

INTRODUCTION

- Coronavirus disease 2019 (COVID-19) is predominantly a respiratory system infectious disease that rapidly spread across the globe since the end of 2019.
- While the causal relationship remains uncertain, many cases of post-COVID infection Guillain-Barré Syndrome (GBS), a rare autoimmune disease characterized by bilateral weakness and neuromuscular paralysis, have been reported.

CASE PRESENTATION

- 41-year-old female with no significant past medical history was presented with a 4-day history of acute, progressive bilateral lower extremities weakness with paresthesia involving bilateral hands and feet, 2-months after she had COVID-19 infection
- She was malnourished on presentation associated with 2-months of altered GI motility symptoms.
- Her bulbar sparing neurological symptoms continue to worsen after admission. She has weakness extending to bilateral hands, diminished limb sensation, reflexes and proprioception of bilateral upper and lower extremities.

METHODS

- She received extensive workup to explain her acute progressive bilateral neuromuscular paralysis, including blood test, urine test, cerebrospinal fluid (CSF) test, and Magnetic Resonance Imaging (MRI) of brain, cervical spine, thoracic spine, and lumbar spine.

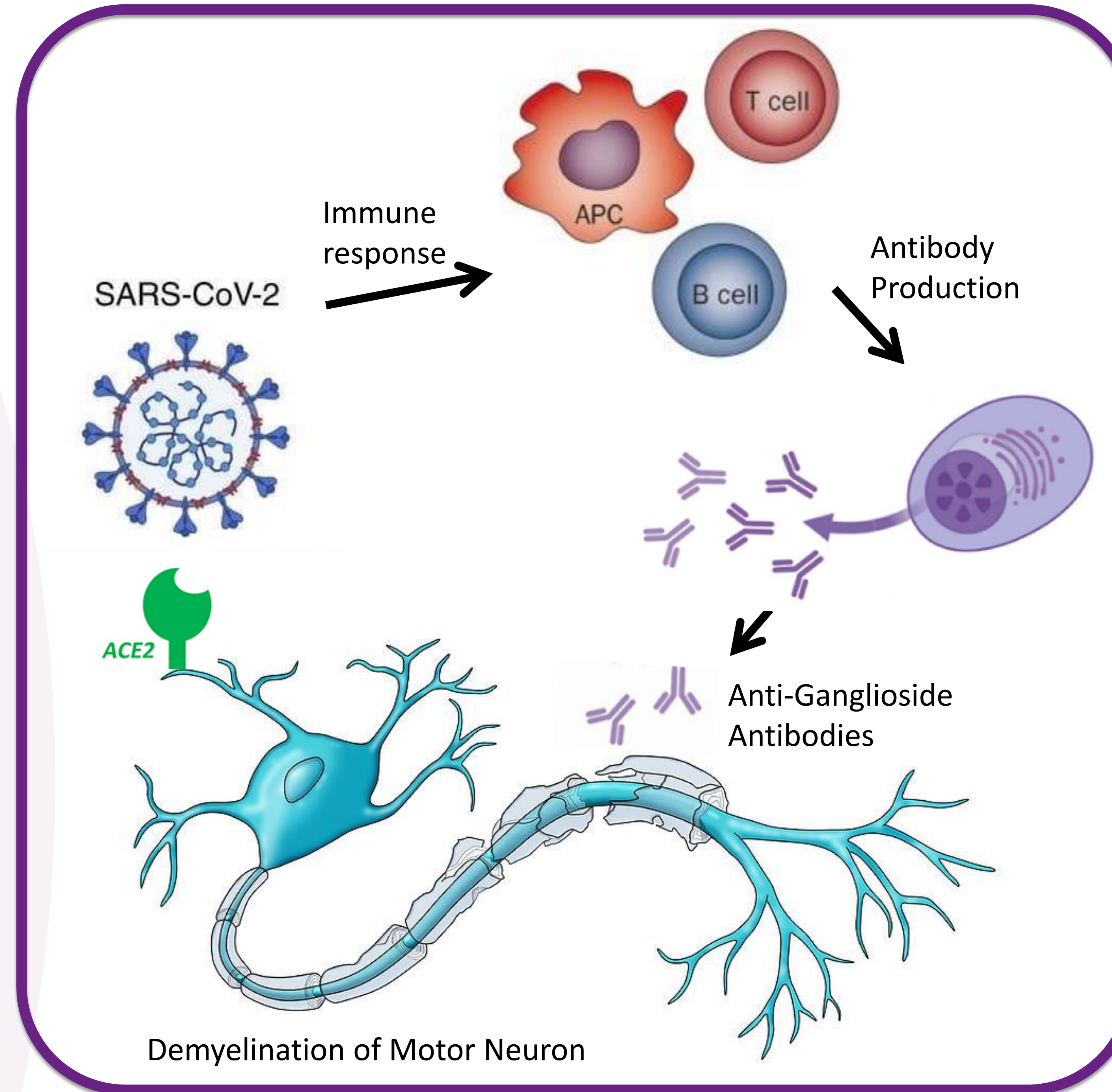


Figure 1

- Proposed mechanism of Guillain-Barré Syndrome after Coronavirus infection due to molecular mimicry. The Coronavirus shares epitopes common on neuron, and the activation of immune system leads to antibodies production attacking both the virus and neuron components.

RESULTS

- Her CSF revealed normal protein and cell count with no cyto-albumin dissociation.
- MRI of brain and entire spine with and without contrast demonstrated no evidence of central nervous system demyelination, enhancement, or stroke.
- Lyme titers, West Nile RNA, rapid plasma reagin (RPR), complete metabolic profile (CMP), thyroid stimulating hormone (TSH), folic acid, vitamin B12, blood ceruloplasmin level, and urine copper were all negative or within normal limits.
- In absence of alternative diagnosis, an acute symmetric ascending neuropathy 2 months post viral infection was highly suggestive of GBS
- Up to half of the GBS cases can have normal CSF protein, particularly if testing were done sooner than one week from symptom onset.
- This patient was treated with 4g/kg IVIG for 5 days, with improvement to her neurological symptoms.
- She received intensive rehabilitation for her residual neurological sequelae, and she continues to suffer from chronic ambulatory dysfunction leading to impaired lymphatic drainage and lower extremity edema.
- She will benefit from osteopathic manipulative techniques focusing on improving on lymphatic drainage, including thoracic pump abdominal diaphragm doming, popliteal fossa myofascial release and pedal pump.

CONCLUSION

- This case adds another evidence to possible association between COVID-19 infection and GBS.
- Additional research is warranted to determine the causal relationship between COVID-19 infection and GBS.

References:

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