

Correspondence



# Letter to the Editor: Finger Extensor Weakness Is Not a Novel Clinical Feature of SARS-CoV-2 Associated Guillain-Barre Syndrome

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► See the article “Finger Drop-Dominant Variant of Guillain-Barre Syndrome in a Patient With COVID-19: A Case Report” in volume 37, number 20, e160.



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**Disclosures**

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Dear Editor,

We read with interest the article by Kang et al.<sup>1</sup> about a 73 years-old female who was diagnosed with Guillain-Barre syndrome (GBS) after having developed quadriparesis with distal predominance in the context of an asymptomatic SARS-CoV-2 infection. The patient profited from intravenous immunoglobulins (IVIGs) with an incomplete recovery at the three months follow-up.<sup>1</sup> The study is attractive but raises concerns that should be discussed.

We disagree with the notion that “predominant finger drop” is a variant of GBS. The patient had quadriplegia with distal and extensor predominance. This is not an unusual presentation of GBS and has been repeatedly reported even in the absence of concomitant proximal limb weakness.<sup>2</sup> Therefore, we disagree with the conclusions that the index case expands the clinical spectrum of GBS.<sup>1</sup>

Development of GBS in the absence of clinical manifestations of the COVID-19 infection is also not unusual. In a systematic review of 220 patient with SARS-CoV-2 associated GBS one patient was SARS-CoV-2 positive but did not manifest clinically. There are also other patients with GBS and asymptomatic SARS-CoV-2 infection.<sup>3</sup>

Missing is the exclusion of multifocal motor neuropathy (MMN) as a differential of GBS. We should be told if nerve conduction studies (NCSs) revealed any conduction blocks.

Missing is a magnetic resonance imaging (MRI) of the spine. Spinal MRI with contrast medium can demonstrate enhancement of the nerve roots therefore confirming the radicular lesion in GBS.<sup>4</sup> It may even have prognostic implications.

SARS-CoV-2 associated GBS is characterised by elevation of CSF cytokines, chemokines or glial factors.<sup>5</sup> We should be told if a particular pattern of cytokines was detected in the index patient's CSF.

It would be interesting to know when the PCR for SARS-CoV-2 became negative again. Is it conceivable that the first test result confirming the presence of SARS-CoV-2 was false positive?

Missing is the previous history and the current medication prior to admission. Was the history positive for previous neuropathy? Did the patient carry any risk factors for polyneuropathy.

Overall, the interesting study has some limitations that call the results and their interpretation into question. Clarifying these weaknesses would strengthen the conclusions and could improve the study. Predominant weakness of the finger extensors does not expand the clinical spectrum of GBS.

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# The Author's Response: Finger Drop-Dominant Variant of Guillain-Barre Syndrome in a Patient With COVID-19: A Case Report

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Dear Sir,


We are grateful for your interest in our case report.<sup>1</sup> We appreciate your comments on our case of Guillain-Barre syndrome (GBS) presenting as marked finger extensor weakness in a patient with coronavirus disease 2019 (COVID-19). You have raised some concerns that deserve discussion, so we would like to respond to them.

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As we described in discussion, Yoon et al.<sup>2</sup> proposed a finger drop variant characterized by prominent finger extensor weakness as a new clinical subtype of GBS. They defined the finger drop variant of GBS as 1) prominent distal weakness of the upper limbs with preferential involvement of the finger or wrist extensors, 2) clinical and electrophysiological features suggestive of diagnosis of acute motor axonal neuropathy (AMAN), and 3) exclusion of other diseases manifested as finger or wrist extensor weakness. The finger drop variant was considered a new subtype of GBS different from classic AMAN on the basis that it has focal and asymmetric involvement in the upper limb, mild disability and a relatively good prognosis. As neurologists living in a country where AMAN is frequent, we accept to classify this as a new clinical variant of AMAN.

Our case meets the criteria of the finger drop variant proposed by Yoon et al.<sup>2</sup> and we want to emphasize that this variant may also occur in COVID-19-associated GBS. We agree to your opinion that GBS can manifest isolated distal motor weakness without proximal weakness. But we think that distal upper limb extensor dominant pattern could be distinct from commonly informed distal dominant GBS type, in terms of relatively spared motor power of lower limb or upper limb flexor muscle groups. Especially in the country where AMAN type GBS occurs frequently, the finger drop sign can be a clinical marker for precise diagnosis of GBS.<sup>3</sup> We agree with your concerns about using this sign as a globally accepted new variant of GBS. Further studies are needed to define whether this variant as generally accepted clinical spectrum of AMAN type GBS, or not.

