

Bell's Palsy

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Abstract

Bell's palsy is described by prompt, unilateral paralysis of the cranial nerve. It is the most common cause of acute facial paralysis. Even though the pathogenesis of the condition is poorly understood it is considered to be caused by cranial nerve inflammation. Timely diagnosis and appropriate intervention can improve symptoms and ensure a speedy recovery. This article is a representation of a case report of proper treatment and intervention of a patient diagnosed with Bell's Palsy who fully recovered.

Keywords: Bell's palsy; Risk factors; Paralysis.

Introduction

Bell's palsy is one of the most common conditions that cause temporary weakness and leads to partial paralysis in the face. It means an individual with Bell's palsy experiences paralysis of the muscles in the face. It may happen due to swollen, inflamed, or compressed nerves, a nerve that controls the muscles in the face. It has been researched that the weakness can be temporary and improves over time within a few weeks. However, one side of paralysis makes the face stiff. People with Bell's palsy often feel trouble while smiling and cannot feel ease while closing their eyes on the affected side [1]. It is researched that there is no specific age for Bell's palsy to occur. However, most cases are between 16 to 60 years old. A person who has

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described this condition, Scottish anatomist Charles Bell, has named it Bell's palsy.

Causes

Although the exact cause of Bell's palsy condition is still unknown, physicians consider facial nerves one of the most significant causes. It ultimately leads to facial swelling. It has been researched that this nerve passes through a bony and narrow area within the skull and pushes its hard surface when the nerve swells, even if it swells a little. It affects how well the nerve functions. This nerve is most likely to affect saliva, tears, a

small bone in the middle of the ear, and taste [2]. Additionally, the causes of Bell's palsy may include viral infections. It has been researched that the herpes simplex 1 virus plays a significant role in a large number of cases. This virus is mainly a common cause of cold sores. Other viruses that could be the cause of Bell's palsy may include:

- German measles (rubella)
- Mumps (mumps virus)
- Flu (influenza B)
- Adenovirus (respiratory conditions)
- Cytomegalovirus
- Chickenpox and shingles (herpes zoster)
- Infectious mononucleosis (Epstein-Barr)
- Hand-foot-and-mouth disease (coxsackievirus)

Symptoms

The symptoms of Bell's palsy may vary from mild weakness to severe weakness, which ultimately turns into total paralysis. The form of paralysis seems more severe when the facial nerve is exposed to more compression and inflammation. Sometimes the symptoms of

Bell's palsy appear abruptly, while other times you may develop it 1 to 2 weeks after having an ear infection, cold, or eye infection.

One may feel fine one night and see the symptoms of Bell's palsy right in the morning. These symptoms after appearing turn into a worse condition within 48 to 72 hours. A person with Bell's palsy may feel droopy on one side of the face and seems irritated while opening that side's eye. Rarely some cases are seen in which both sides of the face are affected. Other symptoms may include a droopy mouth, facial weakness, difficulty in frowning or smiling, difficulty pronouncing words, drooling, altered taste, dry mouth and eye, muscle twitches in the face, headache, difficulty drinking or eating, sensitivity to sound and tinnitus (ringing in the ear) [3]. After a person starts experiencing these symptoms, they are probably getting better over the next 2 to 4 weeks or sometimes more. In some cases of Bell's palsy, people experience no symptoms, up to 80% within 3 to 6 months. Yet, some people may require a longer recovery time. It depends on the severity of the condition. However, one should never try to ignore these symptoms as they can be similar to a brain tumor or stroke.

