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Concurrent Presentation of a Complex Mixed Autoimmune Encephalitis Subsequent to Mycoplasma Pneumoniae Infection: A Case Report and Literature Review

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Abstract

Background

A PUBMED search was conducted using the keywords "Autoimmune encephalitis" OR "Bickerstaff encephalitis" OR "Miller Fisher" OR ("Paraneoplastic encephalitis" AND "Plasma Exchange"). Common trends in age, gender and the average number of sessions of plasmapheresis or plasma exchange therapy were identified in 178 cases between the years 1981 and 2020.

Aim

To report a unique case report and associated literature review of autoimmune encephalitis in a patient following a Mycoplasma pneumonia infection.

Case Description

A 40-year-old female with a history of Hashimoto thyroiditis, polycystic ovarian syndrome, and a lower respiratory infection came into the emergency department with new-onset, progressive neurological symptoms. These included generalized tonic-clonic seizure and worsening respiratory status that required intubation and tracheostomy. Blood cultures returned positive for Mycoplasma pneumonia. MRI brain showed several hypointense soft tissue masses within the posterior occipital scalp region. CSF studies were positive for anti-TPO, anti-GAD65, anti-M2, anti-HLA class I, anti-Ib, anti-IIb/IIIa and anti-SSA (Ro) antibodies. The patient was initially treated with two rounds of IVIG therapy. Once autoimmune encephalitis was suspected, pulse steroid therapy was combined with IVIG treatment. Due to minimal improvement plasma exchange therapy was started, after which the patient's symptoms improved. We report a unique mixed diagnosis case of Anti-GAD65, Bickerstaff brainstem encephalitis, Hashimoto's encephalopathy, and Miller Fisher Syndrome concurrently.

Conclusion

Literature review cases identified were 40.3% male and 59.7% female. With 27.3% <18 years old and 72.7% >19 years old. Age of onset ranged from 1 to 79, with a median age of 34.4 years old. Plasma exchange or plasmapheresis therapy was implemented in 69.7% of the cases for an average number of 6.3 sessions. Our case report aims to provide further evidence to support plasma exchange therapy as an alternate treatment option to IVIG refractory cases of autoimmune encephalitis.

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