



A Comprehensive Review of Bell's Palsy: Causes, Symptoms and Treatment

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ABSTRACT

Bell's palsy is a form of facial paralysis resulting from a dysfunction of the cranial nerve VII (the facial nerve) that results in the inability to control facial muscles on the affected side. Bell's Palsy has an annual incidence of 15 to 20 per 100,000 people, 40,000 new cases per year, and a lifetime risk of 1 in 60. It affects men and women equally, all ages, all times of the year. There is an increased occurrence of bell's palsy in the elderly, diabetics, hypertensives than in the common population. There is an increased incidence in women in the third trimester of pregnancy 2 weeks preceding delivery and first two weeks postpartum. Multidisciplinary collaboration between interested doctors from a number of subspecialties has increasingly shown to be successful. The burden of long-term disability in facial palsy has been lessened by a patient-centered strategy utilizing physiotherapy, targeted botulinum toxin injection, and selective surgery.

KEYWORDS : Bell's palsy; cranial nerve; facial nerve; corticosteroids; non-steroidal anti-inflammatory drugs;

INTRODUCTION

Named after the Scottish anatomist Sir Charles Bell, Bell's palsy is the most common diagnosis associated with facial nerve paralysis or palsy as well as the most common acute mono- neuropathy. It affects people of all ages and genders, with yearly incidence rates in different groups ranging from 11.5 to 53.5 per 100,00 people.¹ The most frequent cause of lower motor neuron facial palsy is Bell's palsy, an acute-onset peripheral facial neuropathy.² Rapid onset, unilateral, lower motor neuron-type facial weakness, together with postauricular pain, dysgeusia, subjective changes in face sensibility, and hyperacusis, characterize the disorder's clinical presentation. The anatomical design of the facial nerve, notably its mixed nerve profile consisting of motor, sensory, and parasympathetic fibers, can be used to explain this clinical appearance.³

Even though BP has serious consequences, its specific etiology is still unknown.⁴

ETIOLOGY

The exact pathophysiology of Bell's palsy is unknown, some possible etiological factors are:

- Recent studies have suggested that the reactivation of the dormant herpes virus in the geniculate ganglion and its migration to the facial nerve are essential for causation.^{5,6}
- Another possible etiology of Bell's palsy suggested is infection by reactivated viruses, such as varicella zoster virus (VZV)⁷, herpes simplex virus type 1 (HSV -1), human herpes virus 6⁸, and the Usutu virus⁹.
- Numerous lines of evidence have suggested that Bell's palsy is caused by acute demyelination brought on by inflammation.¹⁰
- Severe preeclampsia¹¹
- Radiation exposure¹²
- Migraine¹³
- Recent epidemiological research have shown that exposure to severe temperatures is also linked to the development of BP.¹⁴

RISK FACTORS¹⁵

- Pregnancy

- Diabetes mellitus
- Increasing age
- Hypothyroidism

SIGNS AND SYMPTOMS¹⁶

- Acute onset of unilateral upper and lower facial paralysis
- Posterior auricular pain
- Decreased tearing
- Hyperacusis
- Taste disturbances
- Otagia
- Weakness of the facial muscle
- Poor eyelid closure
- Aching of the ear
- Tingling or numbness of cheek
- Epiphora
- Ocular pain
- Blurred vision
- Flattening of forehead and nasolabial fold on the affected side
- Inability to raise eyebrow on affected side
- Frown lips on affected side

PROGNOSIS¹⁷

House Brackmann facial nerve grading scale is used to grade Bell's palsy.

Table 1: House Brackmann facial nerve grading scale is used to grade Bell's palsy.

Grade	Description	Gross Function	Resting Appearance	Dynamic Appearance
1	normal	normal	normal	normal
2	Mild dysfunction	Slight weakness with effort, may have mild synkinesis	normal	Mild oral & forehead asymmetry, complete eye closure with minimal effort
3	Moderate dysfunction	Obvious asymmetry with movement, noticeable synkinesis or contracture	normal	Mild oral asymmetry, complete eye closure with effort, slight forehead movement
4	Moderately severe dysfunction	Obvious asymmetry, disfiguring asymmetry	normal	Asymmetrical mouth, incomplete eye closure, no forehead movement

5	Severe dysfunction	Barely perceptible movement	asymmetric	Slight oral/nasal movement with effort, incomplete eye closure
6	Total paralysis	none	asymmetric	No movement

TREATMENT

DRUG THERAPY

- Corticosteroids:

The rationale for taking corticosteroids in the acute phase of Bell's palsy is that Bell's palsy is thought to be caused by inflammation and edema of the facial nerve, and corticosteroids have a strong anti-inflammatory effect that should decrease nerve damage and improve the prognosis.¹⁸ All individuals with facial palsy lasting less than 72 hours who do not have steroid medication contraindications should take prednisolone.¹⁹

- Antivirals:

Acyclovir 400 mg can be used five times daily for seven days, or valacyclovir 1 g can be administered three times daily.²⁰

- Combination Therapy:

Patients are given a combination of corticosteroids and antivirals.

NON-DRUG THERAPY²¹

- Facial Decompression:

There are three methods for decompression, including the transmastoid technique, which is commonly utilized when the facial nerve's tympanic or mastoid segments are obviously involved in the paralysis. 180 degrees of the nerve's diameter are decompressed. The middle cranial fossa approach is an additional method that enables decompression in the region of the labyrinthine segment. The third strategy is the translabyrinthine strategy, which might be utilized to intertemporally decompress the facial nerve's complete journey.

- Facial exercises
- Facial muscle retraining

SURGICAL THERAPY

- Facial reconstruction and reanimation:

In order to optimise functional and cosmetic outcomes, surgical static and dynamic approaches might be taken into account in patients with permanent injury and limited recovery potential.²²

CONCLUSION

Bell's palsy is distinguished by the unilateral, acute (over 24 to 72 hours) onset of peripheral facial palsy in isolation; in other words, neither the history nor the results of the neurologic or general examinations point to any other possible diagnoses. There is no physiologically specific treatment for Bell's palsy, and the exact pathophysiology of the condition is unknown. It has been demonstrated that a 10-day course of corticosteroids greatly increases the likelihood of recovery; the addition of an antiviral does not significantly raise the likelihood of recovery, although it cannot be ruled out that it may have a minor advantage, at best. Other than drugs, patients are given non- drug therapy including physical therapies like massage and facial exercises.

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