



Contents lists available at ScienceDirect

Journal of Cardiology Cases

journal homepage: www.elsevier.com/locate/jccase



Case Report

Reversible atrioventricular block and the importance of close follow-up: Two cases of Lyme carditis

Anthony H. Kashou (BS)^a, Nabil Braiteh (MD)^b, Hisham E. Kashou (MD FACC FSCAI)^{c,*}

^aSUNY Upstate Medical University, Syracuse, NY, USA

^bUnited Health Services Hospitals, Wilson Regional Medical Center, Department of Internal Medicine, Johnson City, NY, USA

^cUnited Health Services Hospitals, Wilson Regional Medical Center, Department of Cardiology, 30 Harrison St #250, Johnson City, NY, USA

ARTICLE INFO

Article history:

Received 20 September 2017

Received in revised form 19 December 2017

Accepted 9 January 2018

Keywords:

Lyme carditis

Heart block

Atrioventricular block

Temporary cardiac pacing

Pacemaker

ABSTRACT

Lyme carditis is an uncommon presentation of the early-disseminated phase of Lyme disease, although it is recognizable and often curable. Because of its rarity, diagnosing Lyme carditis requires a high level of suspicion, especially when young patients in certain endemic areas present with symptoms of bradycardia and/or evidence of high-degree atrioventricular (AV) block. Temporary cardiac pacing along with antibiotic therapy has been shown to aid in the management of Lyme carditis until symptoms and conduction blocks have resolved. Herein, we report two cases of Lyme carditis-induced AV block that were successfully managed and reversed with temporary cardiac pacing and antibiotics. In order to monitor for any late sequela that may arise, we also recommend close follow-up for patients treated for Lyme carditis with high-degree AV block.

<Learning objective: Lyme carditis manifests as a conduction system disease, predominantly involving the atrioventricular (AV) node. It can present without the classical signs of Lyme disease. It is critical to have a high suspicion of Lyme carditis in patients who present with symptoms of bradycardia or high-degree AV block in high prevalence areas. Early initiation of antibiotics, along with external temporary pacing, dramatically improves mortality rates. Close follow-up is important in patients that develop high-degree AV block.>

© 2018 Japanese College of Cardiology. Published by Elsevier Ltd. All rights reserved.

Introduction

Lyme disease is a tick-borne infection caused by the spirochete *Borrelia burgdorferi* and is most commonly transmitted by the deer tick *Ixodes scapularis* [1]. It is endemic to the Northeastern and Mid-Atlantic regions of the USA. Acute infection typically presents with erythema migrans at the site of the tick bite as well as fever and constitutional symptoms. Early recognition and treatment prevents dissemination of the infection. However, if treatment is delayed, the infection can spread to affect other organs.

Cardiac involvement affects about 1% of patients with Lyme disease and 4–10% of untreated patients with Lyme disease [2]. While males have a slightly greater incidence of Lyme disease, there is about a 3:1 male predominance of Lyme carditis [3]. Lyme carditis often manifests itself by affecting the electrical conduction

system of the heart, specifically the atrioventricular (AV) node, producing varying degrees of AV conduction block [2]. It may progress from first- to third-degree (complete) heart block within minutes to hours, and be fatal if not treated. Patients may present asymptomatic or with chest pain, lightheadedness, syncope, or even sudden cardiac death [2].

Treatment is critical to prevent complications of Lyme disease and reduce the duration of cardiac involvement. Temporary pacing along with antibiotic therapy may be needed in cases of severe or symptomatic AV block and/or hemodynamic instability. We present two cases of Lyme carditis and their successful management with temporary cardiac pacing and antibiotics, as well as the importance of close follow-up in patients that develop high-degree AV block.

Case report #1

A 26-year-old male from upstate New York was evaluated in the emergency department for a two-day history of dizziness, fatigue, and chest pain. Three weeks previously, the patient reported

* Corresponding author.

E-mail addresses: hishamekashou@gmail.com, Hisham_Kashou@uhs.org (H.E. Kashou).

spending time in the woods, although denied any tick bite. However, two weeks previously, he found a tick on his bed. Since that point, he began to develop myalgias, fatigue, and a low-grade fever. He remained asymptomatic until two days before presentation when he began experiencing chest pain and tightness on minimal exertion along with lightheadedness.

Physical examination was unremarkable, except for bradycardia. He was in no distress and had no evidence of any rash or neurological abnormality. He was afebrile with a heart rate of 28 beats/minute and a blood pressure of 160/75 mmHg. Laboratory data, including troponins, complete blood count, and electrolytes were within normal limits. Electrocardiogram showed second-degree AV block Mobitz type 2 with a 4:1 conduction pattern (Fig. 1). The patient was admitted and sent to the cardiac care unit after he had an emergent temporary pacemaker placement along with prompt initiation of 2 g of IV ceftriaxone. Two days after admission, he dropped to first-degree AV block, which then returned to normal sinus rhythm without any evidence of conduction disease after four days. A few days later, serological testing returned positive for Lyme disease. The temporary pacemaker was removed and he was discharged on oral doxycycline for 21 days.

Case report #2

An 18-year-old male from upstate New York presented to the emergency department with episodes of lightheadedness and dizziness that began 5–6 h previously. These episodes started when he woke up and continued intermittently, generally lasting a few seconds. However, in one episode he became pale, started shaking, and was unresponsive for two minutes. He remained confused for several minutes and could not recall the events after regaining consciousness.

