

***Ixodes* Tick Bite on a Beach: An Atypical habitat for the tick**

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Abstract

Presentation

24 year old female, came in to the hospital with history of generalized symptoms including fatigue, generalized body aches, headaches and low grade fever. She had a history of travel to Spain for a short trip 10 days ago. She had a rash that had disappeared a couple of days ago.

Diagnosis

She was worked up with all the baseline investigations for fever and generalized symptoms including pan cultures. On Recommendation of Infectious disease team, Lyme Disease serology was sent and lumbar puncture done as part of suspicion for meningitis LP came back negative. Lyme disease serology tested positive in blood.

Treatment

Patient started on empiric treatment with IV antibiotics for suspected meningitis with Lyme disease. IV antibiotics continued for 10 days till resolution of symptoms.

Discussion

Ticks infected with the *Borrelia* bacteria, which can cause Lyme disease, are commonly found in various habitats, including woodlands, grasslands, moorlands, parks, and gardens.¹ It was one of the first instances where history of swimming in waters on a Spanish beach had led to being bitten by a tick and resulting in Lyme Disease. Importance of detailed history including travel history be emphasized in medical students and junior doctors.

Introduction

Lyme disease is a Spirochetal infection transmitted by the bite of infected ticks of the *Ixodes ricinus* complex.² *Borrelia* is the causative agent for Lyme disease and has different subtypes

epidemiologically. In USA, infections are usually caused by *B.burgdorferi*, whereas, *B.afzelii*, *B.garinii* and *B.burgdorferi* are the usual causative agents in Europe and Asia.³

The *Ixodes* ticks are usually known to be forest dwellers and are found in the floor of the forest where usually there is low risk of dessication and the humidity is high. Therefore, Lyme Disease is mostly known to be associated with the forested areas in the northern hemisphere.⁴

Case Report

A 24-year-old female, who is a known nurse by profession, was received in emergency department with generalized symptoms of severe fatigue, body aches, headaches and low grade fever. Patient was vitally stable during the emergency department visit and the initial work up for fever was negative. Blood investigations including full blood count, renal and liver profile, urea and electrolytes, bone profile and inflammatory markers came back negative. Urine dip was found to be negative as well. Chest X ray was found to be unremarkable as well. Patient was admitted as a case of fever of unknown origin and pan-cultures were sent out and patient started on intravenous antibiotic therapy as per Infectious Disease recommendations with Ceftriaxone. Echocardiogram was booked which was unremarkable. Lumbar Puncture was performed whose initial reports ruled out meningitis.

Patient received Intravenous Ceftriaxone for 2 days and was afebrile during the 48 hours of admission. Unsure of the source, a detailed history and examination was done during the ward rounds. Travel history revealed that patient had been to Spain for the summer break and went to different beached. She remembered being bitten by something on one of the beaches which led to a skin rash. Being a nurse herself, she applied some hydrocortisone cream on the rash which vanished. She did, however, take some photos of the rash. She did not report this during the ED visit as she thought the rash was insignificant and unrelated to the current symptoms. Rash was discussed with the Infectious Disease team who recommended getting Lyme Serology both in blood and the CSF sample. Blood Serology for Lyme came back positive. CSF sample reports for Lyme disease were received after 3 weeks which were negative for Lyme Disease thereby ruling out Lyme Meningitis. Patient received Intravenous Antibiotics for 10 days and improved significantly. All generalized symptoms recovered. She was followed up in the clinics till resolution of symptoms.

Discussion

It was one of the unique instances where patient was bitten by the tick at a beach. Usually, people who have been on a hiking trip in deep forests are associated with the tick bites. It might be that either the tick was carried by someone from the forest areas to the beach as Spanish beaches are high time for tourist visits during the summer seasons, or the tick has

adapted itself to the beach environment and we might expect more such tick bites if that's the case.

Declarations of Conflicts of Interest:

None declared.

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Images:



Figure 1



Figure 2