

## Bell's Palsy as a Neurological Manifestation of Covid-19 Infection: A Rare Case Report

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### Abstract

Coronaviruses are a novel significant pandemic infectious disease that was identified mainly causing respiratory symptoms in Wuhan At the end of 2019 [1]. Bell's palsy is the most common cause of peripheral facial palsy due to a viral etiology. Pain in the mastoid area can be the first symptoms and cause facial hemiparesis [2,3] We describe a case of Covid-19-related subacute thyroiditis.

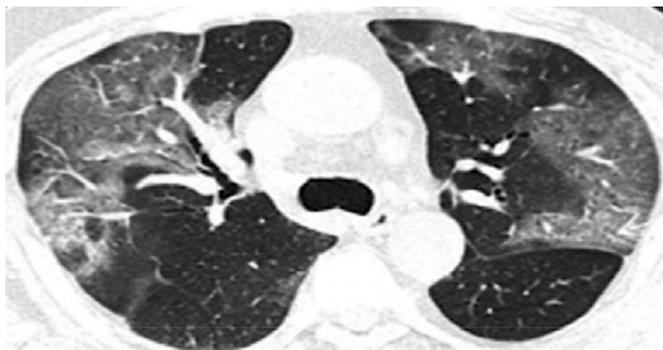
**Keywords:** Covid-19 , Bell's palsy, Respiratory symptoms.

### Introduction

**Case presentation :** A 55-year-old man was referred to an internal medicine clinic for 3 days due to left facial limp after developed with fever, cough, body pain and other symptoms. Physical examination revealed right peripheral seventh facial nerve paralysis and incomplete eye closure (**Figure 1**). Brain magnetic resonance imaging revealed no irregularity. However, high resolution computed tomography (HRCT) shows the ground-glass opacity in the peripheral and bilateral lower lobes of both lung (**Figure 2**). Sampling of throat swabs and real-time reverse transcription-polymerase chain reaction (RT-PCR) marks for COVID-19. Common laboratory findings revealed elevated erythrocyte sedimentation rate (ESR) and C-reactive protein level. Facial paralysis reduced and complete recovery after conservative management and two times of negative RT-PCR test results was detected from him. HRCT of lung complete absorption after 1 month later (**Figure 3**).



**Figure 1.** Right facial nerve palsy and incomplete eye closure.



**Figure 2.** Ground-glass opacity in peripheral and bilateral lower lobes of both lungs.



**Figure 3.** HRCT of lung complete absorption after 1 month.

## Conclusion

Bell's palsy is the most common cause of peripheral facial palsy due to a viral etiology. HSV (Herpes simplex virus) infection is the most likely cause of Bell's palsy. Pain in the mastoid area can be the first symptoms and cause facial hemiparesis [2,3]. COVID-19 is an RNA virus that spreads rapidly, resulting in an epidemic in China. COVID-19 presenting a high powerful of one-to-one transmission and so causal to a large epidemic of coronavirus disease (COVID-19). The incubation period of COVID-19 is believed to be 14 days after contact. Range of symptomatic infection sort from mild to severe; most infections are mild symptoms. COVID-19 causes most of the upper and lower respiratory symptoms [4,5]. Almost one researcher emphasized that COVID-19 can be a neurological symptom such as vertigo, headache, Confusion, and etc [6]. However, Bell's palsy has not been reported as the first common neurologic symptoms.

## Discussion

Bell's palsy is the most common neurologic sequelae that occurs in approximately two-thirds of the all causes of facial hemiparesia [2]. Pathogenesis and etiology of it was not clear recognized. A herpes simplex-mediated viral inflammatory/immune response was the subject of disagreement. Nerve paralysis ordinarily occurs 7-14 day after infected [2-3]. Another etiology of spontaneous unilateral facial paralysis contain Epstein-Barr virus, cytomegalovirus, adenovirus and etc. [7,8].

Coronaviruses is a novel significant pandemic infectious disease that mainly caused respiratory symptoms in Wuhan at the end of 2019. [1]. This spread rapidly, resulting in an epidemic throughout China that offers a large one-to-one power transmission. The incubation period for COVID-19 is believed to be 14 days after contact. The range of symptomatic infection ranges from mild to severe; most infections are mild symptoms. COVID-19 causes most of the upper and lower respiratory symptoms, but cardiovascular, gastrointestinal, and neurological manifestations have been reported in patients was infected with COVID-19. Neurological Manifestations such as vertigo, headache, confusion was occur in it [4,5]. In this patient, except for SARS-CoV-2, herpes zoster and other viral antigens was not diagnosed. Hence, it is believed that the COVID-19 virus can be linked with Bell's palsy in our case reported.

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