

The expanding rash: Early recognition of suspected Lyme disease in primary care

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ABSTRACT

Introduction: Lyme disease, caused by *Borrelia* species is the most common tick-borne infection in Europe and North America. Early identification is necessary to prevent progression to cardiac, neurological or rheumatological complications. In primary care, diagnosis may be challenging due to diverse presentations, overlapping symptoms, and diagnostic uncertainty especially among patients with autoimmune diseases. **Case Presentation:** 54-year-old of mixed ethnic background academic with underlying autoimmune hypothyroidism and systemic sclerosis presented with a three-week history of an expanding rash over the right inner arm following a suspected insect bite. She recently returned from Northern Europe and had adopted an unscreened domestic cat, raising additional differential considerations for zoonotic exposure. On examination, she was afebrile with full GCS and hemodynamically stable. Skin lesion over the right arm initially demonstrated a classical “bull’s-eye” appearance suggestive of erythema migrans and later evolved into a macular lesion measuring about 2.5×2.5 cm. Assessment of associated symptoms such as arthralgia was limited due to chronic analgesia usage for musculoskeletal conditions. Given the travel history and typical cutaneous rash, clinical diagnosis of suspected Lyme disease was made, and empirical antibiotic therapy was prescribed. **Conclusion:** This case highlights the diagnosis complexity of suspected Lyme disease in patients with autoimmune conditions, where symptoms may overlap with inflammatory disorders. In primary care, thorough travel history and recognition of *erythema migrans* are key to enabling early diagnosis and timely empirical treatment. Awareness of Lyme disease in returning travellers is essential for early clinical diagnosis and timely treatment, helping to prevent progression to more serious complications.