Turk J Phys Med Rehab 2023;69(1):130-131
DOI: 10.5606/tftrd.2023.12414
Available online at www.turkishjournalpmr.com

Letter to the Editor

Reply to the Letter to the Editor for "Rule out differentials before diagnosing SARS-CoV-2 vaccination related Parsonage-Turner syndrome"

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Received: January 19, 2023 **Accepted:** January 26, 2023 **Published online:** February 07, 2023

Dear Editor,

We would like to thank you for the opportunity to respond to the issues raised in the letter on "Rule out differentials before diagnosing SARS-CoV-2 vaccination related Parsonage-Turner syndrome." We would also like to thank Professor Josef Finsterer for his interest and contribution to our manuscript.[1] In his letter to the editor, Professor Josef Finsterer expressed his concerns that all other options should be excluded when diagnosing Parsonage-Turner syndrome (PTS) due to the SARS-CoV-2 (severe acute respiratory syndrome coronavirus 2) vaccine. We agree that the diagnosis of PTS should be made after all other possibilities have been excluded. We will be happy to clarify these aspects of our case in this response to the letter.

Parsonage-Turner syndrome is a peripheral neuropathy characterized by sudden-onset, severe upper arm pain followed by muscle weakness.[2] The most commonly affected area in PTS is the upper trunk of the brachial plexus, and paresis most frequently develops in the shoulder girdle muscle.[3] Since there is no gold standard method for diagnosing PTS (blood test, specific marker, imaging, or electrophysiological test), the diagnosis is made clinically after excluding possible causes. Laboratory tests and imaging methods help to make the diagnosis.

The patient presented in our case was a healthy individual without comorbidities. In his history, there were no medical conditions that could cause shoulder pain and muscle weakness, such as surgery, trauma, allergies, and rheumatological or autoimmune diseases. When the patient's medical history was examined, no history of genetic disease was found in him or his family. He had no history of drug therapy for an obvious clinical issue. Our patient applied to us immediately after vaccination (within 24 h after SARS-CoV-2 vaccination) with sudden onset of pain and muscle weakness in the vaccinated shoulder. This history was found to be remarkable for the diagnosis of PTS, which includes vaccination in its etiology. Infection or malignancy was not considered in the diagnosis of the patient who did not have a history of fever or weight loss, and the patient's laboratory was normal for C-reactive protein, erythrocyte sedimentation rate, and hemogram. As mentioned in our article, brachial plexus magnetic resonance imaging (MRI) and electromyography findings supported the diagnosis of left upper brachial plexopathy. Cervical and shoulder MRI was performed to rule out other pathologies that may cause shoulder pain and muscle weakness. No pathologies such as spinal cord tumor, cervical discopathy, cervical spondylosis, and cervical stenosis were detected in cervical MRI, and pathologies such as rotator cuff tear, subacromial bursitis, and adhesive capsulitis

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Cite this article as:
Öncel A, Coşkun E. *Reply to the Letter to the Editor for* "Rule out differentials before diagnosing SARS-CoV-2 vaccination related Parsonage Turner syndrome". Turk J Phys Med Rehab 2023;69(1):130-131. doi: 10.5606/tftrd.2023.12414

were not detected in shoulder MRI. Cervical and shoulder MRI were evaluated as normal.

There are several forms of Guillain-Barré syndrome (GBS), and the initial signs and symptoms are variable among patients. The onset of the disease is usually within two weeks, and it has been reported that alternative diagnoses should be considered in very early or late-onset cases.[4] There are studies reporting that GBS can be seen after a SARS-CoV-2 vaccination.[5,6] However, the sudden onset of unsymmetrical (unilateral) muscle weakness in the shoulder, involvement of the proximal region rather than the distal extremity, and motor deficit without sensory impairment in our case led us to PTS instead of a typical GBS. A cerebrospinal fluid examination was not performed in the patient whose GBS was not considered in the preliminary diagnosis.

We consider the fact that an F-wave study was not performed in our patient's electromyography as a limitation of our study. However, it is known that F-wave studies are useful in detecting proximal lesions of peripheral nerves, while their sensitivity is low in predicting radiculopathy. In F-wave studies, because the recorded muscles are innervated by multiple roots and not all of a particular root or axon is affected, conduction through normal fibers may occur.[7]

Although there is no specific treatment for PTS, corticosteroids, intravenous immunoglobulins, nonsteroidal anti-inflammatory drugs (NSAIDs), opioids, and physiotherapy programs can be applied in the treatment. In the acute phase of PTS, many patients have a numerical rating scale score ≥7, and combination treatments including NSAIDs have been found to be most effective in pain management.[8,9] In our case, an NSAID was given for severe shoulder pain, while a physiotherapy program was applied for muscle weakness in the shoulder, and our patient benefited from these treatments.

Parsonage-Turner syndrome is thought to be caused by a wide range of etiologies, such as autoimmune, genetic, infectious, environmental, and biomechanical factors.[10] As Professor Finsterer emphasizes, all differences should be ruled out when diagnosing PTS. We also agree with this view, and we believe that detailed studies should be done to rule out all possibilities when diagnosing PTS.

Data Sharing Statement: The data that support the findings of this study are available from the corresponding author upon reasonable request.

Author Contributions: Concept, resources, materials, data collection and processing, analysis and interpretation, literature search, writing manuscript: A.Ö.; Design, supervision, critical review: E.C.

Conflict of Interest: The authors declared no conflicts of interest with respect to the authorship and/or publication of this article.

Funding: The authors received no financial support for the research and/or authorship of this article.

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