Case Report

ISOLATED LIMB PARAESTHESIA AS INITIAL SYMPTOM OF COVID-19 INFECTION: A CASE REPORT

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Abstract

Background: Neurological symptoms might be associated with a COVID-19 infection. These symptoms are rare in the early presentation of COVID-19. The neurological symptoms and associated diseases reported include headache, loss of taste, smell, meningoencephalitis and acute hemorrhagic necrotizing encephalopathy. These neurological symptoms and diseases occur when the disease is severe with systemic manifestations.

Case Presentation: Our patient reported paraesthesia and occasional pain on the left lower limb as the initial symptoms without other signs of viral infection like cough or fever.

Conclusion: Such atypical presentations pose a risk of exposure to health care workers and as such, full PPE should be worn when attending to patients. While post-viral Guillain-Barré syndrome has been reported in COVID-19 infections, isolated paraesthesia has not been described as the initial symptom.

Keywords: Neurological symptoms, COVID-19, Paresthesia.

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INTRODUCTION

The outbreak of the novel coronavirus disease (COVID-19) has resulted in the current global health crisis and has completely changed the world order. As of February 2021, there have been more than 114 million cases and over 2.53 million fatalities.[1] The typical symptoms are in the respiratory system with dry cough and dyspnea being the commonest, other associated symptoms are being described. They include fever, diarrhea, abdominal pain, fatigue, and altered mental status. The potential neurologic manifestations are gradually being documented but unfortunately, they are underreported.[2] A potential association between COVID-19 and Guillain-Barré syndrome (GBS) has been published recently.[3,4] Others have reported meningoencephalitis[5] and acute hemorrhagic necrotizing encephalopathy.[6] Mao et al[7] retrospectively assessed 214 patients at Wuhan and 34.6% of them had neurological symptoms. The most common symptoms were unspecific like dizziness and headache but also taste and smell impairment. Neurological symptoms were more common in severe cases. However, a clear case of isolated paresthesia being associated with COVID-19 has been poorly reported. In this report, we present a case of isolated limb paraesthesia and occasional pain as the initial symptoms of COVID-19.

CASE REPORT

A 45-year-old male post-office worker presented to the pain clinic with a complaint of a 3-day history of tingling sensation and occasional pain in his left lower limb. There was no known aggravating nor relieving factor. There was

no history of associated respiratory symptoms, no prior trauma, no lifting of heavy objects, no headache nor any other neurological symptoms, no history of similar complaint in the past. His medical history was remarkable for hypertension which was under control with hydrochlorothiazide and lisinopril. He denies a history of kidney disease, diabetes, and lead exposure. The patient was otherwise healthy and denied tobacco, alcohol, substance abuse, or recent travel. He has taken Tylenol but with minimal relief. On a level of 0-10 scale of pain assessment, the patient rated his pain as 3. Vital signs were unremarkable for a body temperature of 37.4°C, blood pressure of 126/67 mm Hg, pulse of 69 beats per minute, and oxygen saturation of 97% on room air. Physical examination revealed nonlabored respirations and clear lungs. The neurologic examination confirmed hyperesthesia of the left leg at the lower dermatomal distribution of L_4, L_5. Straight leg raising test was negative. Samples were collected for blood work and CSF analysis. The patient was told to go for cerebral and lumbo-sacral MRI and come back the following day with the result. Oral form of Ibuprofen was prescribed.

The following day, the patient presented but could not do the MRI scan because of the cost. The routine laboratory blood tests including renal and liver function, electrolytes, CRP, blood cell count, plasma glucose, vitamins, lead and muscle enzymes were normal. The CSF cell count was increased (>500). However, the clinic protocol was to screen all patients with normal laboratory results for COVID-19. The patient was counseled for COVD-19 screening and he gave consent. The result came out positive and he was referred to the designated centers for COVID-19 treatment. The Ibuprofen was discontinued. Unfortunately, full PPE was never donned to his encounters. At one of the designated centers, patient was seen and placed on vitamin B complex and Tylenol. He was subsequently discharged home to self-quarantine but 4 days later, he developed mild respiratory symptoms-occasional unproductive cough with oxygen saturation of 92% in room air, no dyspnea and went back to the center. He was admitted and treated according to the center's protocol for COVID-19 management. He was discharged home after 3 weeks. He presented at our clinic on a follow up visit 2 weeks later and was found to be symptom free of limb paraesthesia.

DISCUSSION

Atypical presentations of COVID-19 continue to be on the rise. The patient described in this case report had no initial complaint of any respiratory symptoms which are common in COVD-19 cases. The clinic team was never suspicious of potential COVID-19 in a patient with isolated paraesthesia. Subsequently, full PPEs were not worn by the team members. As a result, 10 members of the clinic team and 14 patients that presented the same days with the index case were notified of their potential exposure.

Initial presentation of COVID-19 with neurological symptoms seems to be rare. The neurological symptoms often appear later with severe systemic manifestation and they include headache,[8] smell loss and even postinfectious GBS.[9]

The occupational history of the patient is relevant as has been pointed out that poorly protected post office workers were catching COVID-19 in thousands.[10] If the patient were evaluated with cognizance of his work history, more suspicion could have resulted in full protection by wearing the full PPE.

The patient has no health insurance and could not pay for MRI scan which might have revealed any neuronal degeneration. The CSF finding of the patient was suggestive of bacterial infection.

However, there is hyperinflammatory state secondary to COVID-19, with massive release of cytokines and chemokines which could account for the elevated CSF cell count.[11] One severely affected patient from Japan with symptoms fitting to meningoencephalitis had 12 cells per microliter in the CSF and the MRI findings indicated ventriculitis and encephalitis.[12] Our case showed that neurological symptoms can be the first manifestation of COVID-19 disease, although this can be an incidental finding. The exact mechanism of central nervous system invasion remains speculative, the symptoms might be due to direct neurotropism of the virus. Like other Coronaviruses, the COVID-19 virus probably reaches the nervous system via different routes, particularly via retrograde axonal path as suggested by taste and olfaction loss.[13]

The atypical presentation and poor appreciation of potential occupational exposure, in this case, led to unnecessary health care workers' exposures and risk. As community spread becomes more prevalent, the health care team must assess the level of risk in all the patients they encounter.[13] Full PPE should be worn while attending to the patients. As we continue to explore the end to this global health crisis, we must apply all aspects of patients' history in the formulation of a provisional diagnosis. In so doing, the health workers will be much more proactive in preventive measures.

CONCLUSSION

Atypical presentation of COVID-19 has been described in this case. It underlines the importance of including COVID-19 in the differential diagnosis of patients presenting with neurological symptoms on a background of potential occupational exposure. Health care workers need to be vigilant of atypical presentations of COVID-19 and consider full PPE for all patients as community spread increases while attempts are being made to curtail it through the vaccine.

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Declaration of competing interest

The authors report no conflict of interest.

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