UCLA Health

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Abstract Form

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Project Title:	Guillain-Barre Syndrome post COVID-19 vaccination

Research Category (please check one):

☐	**Original Research**	☒	**Clinical Vignette**	☐	**Quality Improvement**	☐	**Medical Education Innovation**

Abstract

Introduction:
Guillain Barre Syndrome (GBS) is a rare immune-mediated neurological disorder affecting peripheral nerves and nerve roots. GBS presents as acute sensorimotor neuropathy that starts with distal paresthesia that progresses to weakness of legs and arms. It also causes flaccid paralysis. The most known vaccinations reported to cause GBS include meningococcus, polio, influenza, and rabies vaccines. However, an association with the COVID-19 vaccine is yet to be established.

Case Presentation:
This is a 50-year-old man that presented to the ED complaining of generalized weakness and acute loss of ability to ambulate which has been progressing for about a month.

Patient began having left arm and leg weakness, which started in his fingertips of his left upper extremity and soon moved proximally to upper left arm. Symptoms then progressed to right upper and lower arms. Symptoms further continued to progress making the patient bedridden.

All imaging including CT head, cervical spine, and MRI of brain showed no significant findings except a C1/C2 subluxation possibly chronic without significant focal soft tissue swelling. Upon evaluation, patient had significant motor weakness and required maximal assistance for movement. Patient also had flaccidity of muscles associated with weakness with no bulbar weakness. Patient had no difficulty in breathing or with speech. A lumbar tap was performed which showed elevated protein, WBC, and glucose.

Upon further investigation, patient stated that he received his (3rd dose) of the Moderna Vaccine for Covid-19 about a month before the onset of symptoms and felt fine. Two weeks later, he began experiencing subjective fevers, diarrhea, abdominal pain, and fatigue that lasted for a week and then self-resolved. Approximately another two weeks later is when patient began noticing his neurological symptoms.

GBS was suspected at this point and patient was started on Intravenous Immunoglobulin (IVIG). Stool cultures were collected for C.Jejuni which came back negative. Further studies were also sent out such as CSF culture, CSF cocci, CSF West Nile Ab IgM, and Gastrointestinal Pathogen Panel PCR Feces, which all came back negative.

Over the course, patient tolerated the treatment well and endorsed improvement of weakness especially on the right side of his body. Patient was eventually discharged to a rehab center and planned to receive another round of IVIG 0.4 g/kg for 5 days.

Discussion:
Molecular mimicry has been widely accepted pathophysiology behind infections and vaccinations causing GBS. The reported cases of COVID-19 vaccination causing GBS support this theory. However, proving a causal relationship in a molecular level has not been accomplished yet and remains a challenge.

Conclusion:
GBS has several precipitating triggers such more commonly infectious: C. jejuni, cytomegalovirus, M. pneumoniae, Epstien-Barr virus and Zika virus. A rarer trigger are vaccines. More recently, there has been several studies that have linked GBS to COVID-19 vaccine. With COVID-19 cases continuing to persist, and increasing advocacy for vaccination against the disease, GBS should be considered as very rare but possible side effect of the vaccine.