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Widespread Skin Lesions in an Adult Patient

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INTRODUCTION

Impetigo is a contagious, superficial skin infection mostly caused by *Staphylococcus aureus* and beta-hemolytic streptococci. It is classified into non-bullous and bullous forms, with non-bullous impetigo accounting for approximately 70% of cases.[1,2] Although the disease can occur at any age, it is more common in children than in adults.[2] Risk factors include poor hygiene, crowded living conditions, lower socioeconomic status, immunodeficiency, atopic dermatitis, scabies, and malnutrition.[1,2] Empiric antibiotic therapy should provide coverage against *S. aureus* and beta-hemolytic streptococci.[3] While topical antibiotics are appropriate for limited disease, oral antibiotic therapy is preferred for extensive disease or during outbreaks.[3]

Here, we present a case of extensive skin lesions in an adult patient that initially prompted a broad infectious differential diagnosis but were ultimately identified as non-bullous impetigo.

CASE REPORT

A man in his 40s with a history of diabetes mellitus (hemoglobin A1c 6.7% on hospital admission), methamphetamine use (smoked), and unstable housing (living in an outdoor encampment in a wooded area) presented with a two-week history of scattered, painful skin lesions involving primarily the upper and lower extremities. Some lesions intermittently produced purulent drainage. He did not have associated systemic symptoms. The patient reported that another individual residing in the same encampment had developed similar skin lesions.

Physical examination revealed multiple annular erythematous plaques on the bilateral upper and lower extremities, several with overlying golden crust. Additional findings included a crusted plaque on the ventral abdomen and a pustule on the left knee (Figures 1-4). Given the extent of the lesions and the patient's outdoor exposures, a broad differential diagnosis was considered, including infectious etiologies such as histoplasmosis, blastomycosis, sporotrichosis, bacterial impetigo, and syphilis. Noninfectious conditions, including pustular psoriasis and subcorneal pustular dermatosis, also were considered but were thought to be less likely.

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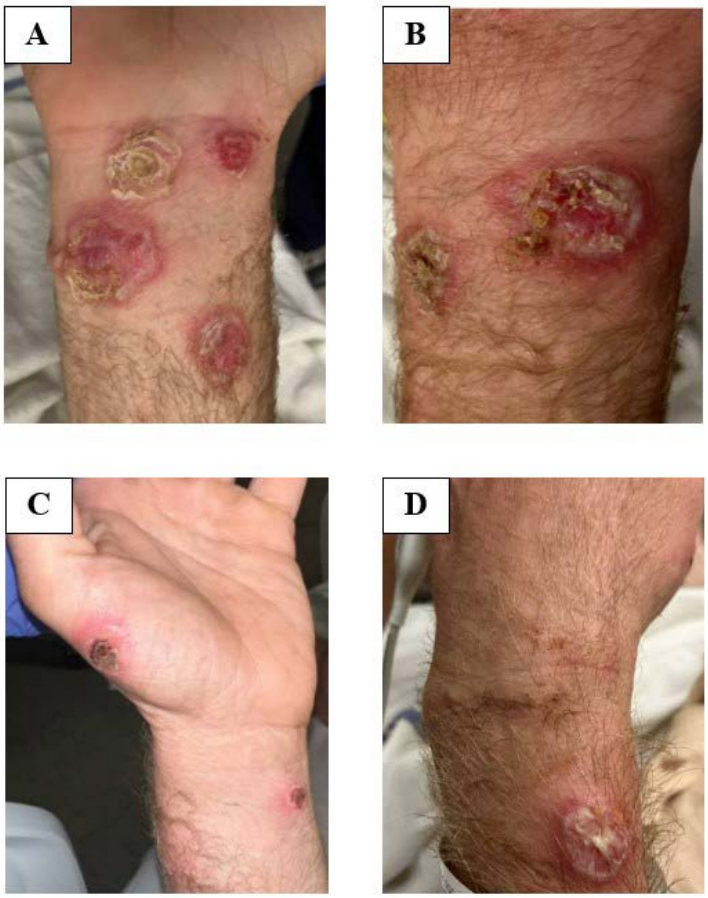

Figure 1. Upper extremity skin lesions. (A) Right ventral wrist. (B) Right dorsal wrist. (C) Left hand and ventral wrist. (D) Left dorsal wrist.

Laboratory studies showed a white blood cell count of 11.6 × 10^3/μL, an absolute neutrophil count of 7.66 × 10^3/μL, hemoglobin of 13.7 g/dL, platelet count of 383 × 10^3/μL, C-reactive protein of 3.96 mg/dL, and an erythrocyte sedimentation rate of 46 mm/hr. Testing for human immunodeficiency virus types 1 and 2 and syphilis was negative. Evaluation for endemic fungal infections, including Histoplasma urine and serum antigens, Blastomyces serum antigen, and Blastomyces antibody, also was negative.

On hospital day 1, a dermatology consultant performed a biopsy of a left forearm lesion for histopathology and culture (routine, anaerobic, and fungal). Histopathology demonstrated a neutrophil-predominant infiltrate involving the papillary dermis and epidermis, with Gram stain highlighting surface bacterial cocci. Grocott's methenamine silver and acid-fast stains were negative. Routine cultures yielded heavy growth of both methicillin-resistant *Staphylococcus aureus* (MRSA) and *Streptococcus*

Figure 2. Bilateral anterior thigh skin lesions.

Figure 3. Knee and lower leg skin lesions. (A) Left anterior knee. (B) Right lateral lower leg. (C) Left medial lower leg. (D) Left lateral lower leg.

Figure 4. Right lower ventral abdomen skin lesion.

pyogenes, anaerobic culture demonstrated light growth of *Finegoldia magna*, and fungal cultures remained negative after four weeks.

The patient was diagnosed with extensive non-bullous impetigo and treated with intravenous vancomycin during hospitalization, with clinical improvement in the skin lesions. He was discharged on hospital day 5 with oral doxycycline and amoxicillin to complete a seven-day course of antibiotic therapy.

DISCUSSION

Although impetigo classically is associated with pediatric patients, this case highlights that extensive non-bullous impetigo also can occur in adults, as previously reported.[4] Impetigo should be strongly considered in adult patients with predisposing risk factors, several of which were present in our patient. He was experiencing homelessness, a condition associated with increased risk of impetigo because of factors such as malnutrition, crowded living conditions, and limited access to hygiene resources.[5,6] Although scabies was not specifically evaluated, it is a recognized risk factor for impetigo and occurs more frequently among individuals experiencing homelessness.[2,6]

The patient also reported that another individual living in the same encampment had similar skin lesions, suggesting possible disease transmission and emphasizing the importance of obtaining a thorough social history when evaluating skin and soft tissue infections.

Although impetigo typically is a clinical diagnosis that does not require biopsy or culture, this case demonstrates the value of skin biopsy and microbiologic evaluation when the presentation is atypical or the diagnosis is uncertain. In such cases, culture results can help confirm the diagnosis and guide antimicrobial therapy, including the need for coverage against methicillin-resistant MRSA.[1,3]

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