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Brief Report: False Positive Erlichia Serology in a Patient with SLE (Systemic Lupus Erythematosus).

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Abstract

Systemic Lupus Erythematosus (SLE) and Ehrlichiosis may present with similar history and physical findings; therefore, tick borne disease must be considered in endemic areas. Symptoms include: myalgia, nausea, anorexia, fever and a maculopapular to petechial rash. Laboratory findings include leukopenia, hyponatremia, elevated liver enzymes, anemia and thrombocytopenia. Nephritic syndrome has been described in patients with Ehrlichiosis.

Key words: Erlichia chaffeenesis serology, SLE (systemic lupus erythematosus)

Introduction

The patient is a 17 yo male who was transferred from another hospital with a one-month history of weight loss, generalized arthralgia, hair thinning and a 1 week history of oral sores, poor oral intake, bloody stools, fevers up to 104F and erythematous rash involving his face, trunk and extremities. Laboratory studies at the referring ED showed anemia (8.8 g/dL), leukopenia (3.9x 10^3/ul) and normal platelets. His BUN was 37 mg/dL, creatinine 1.3 mg/dL, albumin 2.3 g/dL, sodium 132 mmol/L with otherwise normal electrolytes, AST 45 U/L and AST 68 U/L. The ESR and CRP were elevated at 119 mm/hr and CRP 67.3 mg/dL, respectively. No history of travel and the family history was negative. His physical exam showed an overweight and normotensive teenager with mild hair thinning, malar rash, conjunctival erythema, swollen lips, several small oral ulcers with no active bleeding and a faint punctiform erythematous popular rash in the trunk and extremities. Lungs, heart and abdominal exam were unremarkable and the genital exam showed no lesions. He had no adenopathy. No initial antibiotics were administered and an empiric diagnosis of Inflammatory Bowel Disease was made. Gastroenterology was consulted. Evaluation included upper and lower endoscopies, positive for small shallow lesions in the antrum and mild duodenal erythema, with negative biopsies. Inpatient evaluation showed negative blood cultures and Herpes simplex PCR on oral lesions. HIV Ab and RPR were non- reactive. His CMV and EBV IgG were positive and IgM negative. His chest x ray was normal. The echocardiogram showed minimal pericardial effusion. His urinalysis showed proteinuria and the urine protein/creatinine ratio was 6.5. Flow cytometry was negative for lymphoproliferative disorders and malignancy. Due to the presentation of leukopenia, hyponatremia, fever and rash the patient was placed on Doxycycline pending titers for Ehrlichia chaffeensis. Initial Ehrlichia titers resulted as IgG 1:256 and IgM <1:20. His ANA was positive at 1:2560 in a homogeneous pattern, anti dsDNA greater than 1000, low C3 and C4 complements. He was Diagnosed with SLE with nephritis and the kidney biopsy showed lupus nephritis ISN/RPS class IV with activity score 10/24 and chronicity score of 0/12. He was started on solumedrol pulses for 3 days, followed by oral prednisone and hydroxychloroquine and later on addition of mycophenolate mofetil. The fever resolved within 48 hrs and the rash, oral lesions and arthralgias resolved gradually. Upon the diagnosis of SLE, Doxycycline was stopped after 4 days. He was discharged on immunosuppressive therapy for his SLE. His repeat Ehrlichia serology a 2 weeks later resulted as IgG <20 and IgM <1:20, with resolution of his presenting symptoms, his creatinine was 0.68 mg/dL, albumin up to 3.1 g/dL, the serum complements were trending up and the urine proteinuria down to a ratio of 1.3.

Disscussion

Patients with SLE and Ehrlichiosis may present with similar history and physical findings; therefore, tick borne disease must be considered especially in endemic areas. Our patient had no record of a known tick bite but had symptoms and laboratory data consistent with infection. These symptoms included: myalgia, nausea, anorexia, fever and a maculopapular to petechial rash. He also had the less common findings of conjunctivitis and oral ulcers [1]. His laboratory findings included leukopenia, hyponatremia, elevated liver enzymes, anemia and nephrotic range proteinuria. He did not demonstrate the common finding of thrombocytopenia. Nephrotic syndrome has been described in patients with Ehrlichiosis [2,3]. Our patient demonstrated an initial clinical improvement on Doxycycline however this was later stopped when the diagnosis of SLE was made.

SLE patients may present with findings of fever, anorexia, palatal lesions/oral ulcers, myalgia, leukopenia, anemia, thrombocytopenia and renal disease. These highly diverse and usually heterogeneous clinical manifestations usually raise the possibility of SLE in patients affected with multiorgan involvement. The diagnosis of SLE is then made relying on the clinical expertise and the combination of clinical manifestations and immunologic findings as outlined and confirmed in our patient [4].

The CDC and state health department report an incidence of 0.01-1.99 per 1,000,000 persons in the state of Florida for Erlichia. A comparable incidence to the Midwest and Northeastern states but less than the high incidence states of Missouri, Tennessee, or Oklahoma.

Nationally Ehrlichia cases have been increasing since 1999 [5].

This case illustrates the finding of falsely elevated and transient antibody titers to infectious diseases seen in patients with SLE. Upon review of the literature there are reports of false positive serology in patients with SLE including: Lyme disease [6], Syphilis (Treponemal and non Treponemal), Dengue virus [7], Epstein Barr Virus, Toxoplasma gondii, Cytomegalovirus, and Hepatitis B [8]. In some patients it is possible that that the high infectious titers may represent previous exposure to infectious agents that may play a role in the induction of SLE [8]. We report only the second known case to our knowledge of false positive serology to Erlichia chaffeenesis, the etiologic agent of Human Monocytic Ehrlichiosis (HME) in patient with SLE [9].

Conflict of interest: The authors declare no conflict of interest.

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