Guillain-Barré syndrome associated with SARS-CoV-2 infection

COVID-19 is an infectious disease caused by a novel coronavirus, SARS-CoV-2. The virus was first detected in Wuhan, China, in December 2019, and subsequently spread across the world. There is extensive evidence that SARS-CoV-2 infection causes respiratory alterations; however, the associated neurological manifestations are less well-known. We present a case of Guillain-Barré syndrome (GBS) associated with COVID-19.

Our patient is a 43-year-old man who consulted due to symmetrical weakness involving all 4 limbs; weakness progressively increased in severity, leading to inability to walk. He also presented sensory alterations in distal regions of all 4 limbs. Ten days previously he had experienced a self-limited episode of diarrhoea, followed by symptoms of upper respiratory tract infection.

The neurological examination revealed weakness in all 4 limbs, with 3/5 muscle strength proximally and 4/5 distally, and global areflexia. Chest radiography revealed alterations suggestive of incipient pneumonia secondary to COVID-19 (Fig. 1). The PCR test for SARS-CoV-2 returned positive results. An EMG/nerve conduction study revealed increased distal motor latency and decreased sensory nerve conduction velocity in the nerves evaluated, and increased minimal F-wave latency in the right L5 and S1 spinal nerve roots; these findings are suggestive of demyelinating polyradiculoneuropathy and compatible with a diagnosis of GBS.

During hospitalisation, the patient was assessed by the pulmonology and neurology departments. He received intravenous immunoglobulins for 5 days plus protocolised treatment for COVID-19: hydroxychloroquine sulfate, antiretroviral drugs (lopinavir and ritonavir), antibiotics (amoxicillin), corticosteroids, and low-flow oxygen therapy. Motor function worsened within 2 days of admission, with the patient developing bilateral facial palsy and dysphagia. Subsequently, neurological and respiratory symptoms progressed favourably. Although SARS-CoV-2 infection is likely to have caused GBS in our patient, we should not rule out the possibility that co-presence of GBS and SARS-CoV-2 infection may be coincidental. The association between COVID-19 and GBS has not been established, although recent evidence suggest that the virus may be involved in the aetiopathogenesis of GBS.

Future studies should address the neurological manifestations of SARS-CoV-2 infection.

References

Figure 1. Chest radiography (posteroanterior view) revealing ground-glass opacity in the right middle lobe; in the current epidemiological situation, these findings suggest incipient pneumonia secondary to SARS-CoV-2 infection.