Over the previous two weeks, the patient reported generalized body aches and low-grade fever. Further questioning revealed that

he and his family live in a wooded area with dogs and cats that were found recently with many ticks. He also spends time outdoors, but denies any tick bite.

Vital signs and physical examination were unremarkable. He had a blood pressure of 120/60 mmHg and heart rate of 84 beats/minute. He was in no distress and had no evidence of any rash or neurological abnormality. Laboratory data, including troponins, complete blood count, and electrolytes were within normal limits. Electrocardiogram showed third-degree (complete) heart block (Fig. 2). He was admitted and had an emergent temporary pacemaker placed along with the prompt initiation of 2 g of IV ceftriaxone. Three days after admission, the patient went from third- to second-degree AV block, and then to first-degree AV block until complete reversion to normal sinus rhythm without any conduction disease after five days. A few days later, serological testing returned positive for Lyme disease. At that point, the temporary pacemaker was removed and he was discharged on oral doxycycline for 21 days.

Two months after discharge, the patient returned to the emergency department after an episode of lightheadedness. Complete cardiac workup and electrocardiogram (Fig. 3) were within normal limits. An event monitor was placed to rule out any missed episodes of bradycardia or AV block secondary to potential AV nodal scarring from Lyme carditis, and he was scheduled for a follow-up appointment two weeks later.

Discussion

Lyme carditis has a broad timeline for its clinical manifestations. It can manifest within 4–5 days or as late as 6–7 months after a tick bite. The association of Lyme carditis with AV conduction system disease is well known. A study of over 100 patients revealed 12% had first-degree AV block, 16% had second-degree AV block, and 49% had third-degree heart block upon presentation [4]. The remaining 23% of patients had no conduction abnormalities. Of

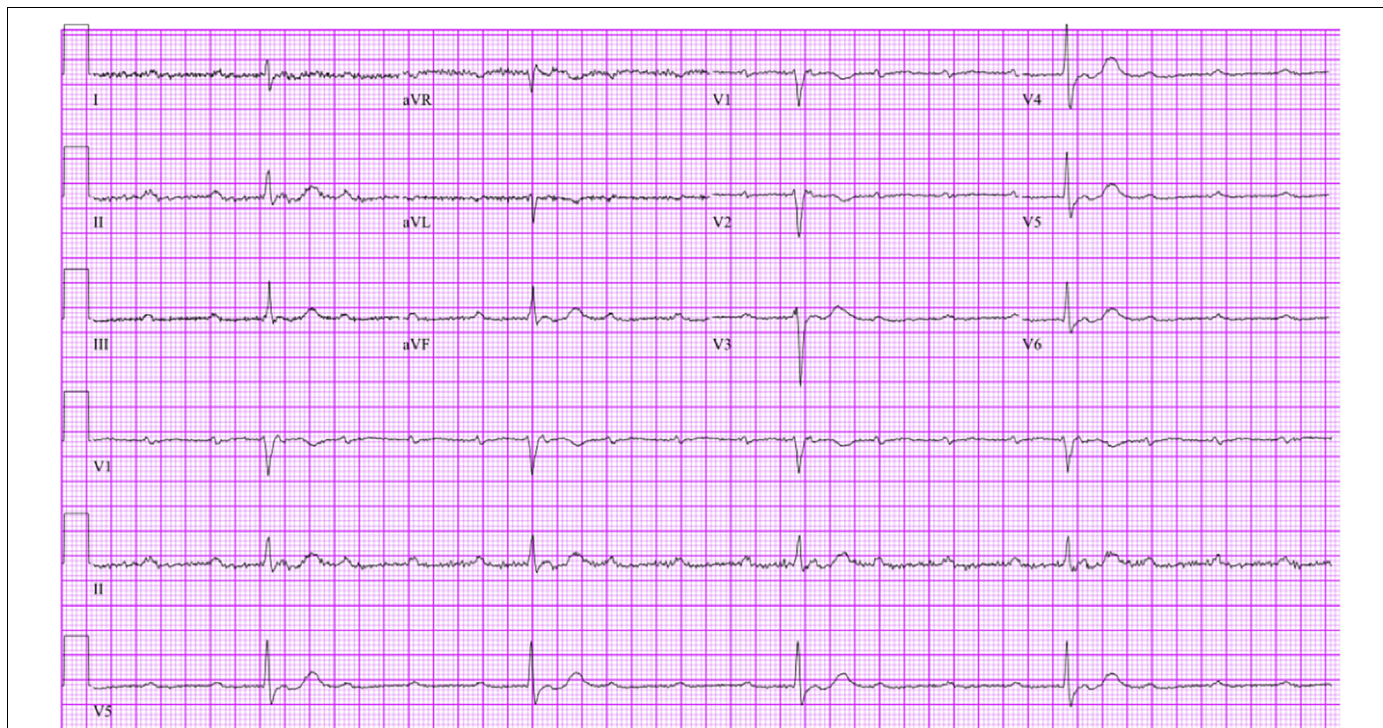


Fig. 1. Electrocardiogram showing second-degree atrioventricular block Mobitz type 2 with a 4:1 conduction pattern and a heart rate of 28 beats/minute.

Download English Version:

<https://daneshyari.com/en/article/8668065>

Download Persian Version:

<https://daneshyari.com/article/8668065>

[Daneshyari.com](https://daneshyari.com)