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ECTHYMA MIMICKING CUTANEOUS LEISHMANIASIS

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Chronic non-healing ulcerated skin lesion can be a diagnostic dilemma for the dermatologist in an area endemic with cutaneous leishmaniasis. The differential diagnosis may include a large list of cutaneous diseases ranging from infection to advanced skin cancers. Ecthyma is cutaneous infection caused by group A beta-hemolytic streptococci or Staphylococcus aureus bacteria with dermal and subcutaneous invasion. Ecthyma is a differential diagnosis for cutaneous Leishmaniasis presenting as an ulcerated lesion in endemic areas. Being in endemic area for cutaneous leishmaniasis, general physicians and some dermatologist may miss other important and common differential diagnosis, resulting in delay of proper management and increase risk of complications. Our aim in this work is to draw the attentions toward better management while dealing with ulcerated cutaneous lesions.

Method: Case reporting.

Result: This is a case of a 60 year-old Sudanese male patient who presented with a chronic nonhealing ulcerated lesions at his right forearm for 4 months. The patient was misdiagnosed as a case of cutaneous leishmaniasis and he was treated with anti-leishmanial therapy with no improvement. He was finally diagnosed to have staphylococcal ecthyma that successfully responded to oral antibiotic.

Conclusion: Dealing with chronic ulcerated skin lesion requires a careful and detailed history taking and a good knowledge of the common and endemic diseases in the patient's area supported by proper laboratory studies

Keywords: Ecthyma, cutaneous leishmaniasis, infection, leishmania

Хронічне незагойне згниле ураження шкіри може бути діагностичною проблемою для дерматолога в області, ендемічній зі шкірним лейшманіозом. Тут ми повідомляємо про випадок 60-річної суданського пацієнта чоловічої статі, в якого спостерігалось хронічне незагойне згниле ураження шкіри поразок на правому передпліччі протягом 4 місяців. У пацієнта був помилково діагностований випадок шкірного лейшманіозу і він лікувався антилейшманіозною терапією, яка не поліпишила його стан

Ключові слова: ектима, шкірний лейшманіоз, інфекція, лейшманія

1. Introduction and literature review

Cutaneous leishmaniasis is an old parasitic disease caused by obligate intracellular protozoans from the genus *Leishmania* [1]. It is typically transmitted to human through the bite of infected female sand fly of the genus *Phlebotomus* in the Old World and *Lutzomyia* in the New World [2]. Cutaneous leishmaniasis is endemic in Saudi Arabia, according to World Health Organization (WHO) 2,549 cases were reported in 2009 [3, 4]. The clinical forms of leishmaniasis are categorized into three forms: cutaneous leishmaniasis, mucocutaneous leishmaniasis and visceral leishmaniasis [3]. Cutaneous leishmaniasis usually present with painless nodules, plaques, ulcers, or noduloulcerative lesions on exposed body parts [5]. The main differential diagnosis of cutaneous leishmaniasis include acute bacterial infection, fungal infection, mycobacterial infection, arthropodbite, sarcoidosis, syphilis and skin cancer [6, 7]. In the literatures, there were few case

reports from endemic areas about cutaneous infections that have been misdiagnosed as cutaneous leishmaniasis. AlKhodair and Al-Khenaizan, reported a case of a Saudi male who presented with a chronic, nonhealing ulcer at his right elbow and was misdiagnosed and mistreated as cutaneous leishmaniasis. This patient was finally diagnosed as fish tank granuloma that responded well to oral antibiotics [8]. Verma S. *et al.* reported two cases from sub-Himalayan region, presented with chronic, nonhealing facial lesions that were misdiagnosed and mistreated as cutaneous leishmaniasis. The patients were finally diagnosed as facial chromoblastomycosis [9].

Here, we report a Sudanese male who presented with chronic, ulcerated cutaneous lesions that was misdiagnosed and mistreated as cutaneous leishmaniasis. Being in an endemic area, other differential diagnosis was overlooked and the case was finally diagnosed to be staphylococcal ecthyma that successfully responded to oral antibiotic.

