Learning to Walk with COVID-19

A Case Report on COVID-19 Associated Guillain-Barre Syndrome

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INTRODUCTION

- Guillain-Barre Syndrome (GBS) is a rare life threatening autoimmune polyneuropathy characterized by distal bilateral lower extremity weakness which ascends progressively to involve the upper limbs
- Pathogenesis involves a recent infectious etiology that triggers an autoimmune response targeting peripheral nerves and spinal roots.
- Recent data has suggested a correlation between COVID-19 and GBS.

CASE PRESENTATION

- 37 year old healthy female with past medical history of COVID-19 infection 4 months prior was admitted for bilateral symmetrical weakness with numbness and tingling sensations in both lower and upper extremities for 2 months
- Her physical exam revealed upper and lower extremity numbness in a glove-stocking pattern, 4/5 upper and lower extremity strength, and absent knee and ankle DTRs.
- CSF analysis showed albuminocytologic dissociation with elevated protein levels of 115 with normal WBC count.
- Additional workup including serum tests of Vitamin B12, folic acid, TSH, A1c, CK, HIV, heavy metals, SPEP were all normal.

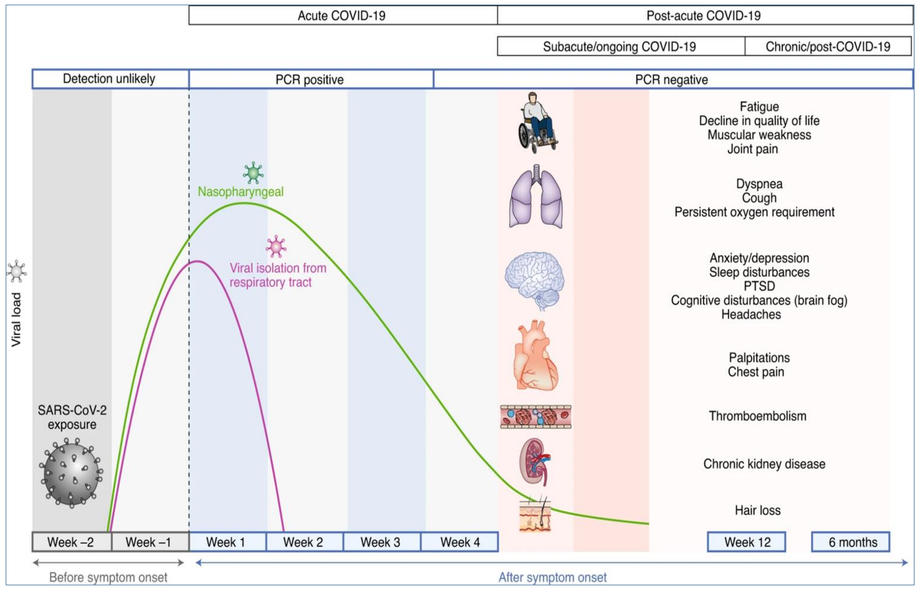

Figure 1: Timeline of COVID-19 infection and possible long term complications. *Nature 2020.*

Diagnostic criteria	1	2	3	4
Bilateral and flaccid weakness of limbs	+	+	+	+/−
Decreased or absent deep tendon reflexes in weak limbs	+	+	+	+/−
Monophasic course and time between onset and nadir 12 h to 28 days	+	+	+	+/−
CSF cell count <50/μl	+	+[a]	−	+/−
CSF protein concentration > normal value	+	+/−[a]	−	+/−
NCS findings consistent with one of the subtypes of GBS	+	+/−	−	+/−
Absence of alternative diagnosis for weakness	+	+	+	+

Table 1: Brighton criteria for diagnosis of GBS

- Patient was diagnosed with GBS and was treated with intravenous immunoglobulins with mild improvement.
- Patient was eventually discharged to inpatient rehabilitation for ongoing physical therapy with outpatient neurology follow up.

DISCUSSION

- COVID-19 preceding GBS has been increasingly more reported.
- Clinical presentation is classically presented with progressive weakness and sensory symptoms in arms and legs, and in severe cases, phrenic nerve involvement causing respiratory failure
- Our patient was diagnosed with GBS clinically based on her sensory deficits, areflexia, and weakness and by the presence of albuminocytologic dissociation present in CSF analysis.
- Average time between COVID-19 and onset of GBS symptoms is between 5-10 days
- Our patient's delay may in part be due to "Post-Acute Sequelae of COVID-19 infection", a phenomenon which is currently poorly understood

CONCLUSION

This case report highlights the importance of considering GBS as an important differential in patients with prior COVID-19 infection who present with sensorimotor symptoms for early diagnosis and treatment.

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