Guillain-Barre following Pfizer vaccine for SARS-COV-2

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Introduction

- Guillain-Barre syndrome (GBS) is an acute or subacute peripheral polyneuropathy associated with acute infections such as Campylobacter jenjuni, Ebstein-Barr virus, Cytomegalovirus, human immunodeficiency virus, and Zika virus.
- Immunizations including influenza and shingles are also known to be associated with GBS.
- Vaccines developed to combat SARS-COV-2 virus also have the potential to cause GBS.

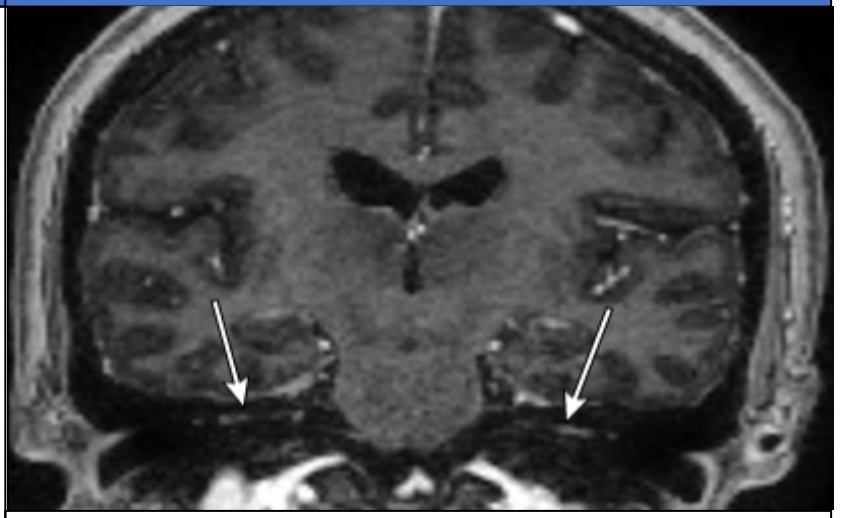
Case Presentation

- A 65-year-old woman with history of ankylosing spondylitis (AS) on adalimumab was admitted to the hospital for ascending bilateral weakness and paresthesia progressing from her feet to her arms. She had received a dose of the Pfizer-BioNTech COVID-19 vaccine approximately three weeks prior while adalimumab was held.
- Exam showed normal mentation, speech, and cranial nerves. She had 1/5 strength in all four extremities, decreased sensation to light touch, and areflexia in her legs.
- Routine labs showed normal CBC, CMP, CRP, ESR.
- Cerebrospinal fluid (CSF) analysis from lumbar puncture showed albuminocytologic dissociation with elevated protein of 174 and normal white blood count of 5. Infectious workup was negative.

Case Presentation

- MRI of the brain showed bilateral facial nerve enhancement. EMG was unrevealing.
- MRI of the brain also showed incidental small subarachnoid hemorrhage (SAH) in the parieto-occipital sulci without cerebral edema or mass effect. Cerebral angiogram was negative for large vessel occlusion, aneurysm or any other vascular malformations. This finding was unlikely to cause her quadriplegia.
- The patient rapidly progressed to acute hypoxic respiratory failure requiring mechanical ventilation within 48 hours.
- Treatment with intravenous immunoglobulin for presumed GBS was started and continued for five days and subsequently with plasma exchange for seven runs.
- During this time, severe dysautonomia occurred with fluctuating blood pressures needing alternating vasopressors and intravenous antihypertensives.
- At the end of week three, her strength in her upper extremity improved mildly. Her autonomic dysregulation resolved and her respiratory drive improved with decreasing need for mechanical ventilation. She was discharged to a long-term acute care hospital for further rehabilitation with tracheostomy and gastrostomy.

Imaging



Coronal brain T1 MRI shows bilateral facial nerve enhancement

Discussion

- GBS is a syndrome in which an immunologic response cross-reacts with peripheral nerve via a mechanism called molecular mimicry.
- Johnson and Johnson vaccine has been associated with approximately 100 cases of GBS.
- No similar signal has been identified with the Pfizer-BioNTech Covid-19 vaccine.
- Clinicians should be cognizant about GBS with new vaccines for Covid-19. The benefits of these vaccines outweigh the potential risks. We support the recommendations from the CDC and the WHO.