Seroconversion in Initial Seronegative NMO IgG and Positive CSF NMO IgG Antibody Neuromyelitis Optica Case

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Introduction

Neuromyelitis Optica (NMO) is a demyelinating disorder which can cause disabling symptoms. Presence of serum NMO IgG plays an important role in its diagnosis.
We are presenting a patient with NMO spectrum disorder (NMOSD) with positive CSF (Cerebrospinal Fluid) NMO IgG antibody. Serum NMO IgG antibody was initially negative and became positive 5 months after diagnosis.

Methods

Retrospective chart review of a patient with NMO.

Case Report

41 y/o woman presented to our hospital with monocular progressive left visual loss and pain on eye movement. Her progressive left visual loss started 2 weeks prior to her initial presentation to the hospital. On examination she has afferent papillary defect in left eye with consensual light reflex present on the left, visual acuity was 20/20 on right eye and only intact to hand movement on the left. The remainder of the cranial nerve examination was normal, with full strength in bilateral upper and lower extremities, normal sensory examination and reflexes 2/4 in bicep, tricep, brachioradialis, knees and ankles with downgoing toes.
A diagnosis of optic neuritis was made and confirmed with MRI (magnetic resonance imaging) orbit with contrast that showed long segment of T2 signal abnormality and abnormal enhancement in the left optic nerve within the intracoronal and canalicular segments, consistent with left optic neuritis. The MRI scan of the brain was normal.

A spinal tap showed opening pressure of 11.5 cm of water, CSF protein of 55, and 41 nucleated cells with 80% lymphocytic predominance, 3 unique oligoclonal bands, 0.63 CSF IgG index and positive CSF NMO IgG. Blood work including ACE levels, ANA and serum NMO IgG antibody was normal. MRI C spine revealed longitudinally extensive transverse myelitis from C2-C5. Patient improved with 1 gr IV methyprednisolone for 5 days. On her follow-up visit, 5 months later, serum NMO IgG AB was repeated and came back positive with 1:1000 titers.

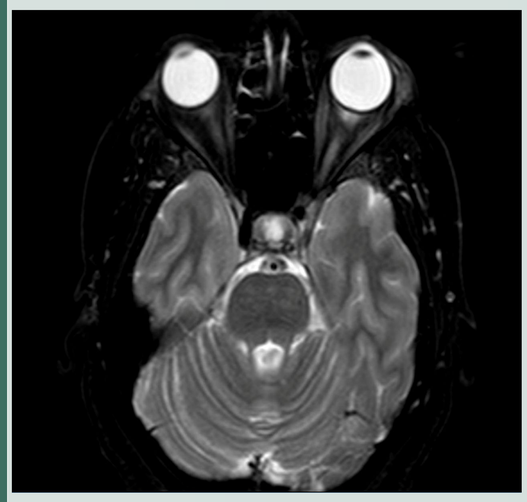

Image 1 : Long segment of T2 signal abnormality and enhancement in the left optic nerve

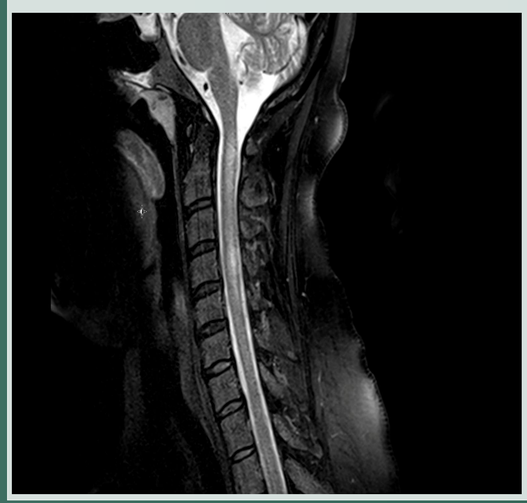

Image 2 : T2 prolongation with expansion and heterogeneous enhancement within the cervical cord from C2-C5.

Six months after her diagnosis, she experienced a relapse consisting of numbness in her right upper extremity and was treated with intravenous steroids. She had another episode of bilateral optic neuritis 8 months after her initial left optic neuritis and was treated with 5 cycles of plasmapheresis with only moderate improvement. Currently she is enrolled in a clinical trial.

Discussion

This case implies the significance of following up with serum NMO IgG in NMO suspected patients. It highlights the significance of CSF NMO IgG AB in seronegative patients with strong clinical suspicion, to make timely diagnosis. This case is in line with previous articles reporting rare cases of positive CSF NMO IgG in seronegative patients with neuromyelitis optica.

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