Dynamic Chiropractic

CHRONIC / ACUTE CONDITIONS

Lyme Disease: The Great Imitator, Part II

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Lyme disease is named after the town of Lyme, Connecticut. In 1975, rheumatologists learned of an epidemic of arthritis in this small town from two parents of affected children. These doctors went on to identify 39 pediatric cases and 12 adult cases of Lyme disease in the next 4 years.[1] Lyme disease is a multisystem disease caused by the spirochete Borrelia burgdorferi which is transmitted by the bite of ticks. As noted in Part I of this two-part series, Lyme disease has many neurological manifestations which can be seen throughout stages I and II of this three-stage disease process (see table I).

Table I: Stages I and II of Lyme Disease

Stage I

Headache
Stiff neck
Urticaria
Myalgia
Fever

Stage II

Headache
Photophobia
Stiff neck
Myalgia
Meningitis
Cranial neuropathies
Peripheral neuropathies
Transverse myelitis
Cerebellar ataxia
Chorea
Dystonia
Hallucinations
Delirium
Paranoid psychosis
Athetosis
Tremor
Hemiparesis
Parkinsonian symptoms
Encephalitis
Bowel and bladder dysfunction

The diagnosis of early Lyme disease is based on the clinical observation of the characteristic rash which begins three days to one month following a tick bite, taking the form of a large annular, red lesion with central clearing (erythema migrans); epidemological grounds; and laboratory data. In the early stages of the disease process, laboratory testing usually yields non-specific results in the form of an elevated erythrocyte sedimentation rate (seen in more than 50 percent of patients), mildly elevated liver enzymes, elevated IgM, and in some patients, the presence of cryoglobulin.[2]

Borrelia burgdorferi has been recovered from biopsies taken from the margin of one of the erythema migrans lesion in 40 percent. In many cases, the spirochete cannot be isolated or observed and serological testing for specific antibodies against the organism may be used to confirm the clinical diagnosis. Three to six weeks following the initial infection, most untreated patients develop a decrease in IgM antibodies and a rise in IgG antibodies which can be detected through enzyme-linked immunosorbent assay (ELISA). The treatment of Lyme disease centers around the use of antibiotic regimens to stop the dermatologic reaction (erythema migrans) which represents the spread of the spirochete outward in the tissue from the site of infection. Early Lyme disease is more responsive to treatment than stages II and III.

Prevention of Lyme disease is best accomplished by avoidance of tick-infested areas during the late spring and early summer months when tick activity is highest. In North America, infected ticks are common in the suburbs and near large areas of undeveloped woodlands. The ticks are found most often at levels below the knees in forest underbrush, and they gain access to human hosts by climbing up the legs. Should one venture into infested areas, some degree of personal protection may be obtained by wearing long pants with the cuffs tightly tucked into socks, long sleeve shirts with tight collars and cuffs, and possibly a hat. It is also advisable to wear clothing which has a smooth and close weave rather than coarser fabrics because these fabrics are more difficult for the ticks to crawl on. Lighter colored clothing should be worn because the ticks are easier to spot. In infested areas, sitting on the ground or lying on the ground should be avoided. Insect repellents may also afford some degree of protection from infected ticks as well.

Other measures affording protection from infection include brushing clothes off before entering the house after outdoor activity as well as immediate removal and washing of clothing. The persons should then shower promptly after entering the house and a careful inspection should follow, especially of hair-covered areas, around the ears, eyes, under the arms, in body folds, and behind the knees.[1]

Should a tick be found after attachment has occurred, the tick should be removed as soon as possible by grasping it with fine tweezers as close to the skin as possible and pulling gently.[1] Caution should be taken to avoid other methods of tick removal such as squeezing the tick, twisting the tick, application of petroleum jelly, butter, kerosene, alcohol, fingernail polish, or a hot match because the tick may inject the spirochetes into the skin as a result of any of these maneuvers. Transmission of the spirochete is rare in the first 24 hours of attachment, therefore early detection is vital.

References

1. Reik L. *Lyme Disease and the Central Nervous System*. New York, Thieme, 1991.

2. Hedayati H. Lyme disease. *JAOA,* 92:6, 1992.

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