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Title

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Journal

Journal of Education and Teaching in Emergency Medicine, 2(4)

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Publication Date

2017

DOI

10.5070/M524036781

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Peer reviewed

Erythema Migrans

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Submitted: August 8, 2017; Accepted: September 19, 2017; Electronically Published: October 15, 2017; <https://doi.org/10.21980/J8QW7Q>

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History of present illness: A 28-year-old male presented to the emergency department with a chief complaint of two weeks of headache, chills, and numbness in his hands. He reported removing a tick from his upper back approximately two weeks ago, but did not know how long the tick had been embedded. His review of symptoms was otherwise unremarkable.

Significant findings: On physical examination, an 8-cm non-raised, erythematous lesion with central clearing was noted on the right posterior thorax. A small scab was located at the center of the lesion with no evidence of retained tick. No other rashes were present.

Discussion: Lyme disease is a tick-borne illness caused primarily by the spirochete *Borrelia burgdorferi*. Ticks must be attached for a minimum of 48 hours in order to transmit the spirochete.¹ Erythema migrans (EM) is the most common clinical manifestation of Lyme disease. EM is characterized by a slowly-expanding erythematous rash at the site of the tick bite, typically appearing between 7- and 14-days following tick attachment. Rashes range from 5cm to 30cm and may develop central clearing.² Erythema migrans must be differentiated from initial erythema at the site of the bite due to a reaction to tick saliva. The differential includes southern tick-associated rash illness, erythema multiforme, cellulitis, contact dermatitis, and tinea

corporis. The presence of erythema migrans has a sensitivity of 69% and a specificity of 98% for Lyme disease.³ Serological testing is not indicated in patients with EM, as only about 30% will be seropositive at presentation.⁴ Treatment of early Lyme disease consists of doxycycline preferentially, or amoxicillin, or cefuroxime for 14 days.⁶ Recurrence of erythema migrans after a full course of antibiotics is most likely due to re-infection rather than relapse.⁷ Prognosis is excellent with antibiotic treatment; however, those in endemic areas are at high risk for re-infection.⁸

Topics: Erythema migrans, Lyme disease, *Borrelia burgdorferi*, infectious disease.

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