Prolonged SARS-CoV-2 RT-PCR positivity in a patient with aneurysmal subarachnoid hemorrhage

Dear Editor,

The median duration of SARS-CoV-2 infection is about 20–28 days and longer in elderly, those with comorbidities, severe infection and immunosuppression. Few reports have documented positive RT-PCR up to 60–63 days.[1,2]

We report prolonged SARS-CoV-2 RT-PCR positivity in a patient with aneurysmal subarachnoid hemorrhage (aSAH) and discuss the dilemma and implications of managing such a patient.

A 55-year-old woman presented with a 1-day history of headache, dizziness, and vomiting. At presentation, her Glasgow Coma Scale score was E4V1M5 with equal and responsive pupils. She was receiving telmisartan for hypertension management. Following imaging, she was diagnosed with aSAH, secondary to rupture of anterior communicating artery aneurysm.

As per our hospital policy in June 2020, COVID-19 score ≥5, based on the exposure risks and clinical manifestations, was an indication for SARS-CoV-2 RT-PCR testing. This patient with a score of 6 tested positive for COVID-19 on day 5 of presentation. She was intubated and managed in a COVID-19-dedicated ICU. Surgical intervention was not considered in view poor neurological status. Chest imaging on day 3 revealed fibrotic changes in the left lung with tractional bronchiectasis [Figure 1]. Later, she developed pneumonia requiring strategies to improve oxygenation and ventilation. Her medical management included paracetamol, mannitol, morphine, nimodipine, dexamethasone, azithromycin, zinc, multivitamins, and antibiotics based on culture sensitivity. Despite elevated D-dimer (2945 ng/dL) on day 8, heparin was delayed till 14th day due to concerns of aneurysmal rebleeding. Inflammatory markers such as C-reactive protein (CRP) and lactate dehydrogenase remained elevated till day 58. Alkaline phosphatase (ALP) was also high throughout the hospital stay (481–1766 U/L). She underwent surgical tracheostomy as her neurological status remained poor and weaning was unsuccessful. RT-PCR test repeated on days 15, 23, 31, 38, 44, and 56, persistently remained positive. The patient became weakly positive for COVID-19 IgG antibodies on day 61 with titers of 5.87 and turned RT-PCR negative on day 66. She was discharged from the hospital on day 86 in same neurological status.

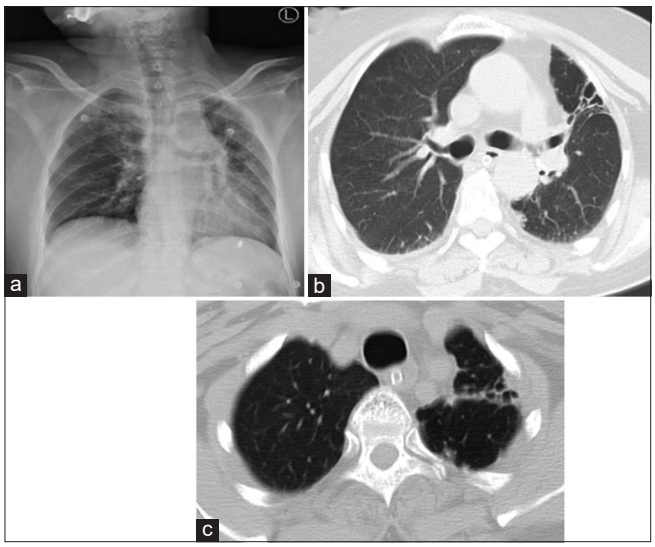

Figure 1: (a) Frontal chest radiograph reveals left lung fibrosis. Non-contrast CT thorax (b and c) shows left lung fibrotic changes along with tractional bronchiectasis

Mortality is high in neurological patients with concomitant COVID-19 infection.[3] Prolonged SARS-CoV-2 RT-PCR positivity in neurosurgical patients results in dilemma regarding certain management aspects (anticoagulation, surgery, imaging, COVID-19 ICU care) and can adversely impact outcomes. SARS-CoV-2 viral replication is prolonged in elderly patients with comorbidities. Relapse or rebound infection is a concern in patients with persistently positive on RT-PCR[4] and possibility of infection transmission cannot be completely negated. In the absence of viral culture, it is unclear if occurrence of prolonged nucleic acid conversion contributes to prolonged infectivity. Virus infectivity decreases when RT-PCR cycle threshold (Ct) values are >24 and Ct values of are inversely related to viral load.[5] However, viral culture are not routinely done, and Ct values of RT-PCR are not generally reported. Their utility should be explored in prolonged RT-PCR positive situations to decide discontinuation of infection transmission precautions. To conclude, prolonged SARS-CoV-2 RT-PCR positivity not only has financial and clinical implications, but also precludes an opportunity for other potentially salvageable patients requiring COVID-ICU care.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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