We wrote in our report, 'In addition to previous studies, our case further expands the clinical spectrum of GBS in patients with COVID-19', which emphasizes that COVID-19 related GBS could also manifest as finger drop dominant AMAN, in addition to previously reported GBS patterns after COVID-19.<sup>1</sup> We are sorry to make this confusion, and concede that expression of 'expands the clinical spectrum of GBS' can be excessive. In the East Asia, considering high incidence of severely affecting AMAN type GBS, it could be meaningful to classify finger drop variant AMAN with favorable prognosis, as a distinguishable clinical feature.

Until now, there have been some reports of GBS in the absence of clinical manifestations of the COVID-19 infection, but we think that it is still uncommon. Many previous studies about GBS after COVID-19 showed less focus on severity of COVID-19 infectious symptoms. As you pointed out, a systematic review of 220 patients with COVID-19 associated GBS, which was published in early COVID-19 pandemic era, reported one case of COVID-19 symptom negative COVID-19 related GBS.<sup>4</sup> Another systematic review that recruited cases from January 2020 to August 2020, reported only two of seventy-three cases presented asymptomatic COVID-19 infection.<sup>5</sup> We agree that there can happen some cases of GBS in asymptomatic COVID-19 patients, but we think that it is hard to determine this finding as unusual or not, at this point. There should be more studies of post- and para-infectious GBS in COVID-19 patients, investigating severity of respiratory symptoms. We appreciate you for your opinion about this important point of view.

We described nerve conduction study results in our report, showing axonal motor polyneuropathy without conduction block or sensory involvement, which suggesting AMAN type GBS.<sup>1</sup> The clinical and electrophysiological characteristics of this case are compatible with AMAN type GBS; progressing motor weakness for 2 weeks, no history of previous motor weakness history, axonal motor neuropathy on nerve conduction study which were improved after 1-year follow-up study. The attack occurred just one-time throughout her life of 73 years, and this clinical course is far from multifocal motor neuropathy (MMN). We agree to your concern about MMN, and we will always consider possibility of MMN in focal distal weakness.

We did not present the result of spine magnetic resonance imaging (MRI), because the results of nerve conduction study, neurological examination and patient's history were enough to diagnose AMAN subtype of GBS. As you suggested, spine MRI can help diagnose GBS and determine its prognosis. Our patient underwent spine MRI, and any root enhancement or cord lesion were not shown.

We totally agree to your opinion about cerebrospinal fluid (CSF) cytokine and chemokine study in COVID-19 related GBS. In this country, chemokine or cytokine testing was not yet clinically commercialized or validated, we did not test cytokine or chemokine of CSF. In the future, studies of CSF cytokines in COVID-19 related GBS will be helpful to understand severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection and related GBS.

In our patient, the result of real-time reverse transcription-polymerase chain reaction (RT-PCR) test for SARS-CoV-2 became negative 3 weeks after the first positive result. Our patient had SARS-CoV-2 RT-PCR study from both nasal swab and sputum test, according to standard method of SARS-CoV-2 RT-PCR test. In addition, our patient had a close contact to a symptomatic confirmed COVID-19 patient, and we thought that false positivity has a low possibility.

We missed her chronic past medical history. She had no past medical or personal history including diabetes mellitus, heavy alcoholism, cancer and chemotherapy. In admission, she showed no risk factors of peripheral polyneuropathy. She had no paresthesia or numbness symptom before this attack. A follow-up study result of recovering axonopathy also supported that she had no chronic polyneuropathy.

In conclusion, we agree with the comment about some concerns of our report. GBS presents various clinical features and electrophysiological findings depending on the region. Determining new clinical variant of any disease should be always cautious, but we thought that recently suggested finger drop variant of AMAN could have value for treating and researching AMAN type GBS. Our case is meaningful that the finger drop variant of GBS may occur after COVID-19 in a country where AMAN is frequent. There should be further studies about clinical subtypes of AMAN and other GBS types, and more detailed clinical factors about COVID-19 and GBS.

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