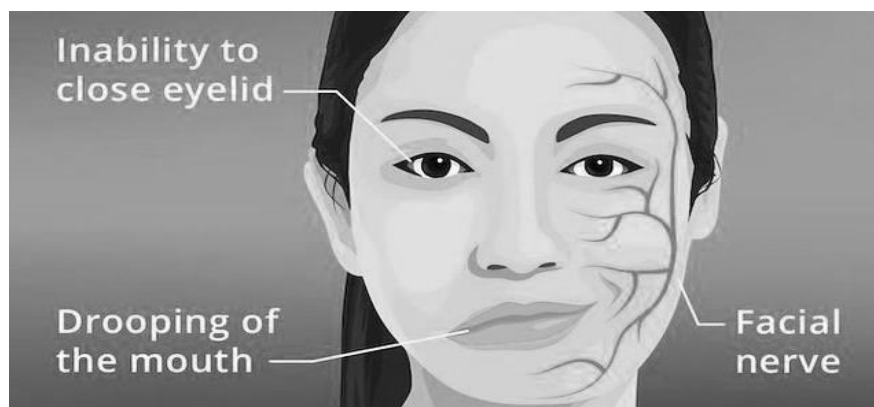


Figure 1: Symptoms.

Risk factors

Studies have shown that people between 15 to 60 years of age are most likely to be affected by Bell's palsy. It affects men as well as women. Yet, those who are pregnant are more inclined to be affected by Bell's palsy. They have the tendency to be influenced during the first week or the last 3 months after giving birth. People with diabetes, autoimmune disease, cold sores, and high blood pressure have a higher risk factor influenced by Bell's palsy. Those with a lung infection, genetic history, mononucleosis, and shingles are also likely to get this disease. Additionally, people with obesity are also affected by it.

It has been researched that recurrent attacks exist in rare cases. However, people with genetic history have the chance of recurrent attacks of Bell's palsy. It shows that genes are involved in recurrent attacks.

Diagnosis

It has been researched that physicians start determining from the physical examination as they will examine the face of the patient and try to notice different facial expressions that the patient makes. They examine the facial muscles. Doctors are supposed to ask to close the affected side's eyelid of the face. Bell phenomenon is indicated if a patient feels unable to close it properly. Their eye rolls outward and upward, which ultimately lets the doctor know about the exact condition.

It is a form of diagnosis in Bell's palsy case. The doctors may choose a method of ruling out other conditions by testing the sense of balance, hearing, etc. [3].

Patients with the chance of other conditions may require an electromyography (EMG) test. This test is to measure the electrical activity inside the muscles. A doctor may insert thin wire electrodes into the muscles of the patient in order to finalize whether the nerves that control the facial muscles cause damage or not. The range of damage is also determined through the EMG test. Moreover, EMG will also predict the estimated recovery time.

The other kind of diagnosis is performed through imaging tests, including MRI, CT scan, or skull x-rays. These tests are performed in order to investigate the possibility of stroke or brain tumor by analyzing nerves in the face. Other tests, including blood tests, may help the doctor understand the chances of diabetes. Blood tests are used to analyze bacterial or viral infections. Another test named lumbar puncture is also performed to suspect Lyme disease. It has been investigated that patients with Lyme disease have a history of rash, tick exposure and arthralgia. There are no specific lab tests that are used to diagnose Bell's palsy directly. Instead, doctors use a way of ruling out other conditions in order to suspect Bell's palsy.

Treatment

Research has shown that people with Bell's palsy may become fully recovered without getting treatment. Nonetheless, some treatments are available that help speeds up the recovery. Some medications are involved. They may include corticosteroid drugs like prednisone used to reduce inflammation. Prednisone is often prescribed with the start of 60 mg per day in a 10-day tapering course.

Research has shown that this treatment is safe clinically and showed more benefits. These drugs may relieve swelling and make the patient more inclined to the normally functioned nerves. The purpose of this drug is to decrease inflammation in order to shorten the period of symptoms. When a patient starts noticing symptoms, this drug should be taken within 72 hours for efficient functioning [5].

There is an antiviral medication that is prescribed when there are chances of being triggered by shingles (herpes zoster) or herpes virus (herpes simplex 1). Antiviral medication is provided when a virus or bacteria is supposed to cause Bell's palsy. It has been investigated that antiviral like valacyclovir and acyclovir with steroids may help restore function instantly. It has been estimated that 400mg of acyclovir is prescribed to the patient with Bell's palsy five times per day. It is a seven-day course. Other physicians prefer to treat with 1 g of valacyclovir for 7 days which should be taken 3 times per day. The onset of symptoms reduced with the use of antivirals [6].

