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Letter to the Editor

Foot drop during ICU Management for SARS-CoV-2 related ARDS must be evaluated by a Neurologist

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We read with interest the article by Arora *et al.* [1] about a 46-year-old male with unilateral foot drop, which was attributed to pressure on the deep peroneal nerve due to prone positioning during mechanical ventilation for acute respiratory distress syndrome (ARDS) in the course of acute SARS-CoV-2 infection [1]. The patient was examined by a physiotherapist and fitted with an ankle-foot orthosis brace [1]. The study is impressive but has some limitations.

The major limitation of the study is that alternative causes of unilateral foot drop were not comprehensively considered and discussed. First, the patient had uncontrolled diabetes and ketoacidosis, suggesting that he may have suffered from neurological and non-neurological complications of diabetes. Regarding the unilateral foot drop, it is conceivable that the patient had a previously undiagnosed polyneuropathy that worsened during the infection and treatment. Worsening of polyneuropathy during ICU care is not unusual and could be due to the administration of steroids or anti-SARS-CoV-2 drugs with neurotoxic effects. It is also important to rule out compartment syndrome.

Second, it is conceivable that asymmetric critically ill polyneuropathy developed even though the patient was discharged from the ICU four days after admission. The ICU stay is generally associated with an increased risk of peripheral nerve damage, due to bedding, the polypharmacy and artificial nutrition during mechanical ventilation. Therefore, we should be informed about the medications and their dosages that the patient received during ICU management. Asymmetric critically ill polyneuropathy is not uncommon and may occur in patients with additional risk factors for neuropathy or unilateral anatomical abnormalities.

Third, unilateral foot drop could be due to diabetic plexopathy of the lumbosacral plexus. Diabetes is one of the most common causes of plexopathy. It is conceivable that only certain branches of the plexus were affected, which is why imaging of the plexus and nerve conduction studies of the proximal nerve sections must be performed. It is also conceivable that the plexitis was due to the SARS-CoV-2 infection or due to intoxication by the anti-SARS-CoV-2 medications.

Fourth, prone positioning during mechanical ventilation could also have resulted in a herniated disc, which may be painless, especially in patients with diabetes. It is therefore important that an MRI of the lumbar spine is also performed to rule out a vertebral cause of the foot drop.

Fifth, it is also conceivable that the patient suffered a cerebral or spinal stroke resulting in distal limb weakness. Therefore, cerebral and spinal imaging should be performed if a peripheral cause of foot drop has been sufficiently ruled out.

One limitation is that the results of the further workup using nerve conduction studies and electromyography, which were recommended at ICU discharge and long-term follow-up, were not reported. Another limitation is that the patient was not examined by a neurologist.

In summary, the excellent study has limitations that call the conclusions into question. Addressing these issues would strengthen the conclusions and could improve the status of the study. Patients who experience foot drop during ICU management should undergo thorough evaluation promptly, so as not to miss a potential cause that requires immediate diagnostic or therapeutic response. Before recommendations are made for the management of foot drop, its exact cause must be determined.

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Statement of Ethics: a) The study was approved by the institutional review board. b) Written informed consent was obtained from the patient for publication of the details of their medical case and any accompanying images.

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Compliance with Ethics Guidelines: This article is based on previously conducted studies and does not contain any new studies with human participants or animals performed by any of the authors.

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