

Antibiotic treatment points to cause: Lyme disease

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by Daniel J. Cameron, MD MPH

The article, [Hemifacial spasm from Lyme disease: Antibiotic treatment points to cause](#), examines the case of a 44-year-old patient who was diagnosed with Lyme disease as a result of her rapid improvement following antimicrobial therapy.

"Antibiotic administration for diagnostic purposes is not a recommended medical practice, of course, but the coincidence of antibiotic treatment and HFS improvement provided the impetus to pursue rigorous testing for Lyme disease," writes LeWitt.

The woman, with no prior neurological problems, began experiencing facial twitches. The spasms interfered with speech, eating, and the ability to keep her left eye open. An Elisa test for Lyme disease was negative, and she was eventually diagnosed with Hemifacial spasm (HFS).

"Hemifacial spasm (HFS) is a relatively common neuromuscular disorder characterized by spontaneous and irregular involuntary spasms of muscles innervated by the seventh cranial nerve," states LeWitt.

She remained symptomatic for 5 years and elected to undergo surgical exploration, which "revealed neither contact between the facial nerve and arterial structures, nor any other pathology."

An oral cephalosporin was prescribed for 10 days for a wound infection following surgical exploration of the HFS. "During this treatment and for a few days afterward, HFS completely resolved for the first time since its onset, an experience that led to consideration of an underlying infection," according to LeWitt.

The resolution of HFS within 10 days of initiating antibiotic treatment led doctors to the diagnosis of Lyme disease.

"Further inquiry determined that 5 years earlier, the patient had sustained a tick bite which was encircled by a rash and associated with a low-grade fever for 1 week."

The tick bite preceded the HFS by approximately 6 months.

A lumbar puncture exam and cerebrospinal fluid polymerase chain reaction testing for *Borrelia burgdorferi* revealed the woman was positive for Lyme disease, and she was started on intravenous ceftriaxone (2 g/d for 56 days).

According to LeWitt, "The severity of HFS markedly decreased after this treatment, as did symptoms of chronic fatigue that she had been experiencing. Several years later, the patient resumed botulinum toxin injections for treating her mild symptoms of HFS."

Stone From the Departments of Internal Medicine and Oncology and the Charles A Sammons Cancer Center, Baylor University Medical Center, Dallas, Texas cited Sir William Osler (the father of Modern Medicine) views on how best to restore a patient to health in a 1995 paper in the American Journal of Cardiology.

"A physician must obtain a history, elicit pertinent positive and negative physical findings, and order appropriate laboratory tests. He or she must analyze these data in the context of an ever-expanding galaxy of scientific knowledge. What is the diagnosis? What constitutes the best treatment for this patient? What can be done to return this individual to as close to normal daily activities for him or her as possible? These goals of accurate inductive reasoning are sought every time a doctor sees a patient." [2]

The LeWitt case report reminds us of the rewards patients reap when clinicians engage in accurate inductive reasoning.

References:

1. LeWitt, T.M., *Hemifacial Spasm From Lyme Disease: Antibiotic Treatment Points to the Cause*. Clin Neuropharmacol, 2016.
2. Stone, M.J., *The wisdom of Sir William Osler*. Am J Cardiol, 1995. **75**(4): p. 269-76.

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