

Intermittent High Grade AV-Block and Atrial Flutter Associated with Lyme Carditis: A Case Report

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Introduction: Lyme disease is the most common tick-borne infection caused by spirochetes in the Borreliacidal family. In USA, infection is caused primary by *Borrelia burgdorferi*. Lyme disease typically progresses in phases. The clinical manifestations progress from early localized to early disseminated disease and then finally late disease. Lyme carditis occurs in 1% of untreated patients in the early disseminated phase. While complete AV-block is most common, atrial flutter is a rarer manifestation.

Case Report: Otherwise healthy 43-year-old man presented with new onset dizziness, fatigue, and syncope. Initial EKG showed complete heart block. Telemetry showed he developed underlying atrial flutter with episodes of ventricular standstill. Echocardiogram and cardiac MRI were unremarkable. Troponin was negative. Serologies for *borrelia burgdorferi* as well Lyme IgG and IgM western blot were positive. He was treated with IV Ceftriaxone and discharged with an active fixation pacemaker.

Discussion: Cardiac involvement occurs during the early disseminated phase of the disease usually within weeks after the onset of infection. 90% of Lyme carditis presents as high-degree atrioventricular block (AVB), whereas the other 10% is represented by myocarditis, pancarditis or other types of arrhythmias and conduction disorders. Other abnormalities that may occur include prolonged QTc, asystolic pauses and other supraventricular tachyarrhythmias. The mechanism of atrial flutter in Lyme carditis isn't fully understood.

Conclusion: It is important for physicians to understand the cardiac manifestations of Lyme disease. Patients who are otherwise young and healthy, who present acutely in an otherwise unexplained cardiac rhythm should have Lyme carditis ruled out or at least considered.