Upper Respiratory Infection: A Premonition of Neuromyelitis Optica

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Introduction

Neuromyelitis Optica (NMO) is a demyelinating central nervous system astrocytopathy frequently presenting with optic neuritis and transverse myelitis (TM). Worldwide prevalence of NMO ranges from 0.5 to 4.4 cases per 100,000. The disease is three to seven times more common in women and the typical age of onset is 33-46. Transverse myelitis is estimated to affect approximately 1400 individuals each year regardless of gender, race and familial predisposition. The exact cause of transverse myelitis is unknown. Diagnosis requires careful investigation to identify a precise cause. In both NMO and TM, involvement of the brainstem is less common, however, there is a predilection for the dorsal brainstem and hypothalamus. Neurologic manifestations of NMO may include refractory hiccups, nausea and vomiting, and respiratory failure.

Background

A 42 year-old Caucasian man, without any significant past medical history, developed upper respiratory symptoms including a dry cough for 16 days. He was initially treated with levofloxacin and prednisone for a diagnosis of bronchitis. Symptoms worsened to abdominal pain, fever, left eye blurry vision, significant headaches and leukocytosis of 17,920. CT angiography of the head revealed normal vasculature but revealed sinusitis involving the maxillary sinus. The patient had improvement in sensory and motor deficits with steroids. The patient was discharged to Penn State Hershey Rehabilitation Hospital.

Clinical Presentation

Labs; NMO Aquaporin 4-IgG was negative. CSF: nucleated cells 390, glucose 60, protein 118; MS panel in CSF, showed elevated myelin basic protein to 30.2, no oligoclonal bands; IgG synthesis rate was 8.4.

Ophthalmology consult for pain with lateral eye movement, blurry vision, pain with lateral movement and dyschromatopsia. Funduscopic examination showed no evidence of optic neuritis.

The patient was given IV Solu-Medrol 1 g daily for 5 days oral prednisone taper for acute transverse myelitis, with a presumed diagnosis NMO despite negative lab result. The patient had improvement in sensory and motor deficits with steroids. The patient was readmitted with left-eye vision loss. He was found to have a urinary tract infection treated with Cirpofloxacin. He received a second course of IV Solu-Medrol.

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One month later, the patient developed worsening headaches, blurry vision, color changes and difficulty with peripheral vision. He was evaluated by Ophthalmology and was found to have optic neuritis on funduscopic examination. He was admitted and received 5 days of IV steroids. He was started on Rituximab 1000mg, 2 doses given, 2 weeks apart, every 6 months.

After 2 doses of Rituximab, the patient was re-admitted with left-eye vision loss. He was found to have a urinary tract infection treated with Cirpofloxacin. He received a second course of IV Solu-Medrol.

Multidisciplinary Approach for Patient Care

- Avoidance of complications associated with prolonged immobility utilizing enoxaparin injections and sequential compression devices to avoid deep vein thrombosis; repositioning; respiratory therapy including NIF and Vital Capacity measurement; utilizing ceiling lift to assist patient out of bed; daily weight.
- Treatment of bladder dysfunction with antibiotics for urinary tract infection; Foley catheter placement and straight catheterizing of bladder with voiding trials; pharmacotherapy included tamulosin.
- Treatment of gastrointestinal dysfunction including glycerin suppositories; polyethylene glycol; lansoprazole for prevention of gastric ulcers; high protein and high fiber diet.
- Careful consideration of neuropathic pain. Treatment with gabapentin, acetaminophen and ibuprofen; physical and occupational therapy; mobilization out of bed.
- Psychosocial considerations for improvement of quality of life after the diagnosis was made: reassuring talk; monitoring for depression; emotional support through consult to the house Chaplain.

References


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