

Before an isolated unilateral trochlear nerve palsy is attributed to an asymptomatic SARS-CoV-2 infection, alternative causes must be ruled out

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Letter to the Editor

We were interested to read the article by Kiarudi et al. about a 10-year-old, previously healthy boy who presented with isolated, unilateral paralysis of the fourth cranial nerve on the left side, which was attributed to SARS-CoV-2 infection (1). Without specific treatment, but only with symptomatic therapy, the paralysis of the fourth cranial nerve remained unchanged at the one-year follow-up (1). The study is impressive, but some points should be discussed.

The first point is that CSF examinations were not performed in the index patient (1). Since cerebral imaging was inconclusive, it could have been helpful to rule out isolated radiculitis of the left fourth cranial nerve. Since isolated cranial nerve palsy can be a subtype of Guillain-Barre syndrome (GBS) and GBS can be a complication of SARS-CoV-2 infection (2), it would have been interesting to know whether the patient had elevated CSF proteins without pleocytosis, whether SARS-CoV-2 was present in the CSF, and whether cytokines, chemokines, glial markers, tau, neurofilament, or 14-3-3 were upregulated in the CSF. It would also have been useful to perform a viral panel (especially for herpes zoster virus) to assess whether viruses other than SARS-CoV-2 were present in the CSF. The argument that the patient had no neurological symptoms is incorrect since he had trochlear palsy.

The second point is that cerebral imaging was performed without contrast (1). To assess whether the proximal portion of the left trochlear nerve was affected, gadolinium administration would have been useful. In radiculitis of the cranial nerves associated with SARS-CoV-2 infection, enhancement of the

cranial nerve roots has been reported (3). An MRI without contrast agent may miss thickening and enhancement of the trochlear nerve roots.

The third issue is that the patient did not undergo magnetic resonance angiography (MRA) or digital subtraction angiography (DSA) to rule out an aneurysm or an arterio-venous malformation either intracranially or intraorbitally. MRA or DSA could also have been useful to rule out vasculitis.

The fourth issue is that other alternative causes for the fourth cranial nerve palsy were not adequately ruled out (1). There is no mention of whether the HbA1c level was normal or not and whether vasculitis was adequately ruled out. Another rare cause of isolated fourth cranial nerve palsy could be increased intracranial pressure. Was there any evidence of papilledema on funduscopy? Was the individual or family history positive for tuberculosis? Fourth cranial nerve palsy has also been reported in association with anti-contactin-1 IgG4 nodopathy (4), 18q22.2q23 deletion (5) ary, this interesting study has limitations that put the results and their interpretation into perspective. Addressing these limitations could strengthen the conclusions and support the results of the study. Before attributing an isolated unilateral trochlear nerve palsy to an asymptomatic SARS-CoV-2 infection, alternative causes must be carefully excluded

Availability of Data and Material

All data are available from the corresponding author

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Acknowledgement

None

Author Contribution

JF was responsible for the design and conception, discussed available data with coauthors, wrote the first draft, and gave final approval.

Conflict of Interest

The author declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential.

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