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Diagnosing SARS-CoV-2 Related Polyradiculitis Requires Examination of the Cerebrospinal Fluid

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LETTER TO THE EDITOR

We read with interest the article by Nathegian *et al*. on an 11 years-old male with SARS-CoV-2 associated Guillain-Barre syndrome (GBS), subtype acute, motor, axonal neuropathy (AMAN), starting 10 days after gastrointestinal infection [Nateghian, A. *et al*., 2023]. The patient presented initially with ascending quadruparesis without involvement of facial or respiratory muscles and without sensory or autonomic involvement [Nateghian, A. *et al*., 2023]. He benefited significantly from intravenous immunoglobulins (IVIGs) [Nateghian, A. *et al*., 2023]. The study is excellent but has limitations that should be discussed.

A limitation of the study is that no lumbar puncture was performed. For diagnosing GBS according to the Brighton criteria, it is recommended to demonstrate dissociation cyto-albuminique [Mateen, F. J. *et al*., 2011]. Cerebro-spinal fluid (CSF) examination is also useful to rule out alternative causes of quadriparesis, particularly infections, including SARS-CoV-2, and to document the immunological CSF reaction. GBS can be associated with elevation of CSF cytokines, chemokines, 14-3-3, intrathecal immunoglobulins, neopterin, neurofilament light chain, tau, Aβ1-42, and glial factors [Gigli, G. L. *et al*., 2020; Chaumont, H. *et al*., 2023].

A second limitation is that no long-term follow-up data were provided. We should know whether the child recovered completely or incompletely on the long-term follow-up and whether or not there was ever a relapse of GBS after IVIGs.

A third limitation is that the cause of syringomyelia was not clarified. We should know if it was congenital, if there was a birth trauma, a forceps birth, or spinal or head trauma during infancy or childhood. We should know whether there was a Chiari malformation. Since syringomyelia can be associated with neuropathy [Mercan, M. *et al*., 2018], it would be interesting to know whether there was any evidence for pre-existing neuropathy prior to onset of SARS-CoV-2. Patients with pre-existing neuropathy may more commonly acquire SARS-CoV-2 associated peripheral nervous system complications than those without.

A fourth limitation of the study is that no reference limits were provided. Without knowing reference limits applied, it is difficult to assess what is normal or abnormal.

We disagree with the notion that in the introduction that GBS is due to infection of the nervous system [Nateghian, A. *et al*., 2023]. GBS is an immunological disorder and presumably due to the immune response against the SARS-CoV-2 virus or other infectious agents.

Overall, the interesting study has limitations that put the results and their interpretation into perspective. Addressing these issues would strengthen the conclusions and could improve the status of the study. The diagnosis of SARS-CoV-2 related GBS should not only rely on the clinical presentation, nerve conduction studies, MRI imaging, and response to treatment, but also on CSF examinations.

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