Eye drops and ointment are given to the patient with Bell's palsy in order to take care of dry eyes. It's because the person may feel difficulty blinking their eyes. Also, the doctors ask them to wear an eye patch to keep the moisture in and dirt out.

Over-the-counter medications, including acetaminophen and ibuprofen, are also required for patients with Bell's palsy in order to get rid of severe pain. When the complications do not end through these medicines and remedies, the doctor may

suggest some kind of surgery. However, surgery could never be the first suitable option in Bell's palsy case.

Case report

60-year-old male brought in by EMS to the ER. Patient's chief complaint was left sided facial droop with a past medical history of hypertension. A stroke alert was called and neurologist added to the case. Patient was assessed and examined with no other signs of stroke. MRA of the Head showed no evidence of aneurysm. MRI of the Brain showed no signs of acute intracranial abnormalities. CT of Head of Stoke Protocol confirmed no intracranial abnormalities. The patient was diagnosed with Bell's Palsy. This patient was treated with valacyclovir 1g daily for 7 days, prednisone 60mg three times a day for 7 days, and kept under cardiac core measures with regular scheduled hypertensive meds and observation. This patient showed signs of significant improvement and was discharged home to continue treatment and management.

Bell's palsy management

It is necessary to cope with Bell's palsy along with the medication. The ways of management involve

Artificial tears, eye drops, and ointment

People who are unable to close their eyelids completely or find it difficult to blink may have exposure to keratitis. It is important to treat it, otherwise, the cornea can be damaged. In this case, lubricating eye drops or artificial tears that would not irritate the eyes should be used.

The thicker ointment is important to prevent moisture loss which is very common in Bell palsy conditions. Hence, to lessen the blurry vision and remove the dryness, there is a need to put a heavy lubricating ointment in the eye [7].

Using an eye patch

Using an eye patch is one of the most common remedies used to cope with Bell's palsy. It is suggested that placing a moisture chamber or a patch over the eye may prevent dry eye.

Tape the affected eye

During the night, eyes are most likely to experience dryness which needs to be protected by surgical tape. This would help prevent moisture and dryness.

Using straw

While having a droopy mouth, it is complicated to drink from the glass. Therefore, use a straw to reduce dribbling water or other beverages down your chin.

Alternative therapies

Research recommends using complementary therapies in order to ease Bell's palsy symptoms. For instance, a patient may use relaxation techniques or stress reduction strategies in order to manage their symptoms.

Complications

Research shows that a mild case of Bell's palsy may disappear within 4 weeks. However, people with severe cases may take time to be recovered. If the face is completely paralyzed,

recovery takes time. The complications for severe cases may include irreversible damage to the facial nerve of the patient. A person is more likely to experience the complication of irregular regrowth of nerve fibers. It may lead to involuntary contraction of muscles while moving other muscles. Sometimes a patient is inclined to experience complete or partial blindness of the eye that cannot be closed. The reason for this complication could be excessive dryness. Additionally, it could be due to scratching of the cornea (the protective covering of the eye).

In some cases, patients with Bell's palsy experience damage to their seventh cranial nerve. This is the nerve that controls the facial muscles. Sometimes complications may lead to excessive dryness, vision loss, and ulcers.

Conclusion

Bell's palsy may lead to complete paralysis of the facial muscles or cause mild weakness on one side of the face. The reason behind this condition is the cranial nerve that controls the facial muscles gets compressed or inflamed. Several treatments are recommended by the doctors once they diagnose the condition by ruling out all other conditions. These treatments may include medications, sometimes surgeries, and home remedies. It is a temporary condition, yet a person may take longer to recover from severe symptoms. It is necessary to go to the doctor while experiencing any kind of paralysis because it could be a stroke as well. Both Bell's palsy and stroke have similar symptoms, therefore it is important to visit a doctor to get a sooner recovery.

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