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Sensory Disturbances with Myalgia after a SARS-CoV-2 Vaccination Require Comprehensive Clarification

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LETTER TO THE EDITOR

We read with interest Lopez-Cariches *et al*'s article about a previously healthy 65 year-old female who developed numbness in the mouth and feet two weeks after receiving the third dose of the Moderna vaccine [López-Carriches, C. *et al*., 2023]. The numbness then spread to the back and both upper limbs [López-Carriches, C. *et al*., 2023]. In addition, she reported myalgias of the axial and lower limb muscles [López-Carriches, C. *et al*., 2023]. Axonal sensory neuropathy was diagnosed upon clinical examination, blood tests, nerve conduction studies, and spinal MRI [López-Carriches, C. *et al*., 2023]. No treatment was given. Incomplete recovery was reported at the two months follow-up [López-Carriches, C. *et al*., 2023]. The study is impressive, but some points should be discussed.

We disagree with the interpretation of the nerve conduction studies as pure sensory neuropathy [López-Carriches, C. *et al*., 2023]. Because the distal latency of the right median nerve was slightly prolonged, motor fibres were also impaired. Prolonged distal latency with normal nerve conduction velocity could be due to either carpal tunnel syndrome or a proximal lesion of the motor fibres that make up the median nerve. Carpal tunnel syndrome may have been an old, subclinical problem unrelated to the vaccination, but it is also conceivable that it had a causal connection to the Moderna vaccination. Another argument for impairment of motor fibres could be myalgias of the axial and lower limb muscles.

A second limitation of the study is that the patient did not undergo cerebrospinal fluid (CSF) analysis. The clinical presentation and NCS findings could also be interpreted as Guillain-Barre syndrome (GBS) with predominant sensory fibres impairment and fifth cranial nerve involvement, as previously reported [Germano, F . *et al*., 2022]. To assess whether GBS or a viral superinfection of the CNS was present, analysis of the CSF is mandatory. Documentation of GBS would greatly influence the choice of treatment, which would definitively be different from the treatment the index case did not receive.

A second differential diagnoses not considered in the index patient was small fibre neuropathy (SFN). SFN is a common complication of SARS-CoV-2 vaccinations and has been repeatedly reported in vaccinees vaccinated with any brand [Iizuka, T. *et al*., 2023]. The persistence of sensory disturbances even at the two-month follow-up would have justified the patient undergoing a skin biopsy.

A fourth limitation is that cerebral imaging was not performed to determine whether the brain was involved in addition to the peripheral nerves.

A fifth limitation is that the MRI of the spine was performed without contrast medium. Since myelitis is a known complication of SARS-CoV-2 vaccinations [Finsterer, J. *et al*., 2023], it would have been imperative to exclude this further differential diagnosis. The use of contrast medium may also have been helpful in diagnosing radiculitis, as enhancing nerve roots are common in radiculitis of cranial and peripheral nerves [Eid, M. *et al*., 2022].

In summary, the excellent study has limitations that should be addressed before drawing final conclusions. Clarifying the weaknesses would strengthen the conclusions and could improve the study. In patients with neurological complications after a SARS-CoV-2 vaccination, a comprehensive work-up must be initiated so that previously unexpected diagnoses are not overlooked.

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