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Case Report

Barbeque Beget Syncope

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Introduction

A 32 year old Hispanic male truck driver with no known medical illnesses was last noted to be well 3 weeks prior to presentation. He attended a barbeque in a friend's backyard in a wooded area in Central Jersey and a day later noticed a rash on the posterior aspect of his right thigh. The lesion was described as erythematous and painful (Image 1).

In the days following, he began experiencing headache, myalgias, arthralgias and subjective fevers. This led to two visits to urgent care facilities were he was prescribed oral antibiotics which he took for 5 days. After completing the course of the antibiotics, both the rash and symptoms resolved.

Two days prior to arrival to our intensive care facility, he started feeling lightheaded and had one episode of syncope while delivering a package. There was no history of chest pain, shortness of breath, palpitations, nausea or vomiting prior to the event. There was no history of seizure like activity, bowel or bladder incontinence noted during the event. After he regained consciousness moments later, he attempted to stand and again had another syncopal episode. The emergency medical service was called and he was then transferred to a nearby facility. There, an electrocardiogram showed that he was in complete heart block and had immediate transvenous pacemaker placed. It was after this the patient was transferred to our facility for higher level of care.

At our institution, he continued to remain bradycardic with a heart rate in the 50- 60 range. He was started on Ceftriaxone for presumed lyme carditis. 24- 48 hours after admission, his electrocardiogram improved and showed 1st degree AV block with intermittent second degree Mobitz type 1. As his clinical status improved, permanent pacemaker placement was deferred. Throughout the hospitalization, the patient's bradycardia improved and the temporary pacemaker was eventually removed. Serology for Lyme IgM and IgG antibody returned positive. Babesiosis testing was negative. He was eventually discharged home to receive a total of 21 days of intravenous ceftriaxone.

Discussion

Lyme disease, a tick borne illness transmitted by the organism *Borrelia burgdorferi*, is endemic to many areas, including the Northeastern United States [1-3]. It is a multisystem disorder mainly involving the skin, neuromuscular and cardio-

vascular system. The most common manifestation is erythema migrans, which has been described as a 'bull's eye' lesion because of its central clearing and this occurs in up to 90% of affected patients [1,4]. Other less common manifestations are arthritis, facial palsy, aseptic meningitis and carditis. Lyme's carditis typically occurs in early disseminated disease.

Lyme can coexist with other organisms such as Erlichia and Babesia, therefore, it is important to rule out other diseases. The CDC reports that Lyme carditis affects approximately 1% of Lyme patients based on reports from data collected from 2000 to 2010 [5]. It usually begins 3 weeks after the initial illness and involves abnormalities in the heart conduction system, predominantly AV block [6] It has, however, been associated with bundle branch block, myocarditis, pericarditis and SVT on rare occasions. Patients with cardiac involvement may be asymptomatic or can be presented with complaints of palpitations, syncopal attacks, chest pain, dizziness and shortness of breath secondary to involvement of the cardiac conduction system.

Symptomatic patients are defined as patients with palpitations, syncopal attacks, chest pain, dizziness, shortness of breath, those who have first degree AV Block with PR interval >300 milliseconds, second or third degree AV Block. This requires inpatient hospitalization, telemetry monitoring and IV antibiotic treatment. Temporary pacing may be required for patients who are acutely symptomatic. Although usually Lyme infection is treated with doxycycline, treatment for Lyme Carditis is with IV antibiotics, particularly Ceftriaxone which is the gold standard for antibiotic therapy [1]. IV antibiotics can be changed to oral antibiotics such as doxycycline, amoxicillin and cefuroxime axetil after hemodynamic stabilization and reversal of AV blockage. Total duration of antibiotic treatment is 21 to 28 days [7].

In 1989, the Annals of Internal Medicine published four case reports on four serologically positive Lyme Carditis, each in previously healthy young males [8]. Each patient presented with AV block, some so severe that they required pacemaker placement similar to this gentleman presented in our case [9].

Overall, Lyme carditis typically has a good prognosis [1]. In most patients, reversal of Complete AV block typically occurs within one week with appropriate antibiotic therapy. Minor conduction abnormalities can be persistent up to six weeks. Most patients recover without any need for permanent pacing.

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