COVID-19 induced encephalopathy – a Case Report

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Case Report

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Abstract

Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), also called coronavirus disease 2019 (COVID-19), first appeared in December 2019 in Wuhan, China. It has rapidly spread to multiple countries and has become a global health problem. The effects of COVID-19 on the CNS (Central Nervous System) are reported in low but increasing numbers. We report a case of COVID-19-induced encephalopathy with a biphasic clinical presentation only after a neurologically silent period.

Case Presentation

A 42 year old male Caucasian patient was admitted to the local department of neurology with sudden onset of cognitive impairment, hyperactivity, mood changes and disorientation. There were no signs of infection. A history of two depressive episodes (2012, 2016) was reported. Sole medications were ibuprofen and metamizol on demand. The Patient had no history of drug or alcohol abuse and no familiar psychiatric disorders. Four weeks earlier he came into close contact with a symptomatic person, who tested positive in SARS-CoV-2 PCR (polymerase chain reaction). Two weeks prior to admission the patient suffered from fever (39°C), tachycardia, night sweats and insomnia. The COVID testing at that time was negative. On admission no pathological laboratory results were found. Aside from a bilateral unspecified retinal calcification, the CT (computed tomography) scan was insignificant. The CSF (Cerebrospinal fluid) showed mild elevation of protein and glucose levels, normal cell count and lactate. All virus PCRs (VZV (varicella-zoster virus), HSV (Herpes simplex virus), CMV (Cytomegalovirus), Enterovirus, Parechovirus), as well as SARS-CoV-2 PCR, and neuronal, antiganglioside and paraneoplastic antibodies were negative. Drug screening, vasculitis screening, HIV (human immunodeficiency viruses)-, hepatitis- and syphilis serology were negative. Neither Cranial MRI (Magnetic resonance imaging) nor two EEGs (Electroencephalography) showed pathological signs. Oxygen saturation remained constantly normal. On the 3rd day the patient developed agitation, auditory hallucinations combined with selective mutism, formal thought disorder, derailment, echolalia and dyslalia. Consequently he was referred to the psychiatry ward. As he additionally showed slightly elevated body temperature (37.7°C) a further swab was performed, which showed a positive result in SARS-CoV-2 PCR. Serum COV19 IgM (Immunoglobulin M) and IgG (Immunoglobulin G) Antibodies were also positive. With a medication of haloperidol (2mg/day) and quetiapine (50mg/day) the mental status improved significantly within days. The patient was discharged after 15 days. The effects of COVID-19 on the CNS are reported in low but increasing numbers. So far, meningeal signs with SARS-CoV-2-positive spinal fluid, brain stem involvement, corticospinal tract signs and delirium along with febrile episodes have been observed (Helms et al. 2020; Li et al. 2020; Mao et al. 2020; Moriguchi et al., 2020). Peripheral nerve involvement with an interval of 5-10 days after infection has also been found (Toscano et al. 2020; Zhao et al. 2020). To date however, no isolated psychotic manifestations have been reported. This case depicts an encephalopathic CNS (central nervous system) affection with a biphasic clinical presentation only after a neurologically silent

period, without any intensive care or respiratory distress situation. Delay in COVID-19 confirmation is not uncommon and contributes to the problems in clinical case identification.

Declarations

Aknowledgements: None.

Conflict of Interest: None.

The patient provided informed consent to participate and publish this case report.

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