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Letter to the Editor

Rule out differentials before diagnosing SARS-CoV-2 vaccination related Parsonage-Turner syndrome

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We read with interest the article by Öncel and Coşkun[1] about a 56-year-old male who suffered Parsonage-Turner syndrome (PTS) 24 h after the second Biontech Pfizer vaccine dose. Parsonage-Turner syndrome was diagnosed upon clinical presentation (shoulder pain, weakness, and warmth at injection site), nerve conduction studies (NCSs), needle electromyography, and magnetic resonance imaging (short tau inversion recovery sequence).[1] The patient benefited from acemetacin, physiotherapy, transcutaneous electrical nerve stimulation, shoulder joint range of movement, and rotator cuff muscle strengthening program, leading to a visual analog scale score of 0.[1] The study is appealing but carries limitations.

A first limitation is that Guillain-Barre syndrome (GBS) was not ruled out. Guillain-Barre syndrome can also manifest with pain, and magnetic resonance imaging of nerve roots can show thickening and hyperintensity on short tau inversion recovery sequences and additional enhancement upon application of contrast medium.[2] Guillain-Barre syndrome is usually diagnosed according to the Brighton criteria. To fulfill the level 1 criteria for GBS, cerebrospinal fluid (CSF) investigations are obligatory. However, CSF was not examined in the index patient.[1] In GBS, a CSF examination may not only show albuminocytologic dissociation but also elevated cytokines, chemokines, glial factors, neurofilaments, and 14-3-3 proteins.[3] The case report should have clarified whether GBS was considered and how it was ruled out. Nerve conduction studies presented in Table 1 neither confirm PTS nor do they rule out GBS. According to our reference limits, NCS of the median and ulnar nerve were all within normal limits. Reduced compound muscle action potential amplitude of the axillary and musculocutaneous nerves can also occur in GBS. Furthermore, NCSs of sensory fibers of the median and ulnar nerves were normal.

A second limitation is that no F-wave studies were carried out to assess if F-wave latencies, F-wave amplitude, and F-wave persistence were within normal limits. F-wave studies are well suited to detect and monitor proximal lesions of peripheral nerves. Proximal lesions of peripheral nerves may be also detected upon electrical or magnetic stimulation of cervical nerve roots.

A third limitation is that the patient was diagnosed with PTS triggered by SARS-CoV-2 (severe acute respiratory syndrome coronavirus 2) vaccination but did not receive immunosuppressants. In cases of vaccination-associated PTS, the pathophysiology is suggestive of a cross-reaction between the vaccine antigens and structures of the plexus. Immunological disease in the peripheral nervous system often responds favorably to corticosteroids or intravenous immunoglobulins. The article should have also explained why steroids or intravenous

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immunoglobulins were not applied despite vaccine-triggered PTS.

The last limitation is that diabetes, multifocal motor neuropathy, borreliosis, disc prolapse, hereditary neuralgic amyotrophy due to the SEPT9 variant, tumor infiltration, Herpes zoster infection, subacromial bursitis, and SARS-CoV-2 infection were not appropriately ruled out.

Overall, the interesting study has limitations that call the results and their interpretation into question.

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