

West Nile Virus encephalitis: An atypical case presentation

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Case Presentation:

A 60-year-old male with a history of hypertension, type 2 diabetes, stroke with left-sided hemiparesis, and epilepsy presented after being found unconscious in his backyard. He could not provide history due to altered mental status, but his brother reported that the patient lived independently. Initially, he was only oriented to person, had a fixed rightward gaze, left hemineglect, increased muscle tone, and generalized tremors. He was hypertensive to 241/102 and febrile at 102.6 F. He was admitted to the intensive care unit for intubation and mechanical ventilation following a rapid deterioration in mental status. A CT scan of his head without contrast ruled out any acute intracranial abnormalities. EEG results showed diffuse background slowing, consistent with widespread cerebral dysfunction and encephalopathy. A lumbar puncture was performed which revealed 528 white blood cells (WBC) with 82% neutrophils and 5% lymphocytes, no red blood cells (RBCs), protein of 165, and glucose of 83. CSF meningoencephalitis infectious studies were pan-negative, which prompted a second lumbar puncture for further evaluation. This subsequent CSF sample showed no RBCs, 84 WBCs with 87% lymphocytes, 5% neutrophils, protein 183, and glucose 46. Extensive autoimmune and paraneoplastic workup was negative. Notably, the patient experienced an unexplained AKI between the two CSF samples, with creatinine levels rising from 1.1 to 3.4 within two days, followed by a subsequent correction over the following two days. Serologic testing eventually confirmed the presence of an acute WNV infection given the presence of WNV IgM antibodies. The patient was subsequently transferred for neurocritical care at another facility.

Discussion:

This is a peculiar case of WNV encephalitis characterized by a biphasic pattern of leukocyte composition in the CSF, noted with a transition from neutrophilic to lymphocytic predominance. These findings underscore the importance of considering WNV encephalitis, even when the initial CSF analysis reveals neutrophilic predominance, a finding typically considered to emanate from a bacterial infection.