar which was moderately tender on percussion with partially erupted left mandibular third molar and generalised poor periodontal status. A provisional diagnosis of facial nerve paralysis associated with tooth infection was agreed. In differential diagnosis, Idiopathic facial nerve paralysis or Bell's palsy and unilateral facial nerve paralysis due to tumours were encompassed.[6]

CASE 2:

A 47-year-old Asian Indian man with a medical history of hypertension presented to our institution with nausea, vomiting, generalized weakness, facial droop, and slurred speech of 14 hours' duration. His physical examination revealed that he was conscious, lethargic, and had mildly slurred speech. His blood pressure was 216/142 mmHg. His neurologic examination showed that he had loss of left-sided forehead creases, inability to close his left eye, left facial muscle weakness, rightward deviation of the angle of the mouth on smiling, and loss of the left nasolabial fold. Afferent corneal reflexes were present bilaterally. MRI of the head was initially read as negative for acute stroke. Bell's palsy appeared less likely because of the acuity of his presentation, encephalopathy-like imaging, and hypertension. The MRI was re-evaluated with a neurologist's assistance, which revealed a tiny 4 mm infarct involving the left dorsal aspect of the pons. The final diagnosis was isolated facial nerve palsy due to lacunar infarct of dorsal pons and hypertensive encephalopathy[7].

CASE 3:

A 32-year-old heterosexual man who was admitted to the hospital because of fever and confusion and bilateral ptosis.

His past medical history was unremarkable. Fifteen days before admission to the hospital he experienced fever, arthromyalgias, frontal headache, and a maculopapular rash. Treatment with cefuroxime was initiated, without improvement of symptoms. An examination of the patient at admission revealed a maculopapular rash with plantar involvement. The findings of the rest of the physical examination, which included a neurologic examination, were unremarkable. Blood biochemistry results, red blood cell count, and platelet count were within the normal limits. Blood cultures and serological examinations for infection with cytomegalovirus, the hepatitis viruses, Epstein-Barr virus (EBV), *Toxoplasma gondii*, *Brucella* species, and syphilis were all negative. However, ELISA and Western blot analyses were positive for HIV-1 infection. Analyses of cerebrospinal fluid (CSF) samples revealed a glucose content of 2.1 mmol/L (in blood samples, glucose content was 5 mmol/L), a protein content of 1.77 g/L, and 31 lymphocytes/mm³. A Gram-stained smear and culture of CSF for bacteria and mycobacteria were also negative. The CD4+ cell count was 825 cells/mm³ (25%), and the CD8+ cell count was 1683 cells/mm³ (51%). Twenty-four hour after admission, the patient developed bilateral facial palsy. No viral load measurement was available at that time. The patient's condition steadily improved and experienced complete resolution of facial palsy after 3 months[8].

CONCLUSIONS:

Knowledge of the anatomy and clinical significance of Bell's palsy may help the surgeons to make accurate diagnosis and provide appropriate treatment.

REFERENCE:

- 1) Bell's Palsy Before Bell: Cornelis Stalpart van der Wiel's Observation of Bell's Palsy in 1683 *Robert C. van de Graaf and †Jean-Philippe A. Nicolai
- 2) Evidence-based guideline update: Steroids and antivirals for Bell palsy Report of the Guideline Development Subcommittee of the American Academy of Neurology. Gary S. Gronseth, MD, FAAN Remia Paduga, MD
- 3) Effects of Exercises on Bell's Palsy: Systematic Review of Randomized Controlled Trials *Jefferson Rosa Cardoso, †Elsie Cobra Teixeira, *Michelle Damasceno Moreira, ‡Francis Meire Fa'vero, ‡Sissy Veloso Fontes, and ‡Acary Souza Bulle de Oliveira
- 4) Recent developments in Bell's palsy N Julian Holland, Graeme M Weiner.
- 5) Bell's Palsy Written by April Khan and Marijane Leonard Medically Reviewed by Steven Kim, MD on December 11, 2015.
- 6) Facial Pain Followed by Unilateral Facial Nerve Palsy: A Case Report with Literature Review Sowmya GV, Manjunatha BS, [...], and Madhusudan Astekar..
- 7) Pontine stroke presenting as isolated facial nerve palsy mimicking Bell's palsy: a case report Rishi Agarwal Email author, Lochana Manandhar, Paramveer Saluja and Bala Grandhi.
- 8) A rare case of human immunodeficiency virus associated bilateral facial nerve palsy in North India. Sanjay Gupta, Jitendra Kumar Department of Internal Medicine, Max Super Speciality Hospital, Malsi, Dehradun, Uttarakhand, India.