

ABSTRACT

Setting: Tertiary care hospital and rehabilitation facility. **Patient:** 52 year old man with tetraplegia from West Nile Virus (WNV). **Case Description:** A man from New Jersey with a remote history of Hodgkin's Lymphoma presented with myalgias, low grade fever, decreased urine output, neck pain, tremors, and ascending paralysis. Examination revealed flaccid paralysis of the upper and lower extremity with no pinprick sensation below the level of T4. Cerebral spinal fluid was found to be positive for WNV. An MRI performed 10 days after onset of symptoms showed hyperintense signal of the distal thoracic cord and conus medullaris with new hemorrhage. **Assessment/Results:** His acute hospital and rehabilitation course were notable for multiple respiratory infections, pulmonary embolism, intractable dysphagia, and skin breakdown. EMG showed extensive denervation of the limbs. Compound motor action potentials were small or absent, and sensory nerve action potentials were relatively preserved. **Discussion:** West Nile Virus (WNV) is an established cause of weakness involving loss of anterior horn cells due to a process similar to that seen in poliomyelitis. However, its role in more diffuse injuries to the spinal cord is less well defined. This is only the second case report of WNV associated Spinal Cord Injury (SCI). A high index of suspicion is necessary in endemic areas of WNV to prevent misdiagnosis and subjecting patients to potentially harmful erroneous treatments. Our case confirms the emerging belief that paralysis from WNV portends a very poor prognosis. **Conclusion:** WNV associated SCI must be included in the differential of tetraplegia, idiopathic transverse myelitis, Guillain-Barre Syndrome, spinal cord edema and spinal cord hemorrhage.

CASE REPORT

- 8/14/07: **HP:** A 52 year old truck driver from New Jersey presents with groin and neck pain, ascending paralysis, loss of sensation, inability to walk, incontinence of bowel and bladder, generalized pain and fever to 101.9 along with decreased urine output.
- Past Medical History:** Hodgkins Lymphoma s/p radiation therapy 20 years prior and septic arthritis with osteomyelitis of the left knee
- Physical Examination:** Delirious man with clear lungs, tachycardia, soft abdomen, oriented x 3,
- MMT: 0/5 motor exam in upper and lower extremity with 0 DTR's throughout. Pinprick sensation absent below T4. Plantars were non motile
- Laboratory evaluation:** WBC 11, LP positive for WNV.
- MRI:** increased signal in the cervical cord (FIGURE), 2 enhancing foci of the mid thoracic spine
- 8/23/08: Follow up MRI shows abnormal hyperintense signal changes of the distal thoracic cord/conus medullaris resulting in swelling of the cord substance
- 8/24/08: Trache and 3 day course of plasmapheresis with no significant improvement
- 11/27/07: Admitted to rehabilitation s/p PE, fungemia, HIT, and PEG placement with no sensation below T11, no LE strength with severe sacral wound. Reflexes returned. Increased tone in RUE. EMG showed extensive denervation of the limbs. Compound motor action potentials were small or absent, and sensory nerve action potentials were relatively preserved.
- 11/28/08-2/7/08: Rehabilitation course complicated by severe dysphagia, pneumonia, severe sacral wound s/p debridement,
- 2/7/08: MMT: 0/5 LUE, 4/5 R C5-C7, 3/5 C8-T1
- 6/21/08: MMT: 0/5 LUE, 5/5 R C5-C7, 4/5 C8-T1
- 9/5/08: Max A for bed mobility, Dep for transfers, mod I with power wheelchair mobility, Max A for bathing and dependent for toileting.
- 9/6/08: Discharged to home with his family

MRI



MRI showing diffuse abnormal increased signal intensity in the cervical cord

DISCUSSION

- West Nile Virus (WNV) has been described as a paralytic illness with an overlapping spectrum of meningitis, encephalitis, and myeloradiculitis in the CNS
- It is most often a segmental or flaccid paralysis without sensory signs
- In this case, a complete Spinal Cord Injury occurred due to spinal cord edema and hemorrhage
- Recognition that WNV can cause spinal cord injury as well as pure motor paralysis (as in poliomyelitis) is important so that the proper diagnosis can be made in areas where WNV is endemic
- WNV-associated tetraplegia may portend a poor prognosis
- When a patient is diagnosed with WNV associated SCI, be aware of the possibility of severe respiratory complications and skin breakdown

CONCLUSION

- WNV associated SCI must be included in the differential of tetraplegia, idiopathic transverse myelitis, Guillain-Barre Syndrome, spinal cord edema and spinal cord hemorrhage.