Atypical Guillain-Barré Syndrome (GBS) Associated with COVID-19: A Case Report

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Background

More and more data is emerging about the neurologic sequelae of COVID-19 infection. There is now evidence of wide ranging neurologic complications including headache, seizures, cranial neuropathies, stroke, and demyelinating disorders like GBS[1]. A recent systematic review published in the Journal of Neurological Sciences reported and examined 50 cases of GBS associated with COVID-19 between December 1, 2019 and July 15, 2020[2]. This data has allowed us to learn more about these clinical cases. Notably most cases have been parainfectious rather than postinfectious, males are more often affected, and most cases are AIDP, as opposed to other GBS variants[2]. However, little is as of yet known about optimal treatment of these patients in the acute and postacute settings and its relation to ultimate functional recovery. Acute management in this population has been highly variable, as illustrated in the table below. Thus far, no data comparing rehabilitative measures or compiling functional outcomes is available.

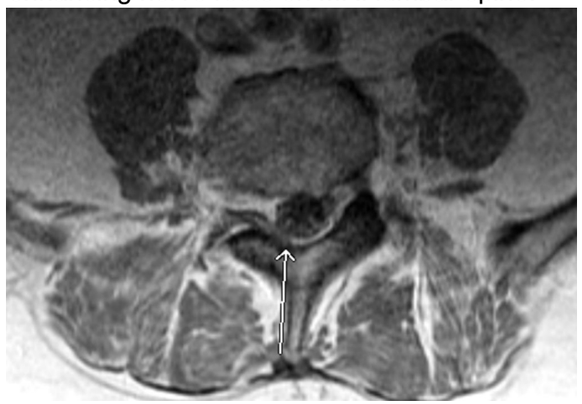
Management	AIDP n (%)	Non-AIDP/ other variants n (%)
IVIG	30 (90.9)	14 (82.4)
Plasmapheresis (PLEX)	6 (18.2)	1 (5.9)
Hydroxychloroquine (HCQ)	9 (52.9)	7 (21.1)
Antivirals	6 (35.3)	7 (21.2)
IL-6 blocker	1 (5.9)	0 (0.0)
Antibiotics	5 (29.4)	3 (9.1)

Clinical Presentation

A 68 year-old male presented to the ED with two days of ascending lower extremity weakness and paresthesias, requiring assistance with mobility from a baseline of independence. He was diagnosed with COVID-19 one week prior, now with only mild cough.

Results

Repeat COVID-19 testing returned positive.
Diagnosis of GBS was made based on areflexia, cytoalbuminologic dissociation on lumbar puncture, and enhancing nerve roots on MRI lumbar spine.



T1 axial post-contrast MRI lumbar spine with mild nerve root enhancement L3-L4 within the thecal sac

Management

Weakness progressed over the next 48 hours, and the decision was made to treat with IVIG. Symptoms reached nadir atypically early, around day six of illness.
PT/OT recommended inpatient rehab (IPR). Acceptance was hindered by his COVID-19 positive status, with each IPR facility requiring two negative tests. He ultimately discharged with home health at a level of minimal assistance for mobility with a walker.

Discussion

This case suggests a link between COVID-19 and GBS. This patient's GBS symptoms developed in a period of convalescence from the virus and responded to IVIG treatment with early improvement. More research is warranted to explore the typical clinical course and recovery of GBS associated with COVID-19.
Further, denying access to IPR due to COVID-19 status prolongs hospital length of stay and may adversely impact patients' functional outcomes. As the incidence of COVID-19 continues to increase this case highlights the need for open discussion around how the rehabilitation community will respond to the neurologic and functional sequelae of the infection.

Conclusion

This case adds to growing evidence of the association between novel coronavirus infection and GBS, and to the virus's potential neurologic sequelae. More research is warranted to explore the typical course and recovery of GBS associated with COVID-19. Open discussions in the rehabilitation community are needed to explore how to balance rehabilitation needs and healthcare utilization with safety considerations in order to provide the appropriate level of care to patients affected by COVID-19.

References

1. Maramattom, B. "Neurological Complications with COVID-19: A Contemporaneous Review". Annals of the Indian Academy of Neurology 23.4 (2020): 468-476.
2. Sriwastava, S. et al. "Guillain Barre Syndrome and its variants as a manifestation of COVID-19: A systematic review of case reports and case series". Journal of Neurological Sciences, 2021-1-15, Vol 420: 117263.