

Femoral neuropathy and Lyme disease

Wednesday, October 09, 2019

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A case report by Lazaro and Butt, [published in the *International Medical Case Reports Journal*](#), describes a 67-year-old patient with Lyme disease and femoral neuropathy.¹ This is believed to be the first reported case of isolated femoral neuropathy triggered by Lyme disease.

The patient, who lived in central New York, a region endemic for Lyme disease, developed a large erythema migrans (EM or bull's-eye) rash on his chest, which lasted for 3 weeks, along with swelling of his left knee.

An IgG Western blot test was positive, and he was treated with a 4-week course of doxycycline.

However, **“Shortly after the completion of the doxycycline therapy, this patient began complaining of gait difficulties and frequent falls, as well as intermittent painful cramps in his right thigh,”** writes Lazaro.

An electromyography (EMG) test, which measures muscle response or electrical activity when a nerve muscle is stimulated, indicated the patient had a femoral neuropathy.

Testing performed at IGeneX Laboratories was negative for tick-borne co-infections. And, other causes of femoral neuropathy, including diabetes, trauma, malignancy, and retroperitoneal hemorrhage, were excluded.

“A year after the onset of the disease, and following an extensive course of physical therapy, this patient was able to return to his full-time work as an attendant in a local store,” writes Lazaro.

“We firmly believe that the femoral neuropathy and Lyme disease seen in this patient were causally related,” the authors conclude.

Furthermore, this patient's femoral neuropathy could have developed into a multifocal neuropathy, which involves damage to 2 or more different nerve areas, if the antibiotic treatment had been delayed.

“... if not for a timely institution of antimicrobial therapy, [the femoral neuropathy] might have evolved into a more overt or disseminated infectious or parainfectious process, affecting both the peripheral and central nervous systems,” writes Lazaro.

The authors' findings suggest that femoral neuropathy is “analogous to facial nerve palsy as a presenting symptom of Lyme disease without the overt involvement of other cranial or peripheral

nerves.”

Peripheral neuromuscular involvement has been described for years. However, the actual mechanism of the neural injury is unclear.

The list of peripheral neuromuscular segments affected in Lyme disease has grown to include the nerve cell bodies and their axons, all of the cranial nerves except the olfactory nerve, the nerve roots, the brachial and lumbosacral plexuses, and the peripheral nerves, either in isolation or as part of a multiple or diffuse neuropathic process.²⁻³ #LymeConversations

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References:

1. Lazaro RP, Butt K. Femoral mononeuropathy in Lyme disease: a case report. *Int Med Case Rep J*. 31 July 2019, Pages 243-247.
2. Halperin JJ. Lyme disease and the peripheral nervous system. *Muscle Nerve*. 2003;28:133–147.
3. Logigian EL. Peripheral nervous system Lyme borreliosis. *Semin Neurol*. 1997;17:25–29.

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