

West Nile Encephalitis: A Mimic of Neuroleptic Malignant Syndrome

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Background: West Nile encephalitis (WNE) is an infectious disease characterized by fever, altered mentation, and muscle weakness or rigidity. Neuroleptic malignant syndrome (NMS) is characterized by hyperthermia, autonomic dysfunction, muscular rigidity, and altered mentation. NMS is most commonly caused by neuroleptic medications.

Hypothesis: West Nile encephalitis can present similarly to NMS

Methods: A 56-year-old woman with hypertension, diabetes, multiple sclerosis, end-stage renal disease, prior failed pancreas transplant on cyclosporine, and psychiatric disorder on olanzapine presented with a 2-day history of fever, epigastric pain, emesis, and lower extremity weakness. During her hospitalization, fevers continued, mental status worsened, and she developed increasing muscular rigidity. Empiric antibiotics and antivirals were started but initial CSF and MRI studies were unremarkable. Bromocriptine therapy was initiated with improvement of fevers and rigidity. Because her mental status did not improve, repeat EEG was performed. This showed seizure activity and prompted further testing.

Results: The patient's exam on hospital day four showed an unresponsive woman with occasional grimacing. All four extremities were rigid with cogwheeling in the upper extremities. CPK 1,914. The first CSF sample had one nucleated cell, with negative cultures, and PCR did not detect VZV, HSV 1&2, Herpes 6, CMV, EBV, JC, enteroviruses, and West Nile. Initial CT/and MRI demonstrated chronic changes and EEG was nonspecific. Repeat LP demonstrated 15 nucleated cells and elevated protein. Repeat EEG revealed seizure activity and bitemporal foci of wave discharges. Additional studies including autoimmune, paraneoplastic, and receptor antibody panels and infectious disease testing returned normal. Repeat MRI demonstrated T2 enhancing lesions in the bilateral thalami. West Nile Virus serology found elevated IgM antibodies.

Discussion: West Nile Virus is a neurotropic flavivirus that causes a spectrum of disease ranging from a mild viral illness to meningitis, encephalitis, acute flaccid paralysis, and death. Involvement of the basal ganglia can cause either a polio-like muscular weakness and paralysis or parkinsonism and rigidity. WNE is diagnosed by viral PCR testing or CSF serology. The improvement of fevers and rigidity with bromocriptine is novel.

Conclusion: WNE should be considered in the differential of NMS. Muscular rigidity may improve with bromocriptine.