2. The case

A 60 year-old Sudanese male presented to the dermatology clinic of King Fahd Hospital of the University with two chronic nonhealing ulcerated lesion at his right forearm for 4 months. The lesion started as an erythematous symptomless papule that gradually enlarged to a nodule and became ulcerated discharging pus. The patient was diagnosed as a case of cutaneous leishmaniasis at a private clinic and sodium stibogluconate intramuscular for fourteen days was given. According to the patient, he did not notice any improvement in his condition the following weeks, so intravenous sodium stibogluconate was given once. During the following three months, the ulcer continued to enlarge in width and depth with pus discharge mixed with blood (Fig. 1).



Fig. 1. The right forearm revealing ulcer with purulent, bloody discharge and surrounding erythema

There was no fever or any other constitutional symptoms. On examination of the right forearm, there was two ulcers of 3 centimeters in its largest diameter, discharging purulent, bloody discharge and surrounded with erythema. There was no regional lymphadenopathy. He had no fever and systemic examination did not reveal any abnormality. At that time, our differential diagnosis was bacterial infection, fungal infection and cutaneous leishmaniasis. His laboratory investigations including complete blood count, erythrocyte sedimentation rate, liver enzymes and renal function tests were within normal limits. Swab from the discharge for bacterial culture revealed staphylococcus aureus. Biopsy was cancelled since the tissue was so friable. So the condition was diagnosed as a case of staphylococcal ecthyma. The patient was started on amoxicillin and clavulanate potassium (Augmentin) 1 gm every 12 hours daily for 2 weeks with daily wound care conducted by the nurse. After 4 weeks, the patient came with complete healing of the ulcer and post inflammatory hyperpigmentation.

3. Discussion

Cutaneous leishmaniasis is a chronic parasitic skin infection caused by protozoans from the genus

Leishmania. In Saudi Arabia, the most common form of leishmania infection is cutaneous leishmaniasis in central and eastern provinces and *Leishmania tropica* in western and southwestern provinces [3]. The main vector of the disease is *Phlebotomus sergenti*, and the disease affects males and females equally [3]. The disease mostly affects patients of 15–44 years of age mainly at the extremities; most patients have a single lesion, with less than 5 % showing multiple lesions on hands, legs, and face [3]. In our area, cutaneous leishmaniasis is one of the top of differential diagnosis list of any ulcerated skin lesion at any exposed body parts.

On the contrary, gram positive bacteria are responsible for the vast majority of skin infections [10]. However, staphylococcus aureus frequently colonizes the cutaneous and mucosal surfaces. In the United States, it is estimated that approximately 30 % of healthy individuals are colonized in the skin or mucosa with staphylococcus aureus [10].

Ecthyma is a cutaneous infection with dermal and potential subcutaneous extension. It is commonly caused by group A beta-hemolytic streptococci or staphylococcus aureus. The lesion usually starts as vesicles or pustules with a grey-yellow crust that evolves into shallow punched-out ulcers with a necrotic base when the adherent crust is removed. Hemorrhagic crust can be present and the lesion eventually heals with scarring. Fever and regional lymphadenopathy can be prominent clinical features [11, 12]. Ecthyma occurs most commonly on the feet, legs, thighs and buttocks, but any site can be affected [12]. Factors predisposing to ecthyma include, environments with poor hygiene, low socio-economic status, malnutrition, tropical climate and immunodeficiency. It can evolve from impetigo that has not been properly treated or within a pre-existing dermatosis, site of trauma, arthropod bite and lesions of scabies [11, 12]. Ecthyma gangrenosum is a rare variant, typically caused by *Pseudomonas aeruginosa*, an aerobic gram-negative bacteria. It usually occurs in neutropenic or immunocompromised patients with *Pseudomonas septicemia* [13]. The diagnosis of ecthyma is confirmed by gram stain and culture of the exudate [14]. Oral penicillinase-resistant penicillin or first-generation cephalosporins are usually effective as most staphylococcal infections are methicillin susceptible. Alternatives for penicillin-allergic patients or infections with Methicillin-resistant *Staphylococcus aureus* (MRSA) include doxycycline, clindamycin or Trimethoprim-sulfamethoxazole (SMX-TMP) [13]. When streptococci alone are isolated, penicillin is the drug of choice, with a macrolide or clindamycin as an alternative for penicillin-allergic patients [14].

In conclusion, this is a patient who presented with staphylococcal ecthyma at his right forearm. It has been misdiagnosed as resistant cutaneous leishmaniasis. Amoxicillin and clavulanate potassium (Augmentin) 1 gm every 12 hours daily for 2 weeks with daily wound care were successful in clearing the infection.

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