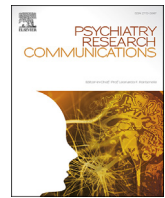




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Seizure and neuropsychiatric compromise as onset of SARS-CoV-2 associated encephalitis

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ABSTRACT

Infectious SARS-CoV-2 meningitis is rare, especially as the first manifestation of a SARS-CoV-2 infection. Infectious SARS-CoV-2 meningitis can initially manifest with seizures and neuropsychiatric abnormalities, worsen to the point of coma, and occasionally lead to death. Patients with infectious SARS-CoV-2 meningitis require comprehensive evaluation and forced treatment in order to improve the often poor outcome.

Letter to the Editor

We eagerly read the interesting article by Orsini et al. about a 52 years-old male who presented to a neurological practice with three days of acute inattention, memory impairment, and word finding disorder, accompanied by psychomotor restlessness, aggressiveness, and a seizure (Orsini et al., 2021). Investigations in a hospital revealed a slight lymphocytic pleocytosis, an increased cerebro-spinal fluid (CSF) protein, and a positive PCR for SARS-CoV-2 in the CSF (Orsini et al., 2021). Meningo-encephalitis was diagnosed leading first to coma and finally to death (Orsini et al., 2021). The study is appealing but raises concerns that need to be discussed.

We should be informed of the exact timing of the abnormalities described. We should be told when the neuropsychiatric abnormalities and when the seizure occurred. We should know the seizure semiology, seizure frequency, whether the patient had suffered one or more seizure(s), whether the seizure(s) were witnessed or not, whether generalised or focal seizure(s) were reported, how long they lasted, whether the seizures were self-limiting or required treatment, whether the seizures were accompanied by a short or long-term disorientation, whether the seizures were complicated by a secessus or a tongue bite, whether only a single or multiple electro-encephalographies (EEGs) were recorded, and whether or not long-term anti-seizure treatment was started. Assuming that the seizure was the first clinical manifestation of SARS-CoV-2

associated meningo-encephalitis, it is conceivable that the reported neuro-psychological abnormalities could also be interpreted as prolonged post-ictal reorientation phase.

In addition to the therapy for the seizures, we should be informed about the therapy of meningo-encephalitis and the COVID-19 disease, in particular, whether intubation and mechanical ventilation were necessary or not.

An image showing the cerebral MRI with contrast medium would be helpful. Knowledge of the brain's response to gadolinium would support the diagnosis and indicate the extent of cerebral lesions from the viral infection. MRI venography would also be desirable since venous sinus thrombosis (VST) can be a complication of SARS-CoV-2 infections and VST can manifest with seizures. It would be also interesting to know whether single-photon emission computed tomography (SPECT) examinations or a fluoro-de-oxyglucose positron emission tomography (FDG-PET) were carried out.

We disagree with the diagnosis immune encephalitis in the index patient (Orsini et al., 2021). Since SARS-CoV-2 could be detected in the CSF using PCR, infectious meningo-encephalitis is more likely than immune encephalitis.

Since headache is a common manifestation of SARS-CoV-2 infections, VST, and meningitis, we should know if the index patient has ever complained about headache.

Abbreviations: COVID-19, coronavirus disease-19; CSF, cerebrospinal fluid; EEG, electroencephalography; MRI, magnetic resonance imaging; SARS-CoV-2, severe, acute respiratory syndrome coronavirus-2; SPECT, single-photon emission computed tomography; VST, venous sinus thrombosis.

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Neuropsychiatric complications of SARS-CoV-2 infections include not only depression, anxiety, psychosis, suicidal ideation, insomnia, and delirium as mentioned in the introduction (Orsini et al., 2021) but also isolated hallucinations (Pleszkó et al., 2021), akinetic mutism (Fusunyan et al., 2021), autism spectrum disorder (Martínez-González et al., 2021), and eating disorders (Tavolacci et al., 2021).

Overall, the interesting study has limitations that call the results and their interpretation into question. Addressing these objections would strengthen the conclusions.

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Informed consent

Was obtained.

The study was approved by the institutional review board.

Declaration of competing interest

Both authors declare no conflicts of interest.

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