Diplopia Secondary To West Nile Virus Meningitis

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Abstract

Cranial nerve involvement has been reported with West Nile Virus infection. We report a case of diplopia secondary to West Nile Virus meningitis.

Introduction

Cranial nerve involvement has been reported with West Nile Virus infection. We report a case of diplopia secondary to West Nile Virus meningitis.

Case Report(s)

A 60-year-old right-handed woman presented with two weeks of gradual onset, progressive holocephalic headache. Three days after headache onset she developed horizontal diplopia, fever, new-onset hypertension, and a fine action tremor of both hands. The diplopia was not present on closing either eye. Examination was normal including inspection of ocular motility, however the diplopia worsened on left gaze and right head tilt. All her symptoms resolved in four days except for fever, which lasted two more days.

Routine serum tests were normal and her sedimentation rate was 23. Magnetic resonance imaging was normal except for a six-millimeter cyst lateral to the right basal ganglia and a three millimeter T2 hyperintensity in the right parietal white matter. The cerebrospinal fluid protein was 45 mg/dl, glucose was 65 mg/dl, there were nine red blood cells and 72 white blood cells, of which 35% were neutrophils and 65% were mononuclear cells. Cultures were negative. Serum testing for the West Nile Virus (WNV) was positive for both IgM and IgG.

Discussion

Knowledge of the neurological manifestations of WNV infection is evolving as clinical experience accumulates. Sejvar et al detailed several different syndromes following WNV infection such as encephalitis, meningitis, poliomyelitis-like acute flaccid paralysis, tremor, myoclonus, and Parkinsonism. There have been a few reports of cranial nerve involvement during infection. Miller and Liang have reported a patient with fever, headache, and diplopia that had positive WNV laboratory testing. Johnston and Chan reported a patient with acute flaccid paralysis who developed bilateral facial weakness and was positive for the WNV. Pepperell et al reported the results of 64 patients with WNV infection of whom the three principal types of neurological manifestations were decreased level of consciousness, brainstem and cerebellar signs, and neuromuscular weakness; they list eight patients with “diplopia or ophthalmoplegia.” Several other cases have been described with ocular motor palsies in association with active WNS infection. Sampson and Armbrustmacher reported the autopsy results of four patients with WNV, two of whom had endoneural mononuclear cell inflammation in the cranial nerve roots.

Conclusion

This case adds evidence that infection with the WNV can present clinically with disturbance of ocular motility causing diplopia.

Abbreviations(s)

West Nile Virus (WNV)

References

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