

Six cases of neurological Lyme disease

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Bannwarth syndrome is characterized by painful radiculopathy, neuropathy, varying degrees of motor weakness and facial nerve palsy, and cerebrospinal fluid (CSF) lymphocytic pleocytosis. [Five patients presented with peripheral nervous system involvement \(primarily axonal in nature\), which is consistent with BWS, writes Shah and colleagues.](#) Three of the cases of neurological Lyme disease are discussed below.

61-year-old male

A 61-year-old male, who had a history of daily exposure to ticks, presented with “progressive back pain, upper torso and extremity paresthesias, right-sided facial droop, and blurry vision in the right eye,” writes Shah. Four weeks prior, he was treated for an EM rash with 5 days of doxycycline, given twice daily.

Test results indicated positive IgM and IgG antibodies to *B. burgdorferi* and he was diagnosed with neurologic Lyme disease (also known as Lyme neuroborreliosis) and BWS. According to Shah, “the patient demonstrated significant neurologic improvement following 4 weeks of intravenous (IV) ceftriaxone.”

62-year-old female

A 62-year-old female presented with subacute onset of lower extremity weakness. This progressed over a 3-week period to flaccid paralysis, writes Shah. The woman also complained of radiating low back and abdominal pain with associated numbness.

Tests confirmed the diagnosis of Bannwarth syndrome and neurologic Lyme disease. “A magnetic resonance image (MRI) of her spine showed diffuse inflammation of the cauda equine,” writes Shah. A pleocytosis by spinal tap and a positive real-time polymerase chain reaction (RT-PCR) assay confirmed the diagnosis.

After receiving a 4-week course of IV ceftriaxone, the woman reported that her mobility had improved. Although she still required extensive assistance for 2 months post-treatment, the authors explain.

29-year-old male

In June 2017, a 29-year-old male developed fever, myalgias, chills, headache, and fatigue. He also reported a transient erythematous (or EM) rash on his trunk. Two weeks later, he developed “right foot drop, Trendeleberg gait, lower extremity radiculopathy, and painful L5-S1 paresthesias,” explains Shah. And over the next 10 weeks, the man lost 15 pounds.

After refusing a spinal tap, the man was diagnosed based on his clinical presentation and positive Lyme

disease test results. After two weeks of treatment with IV ceftriaxone, he reported having no symptoms. (It is not clear how often Bannworth syndrome occurs in actual practice with or without a confirmatory spinal tap.)

All 5 patients presented with upper or lower extremity radiculopathy and/or paresthesias. There were, however, several other findings. “The more widespread peripheral neuropathy observed for the remaining 3 patients in this series is somewhat atypical,” writes Shah, as “2 patients developed visual disturbances and nerve root enhancement in the cauda equina or lumbar spine, and 1 presented with Lyme disease-associated facial nerve palsy.”

The authors recommend, “The constellation of neurological symptoms, particularly when associated with a recent or suspected tick bite in a [Lyme disease]-endemic region, should prompt clinical evaluation for LNB [neurologic Lyme disease] and assessment for BWS [Bannworth syndrome] as this syndrome may be more common than previously presumed in North America.”

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References:

1. Shah A, O'Horo JC, Wilson JW, Granger D, Theel ES. An Unusual Cluster of Neuroinvasive Lyme Disease Cases Presenting With Bannworth Syndrome in the Midwest United States. *Open Forum Infect Dis*. 2018;5(1):ofx276.

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