

COVID-19 and Bell's Palsy

Subjects: **Infectious Diseases**

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There are various neurological manifestations of coronavirus disease 2019 (COVID-19). Recent data suggest a connection between hemifacial paralysis, or Bell's palsy, and COVID-19. Although the etiology of Bell's palsy is unknown, the leading proposed etiology is viral in nature. Since the onset of the pandemic, numerous studies have investigated the relationship between Bell's palsy, COVID-19 infection, and COVID-19 vaccination. The researchers studied the current literature on the topic of COVID-19 as it relates to Bell's palsy.

coronavirus disease 2019

Bell's palsy

facial paralysis

vaccination

Bell's palsy (BP) is defined as idiopathic unilateral paresis or paralysis of cranial nerve VII, the facial nerve. It clinically manifests as an acute onset weakness of the muscles that control facial expression. Patients may notice drooling from the corner of the mouth, inability to completely close the eye, or facial asymmetry. Less commonly, patients may develop facial pain, numbness, alterations in taste, or sensitivity to sound. It occurs as hemi-facial paralysis (on one side) and may be partial or complete in regard to facial nerve dysfunction. It affects about 15 to 30 out of 100,000 people per year with a peak incidence between age 15 and 40 ^[1]. The condition equally affects men and women, however pregnant women may be at a slightly elevated risk ^[2]. Although the cause of BP is yet to be determined, the leading proposed etiologies are viral, ischemic, and/or immune mediated. One proposed mechanism is re-activation of the herpes simplex virus at the geniculate ganglion of the facial nerve.

Although inconsistent, studies have demonstrated a high incidence of the herpes simplex virus in cases of BP ^[3]. About 70% of people will fully recover facial nerve function; however, the remaining 30% are left with varying degrees of dysfunction ^[2]. BP is a diagnosis of exclusion, and it is important to consider other causes of facial nerve weakness, such as parotid lesions or skull base tumors, congenital or syndromic conditions, trauma, and known associated infections, such as Lyme disease or herpes zoster.

Clinical improvement occurs within three weeks of onset in 85% of people and within three to five months in the remaining 15% ^[2]. The House–Brackmann scale is a numeric point system typically used to measure the degree of paresis and grades recovery; it is based on grading facial symmetry and movement. Treatment at the onset of BP includes systemic corticosteroids and antivirals. Depending on the degree of dysfunction, eye precautions may be recommended to prevent exposure keratopathy in cases of incomplete eye closure. Given the overall good prognosis within 3 months, incomplete recovery should prompt workup for alternative causes of the paralysis, including magnetic resonance imaging of the brain. Physical rehabilitation, chemodenervation, and even surgical procedures may be employed in cases of incomplete recovery.

Coronavirus disease 2019 (COVID-19) is caused by the novel virus, severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2). Its clinical symptomatology is most commonly characterized by respiratory illness; however, serious complications and a wide array of less predictable side effects have challenged patients, clinicians, and scientists. Acute respiratory distress syndrome, acute heart and kidney injury, disseminated intravascular coagulation, and sepsis are some of the more consequential complications of COVID-19. Since the onset of the pandemic, there have been numerous reported neurologic manifestations of the illness; anosmia (loss of smell) and ageusia (loss of taste) were two very common symptoms of COVID-19 early on. In a systematic review of 37 articles released prior to May 20th, 2020, the most common neurologic manifestations of the disease were myalgia, headache, altered sensorium, hyposmia, and hypogeusia. Other manifestations of COVID-19 included myelitis, Guillain–Barre syndrome, encephalopathy, ischemic stroke, and intracerebral hemorrhage [4].

Another neurologic manifestation of COVID-19 with numerous reports in the literature is BP. In addition to COVID-19 infections, the association of the COVID-19 vaccine and BP has also been controversial. This manuscript explores the available literature on this topic, none of which provide definitive evidence of the presence, or lack of, an association of BP with COVID-19 infection or vaccination.

References

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