An interesting case of COVID-19 with transient ischemic attack as a delayed neurological complication

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ABSTRACT
COVID-19, the ongoing pandemic is known to affect almost every organ system, however the incidence of TIA is not as well established. So, here, we report a rare case of COVID-19 with transient ischemic attack (TIA) as a delayed complication.

Keywords: COVID-19, Neurological complication, TIA,

Background
COVID-19 is an infectious disease caused by the SARS-CoV-2 virus, first reported in December 2019 in the city of Wuhan, China and now causing a worldwide pandemic. COVID-19 is known to cause predominantly respiratory symptoms ranging widely from mild upper respiratory involvement to severe pneumonia. However, COVID-19 is known to affect almost every system in the human body. Neurological manifestations of COVID-19, both immediate and delayed, have been reported with the most common symptoms including headache, dizziness, anosmia, and ageusia. Severe neurological findings have also been reported, with ischemic stroke estimated to occur in 1%–3% of COVID-19 patients at a rate similar to other COV infections (SARS-CoV-1 and MERS-CoV). The incidence of TIA is not as well established, in part due to the transient nature of symptoms, nor has significant analysis of complication rates in general been done in the Indian population. We report a case of COVID-19 with transient ischemic attack (TIA) as a delayed complication.

Case Review
A 51-year-old obese male (BMI 39.2 kg/m²) without other known medical history from New Delhi, India developed symptoms suspicious for COVID-19 infection, including sore throat, cough, nasal congestion, headache, and body aches. The following day, he developed subjective fever. After two days of symptoms, he sought medical attention and a COVID-19 RT-PCR test was performed with positive result. He was placed into home isolation and contact tracing was performed, identifying five close contacts: the patient's wife, adult son, daughter, and two coworkers. All were placed in quarantine, and all were subsequently negative for COVID-19 on follow-up PCR testing. No clear source of the patient's infection, beyond significant community transmission occurring at the time, was able to be identified. The patient's symptoms of illness resolved fully, and he completed his isolation period without incident.

On day 23 after the first appearance of COVID-19 symptoms, the patient started experiencing numbness and tingling of the tongue and the left side of the trunk. He was admitted to hospital for further evaluation, with blood analysis and cardiac and neurologic testing ordered. His ECG and echocardiogram were normal. Despite no known past history of cerebrovascular event, MRI of the brain noted chronic lacunar infarcts of the caudate nucleus, corona radiata, and right frontal region with...
mild dilatation of the right frontal horn as well as age-related chronic ischemic changes; incidental note was also made of an arachnoid cyst in the posterior fossa. An EEG showed normal result. Laboratory analysis showed mild hypertriglyceridemia and low vitamin D3 but was otherwise unremarkable. Within 24 hours of onset, the reported numbness and tingling had entirely resolved. The patient did additionally develop persistent sleep onset insomnia during and after his hospitalization.

The consultant neurologist’s recommended course of stroke prevention therapy included lifestyle modification, antithrombotic therapy (clopidogrel 75 mg and aspirin 75 mg once daily by mouth), a statin (atorvastatin 40 mg once daily by mouth), and fenofibrate 145 mg once daily by mouth due to elevated triglycerides. During hospitalization he was placed on Oxcarbazepine and citicoline for his symptoms of numbness, which were later discontinued as symptoms had resolved. He was further started on alprazolam 0.25 mg and melatonin 3 mg for his insomnia during post-hospital follow up. His symptoms remain entirely resolved at present time, though he remains on antithrombotic and antihyperlipidemic therapies.

Conclusions and Recommendations

COVID-19 has been associated with many neurological manifestations such as confusion, anosmia, and ageusia with stroke and TIA less frequent but still with the potential to contribute significant additional morbidity and mortality given the pandemic nature of COVID-19. In particular, this case highlights the difficulty in determining risk for neurologic complications of COVID-19: the Stroke Risk Calculator would have placed this patient in the low-risk category, and he had no known history of ischemic disease, yet the MRI done at the time of his presentation to the hospital revealed chronic lacunar infarcts. Determining the overall incidence of TIA in COVID-19 positive patients, as well as quantifying individual risk for TIA and other neurologic complications of COVID-19 will require significant further multi-centric data analysis.

In primary care practice we see so many COVID-19 cases nowadays, and with ever evolving newer variants, it is here to stay as an endemic even after the pandemic ends; therefore, it is difficult to ignore rare but serious complications.

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Conflicts of interest

There are no conflicts of interest.

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