Two Cases of Lyme Arthritis in Winter In New England: A Case Series

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Lyme disease is transmitted by nymphal *Ixodes scapularis* ticks, which appear in late spring and early summer; however, Lyme arthritis may occur during any season. Ticks infected with the spirochete *B. burgdorferi* are primarily found in the Northeastern and upper Midwestern US.

For Lyme transmission to occur, the spirochete must move from the tick midgut to the salivary glands and into the new host, which takes 24-48 hours. Early localized disease occurs 3-30 days after tick exposure and presents as erythema migrans; early disseminated disease can occur days to months after exposure and includes monoarticular or oligoarticular arthritis, with or without systemic symptoms. *B. burgdorferi* dissemination to joints, tendons, or bursae early in infection can be an asymptomatic event or present with transient arthralgias. Lyme arthritis presents later, with an adaptive immune response that results in spirochetal killing. Intermittent or chronic arthritis occurs in late disseminated disease, months to years after initial exposure.

**Management:** Treatment included doxycycline for both patients. Patient 2 underwent repeat aspiration for recurrent effusion with symptomatic relief and was prescribed physical therapy for quadriceps and hip abductor stabilization.

**Outcome:** In both cases, knee pain and effusion resolved with doxycycline treatment.

**DISCUSSION**

Lyme disease is transmitted by nymphal *Ixodes scapularis* ticks, which appear in late spring and early summer; however, Lyme arthritis may occur during any season. Ticks infected with the spirochete *B. burgdorferi* are primarily found in the Northeastern and upper Midwestern US.

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**CONCLUSIONS**

- Lyme arthritis can present at any time of year, and clinical suspicion should remain high in endemic regions, even without a known history of tick exposure or erythema migrans rash.