

Radiculoneuritis As The Initial Presentation Of Lyme Neuroborreliosis

Mohamad Talal Basrak, MD,¹ Mohammad Alazzeh, MD,¹ Aqsa Zafar, MD,¹ Sumesh Khanal, MD¹
Department of Medicine, Phoenixville Hospital, Tower Health, Phoenixville, PA.

Introduction

Bannwarth syndrome is an uncommon manifestation of Lyme neuroborreliosis (LNB) characterized by painful radiculoneuritis with variable motor weakness, sometimes accompanied by facial nerve palsy, and a cerebrospinal fluid (CSF) pleocytosis. Such neurologic involvement usually occurs weeks to several months after a tick bite [1-3]. Compared to Europe, in the United States, painful radiculopathy appears to be less frequently reported in early LNB [4]. We present a case of LNB that manifested with painful radiculoneuritis and CSF pleocytosis within only one week of rash onset.

Case Presentation

A 65-year-old male without any significant medical comorbidities was referred to the emergency department for asymptomatic new-onset atrial fibrillation with rapid ventricular response. He sought medical attention at an urgent care center for a few hours' history of right arm numbness, as well as a one-week history of intermittent fever, worsening myalgias, headaches, and shooting upper back pain radiating to the right arm. He reported a recent tick bite, without prior diagnosis or treatment for Lyme disease. A head computed topography (CT) scan without contrast and magnetic resonance imaging (MRI) of the brain with and without contrast were unremarkable. Acute Lyme disease was confirmed with three of three positive immunoglobulin M (IgM) antibodies and negative immunoglobulin G (IgG) antibodies. A lumbar puncture revealed lymphocytic pleocytosis and a positive CSF polymerase chain reaction (PCR) for *Borrelia* sp. DNA. Antibiotics were switched from oral doxycycline to intravenous IV ceftriaxone 2 gram daily to complete a 21-day course.

He spontaneously converted to sinus rhythm, and his cardiac work-up was unremarkable. By discharge after two days of antibiotics, his rash had disappeared, and his neurological symptoms had significantly improved.

Discussion

Surveillance data from the Centers for Disease Control and Prevention (CDC) indicate the prevalence of radiculopathy in Lyme disease is 4% and meningitis 3% [5]. This case underscores the need for a low index of suspicion for neurological manifestations of Lyme disease in endemic areas, especially during peak seasons (spring through fall). Early recognition ensures timely treatment and prevents long-term sequelae. The diagnosis of Bannwarth syndrome is made based on appropriate clinical symptoms, examination findings, and CSF studies. Neuroimaging, such as MRI with and without contrast, can show enhancement and help rule out other differentials but is not essential for diagnosis [1].

Conclusion

Lyme neuroborreliosis can present early with painful radiculoneuritis. Early recognition of this uncommon manifestation is crucial for diagnosis and management.

References

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This figure shows the usual stages and most common clinical features of Lyme borreliosis [6].

In our case, Lyme neuroborreliosis presented very early in stage 1

