Open Access Macedonian Journal of Medical Sciences. 2014 Sep 15; 2(3):472-473.
http://dx.doi.org/10.3889/oamjms.2014.083
Case Report

Multiple Erythema Lesions Obscured As Fungal Skin Infection

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Citation: Koçinaj A, Gërçari A, Ferizi M, Lashi E, Gjunkshi L, Fida M. Multiple Erythema Lesions Obscured As Fungal Skin Infection. OA Maced J Med Sci. 2014 Sep 15; 2(3):472-473. http://dx.doi.org/10.3889/oamjms.2014.083

Key words: Erythema migrans; Lyme; Tick; Borrelia infections; Antibiotic treatment.

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Received: 21-Apr-2014; **Revised:** 30-May-2014; **Accepted:** 01-Jun-2014; **Online first:** 29-Jun-2014

Competing Interests: The authors have declared that no competing interests exist.

Abstract

Erythema migrans is a ring like erythema, with a few centimeters in diameter. Usually it occur solitary, days to weeks after an infected tick bite. According to skin changes it can be manifested acutely such as erythema migrans in Lyme Borreliosis, borrelial lymphocytoma (subacute), or as a late Lyme disease with acrodermatitis chronica atrophicans. All stages of this disease can be treatable with antimicrobial agents. As a first case in our department with multiple lesions, we describe a 14-year-old female and review the patient's clinical and laboratory features, the causes of the disease, diagnosis as well as treatment.

Introduction

The erythema migrans was presented in early years of 20th century [1], and is usually the earliest manifestation of Lyme disease (LD). In the USA, there are 20,000 cases reported annually of LD [2]. In southern Europe, the incidence of Borrelia infections ranges from 43% in Croatia to 1.1% in Greece [3]. In Europe the multiple lesions of erythema migrans were observed in 5-10% of Borrelia infections and are not the result of multiple tick bites [4]. Identification of *Borrelia burgorferi* is through microbiological test or skin biopsy, and antibacterial treatment is necessary [5].

Case report

A 14 years old female A.H. was admitted in our department with some ring erythema in different sites of the body for a few months. The patient was previously treated topically for tinea superficialis corporis with positive mycotic result by direct microscopy.

Ten months ago she had a neck lymphadenopathy, and was treated with antitubercular therapy for 8 months based on the histological examination showing tuberculosis feature. There was also evidence that she lives in the epidemic region of ticks (not infected ones). In the last four years her mother confirmed that she had experienced a tick bite each year which were removed without any medical consultation.

Her first symptoms started 6 months ago with ring form erythema with a livid and necrotic center, on her right sole (Figure 1). At the same time this feature appeared also in her right arm which started smaller then grew to 10 cm in diameter. In the mean time until her admission into our clinic they spread to other areas, buttocks, right forearm (Figure 2), abdomen, and were approximately 3-4 cm in diameter. She didn't experience any systemic symptoms.

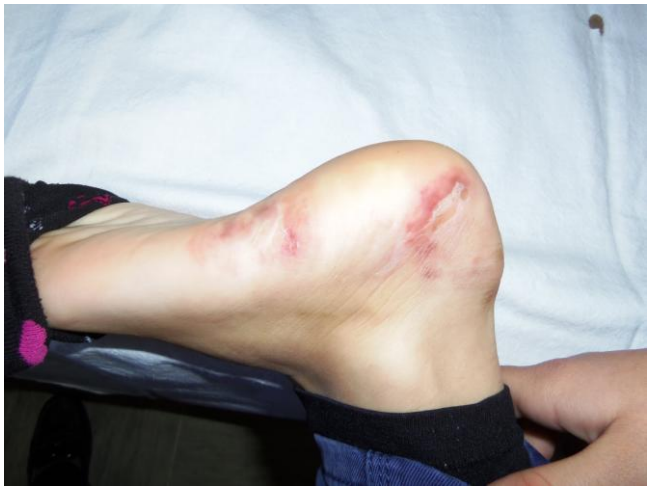

Figure 1: Two lesions in the right sole (ring form erythema with a livid and necrotic center).

The routine blood analyses were within normal ranges except the high erythrocyte sedimentation rate and the presence of anemia. The rheumatic blood tests were negative; the specimen of the throat and nose was negative. The abdominal ultrasound revealed normal findings. A *Borrelia burgdorferi* enzyme immunoassay was performed and the result was IgG negative and IgM positive.

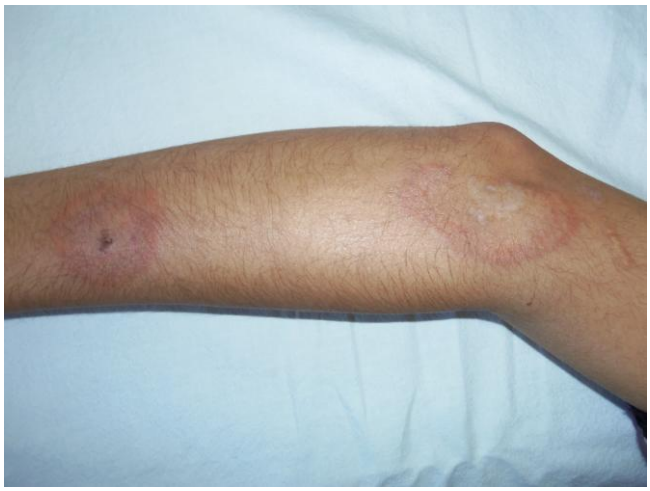

Figure 2: Lesion in the lower right arm, with erythema and necrotic center.

The patient was treated orally by Amoxicillin 500 mg (3 times per day) for a month. The clinical feature has improved.

Discussion

According to sources, erythema migrans rash occurs in 90% of patients infected with Borrelia, and some of them have multiple erythema migrans skin lesions [6]. Up to 5% of untreated patients may develop chronic neurological complaints months to years after infection [7]. Rates of seropositivity by each of the testing methods were also significantly higher for patients with multiple skin lesions than for those with single lesions [8] as our case showed, but studies show that serologic tests need to be combined with clinical signs and symptoms [9]. Some recommend topical treatment, others demonstrate ineffective antibiotic prophylaxis, while a study shows that treatment with tetracyclines or amoxicillin resulted with a period of 3 years free of developing the complications attributable to Lyme borreliosis [10].

This case was the first one with multiple lesions of erythema migrans in our clinic. The patient was initially treated for tinea superficialis corporis based on direct microscopy. The most important clue was that she experienced tick bites time after time for the last four years. She also presented with lymphadenopathy, in the mean time the antitubercular treatment was initiated based upon the histopathology result although there exist a known similarity with Lyme Borreliosis histopathology findings.

In conclusion, removing the tick from the inoculation site in the appropriate way is essential. The patient should be treated with antibiotics (tetracycline or amoxicillin) to prevent developing the systemic symptoms of Lyme Borreliosis disease and must be followed up for possible complications.

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