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Chronic Painful Foot Nodules: A Case of Actinomycetoma

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Abstract

Actinomycetoma is a chronic granulomatous infection of the skin and subcutaneous tissues caused by filamentous aerobic bacteria, primarily from the Actinomadura, Nocardia, and Streptomyces genera.

In this case report, we describe a female patient with chronic painful nodules of the foot, ultimately diagnosed as actinomycetoma. This case report emphasizes the clinical, dermoscopic, and laboratory findings quite helpful for diagnosis and highlights the importance of considering this disease in chronic foot lesions, especially in regions where awareness remains low.

Enhancing clinician awareness, promoting the use of dermoscopy in infectious diseases, and developing diagnostic algorithms specific to endemic and non-endemic areas are essential to improving early detection and patient outcomes.

Keywords: Actinomycetoma, foot nodules, pain, dermoscopy

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INTRODUCTION

Actinomycetoma is a chronic granulomatous infection of the skin and subcutaneous tissues caused by filamentous aerobic bacteria, primarily from the Actinomadura, Nocardia, and Streptomyces genera. Its classic presentation is not always evident in the early stages, making diagnosis particularly challenging. Although mycetoma has been recognized by the World Health Organization as a neglected tropical disease, actinomycetoma continues to receive limited attention in both clinical and research settings (1,2,3). In this case report, we describe a female patient with chronic painful nodules of the foot, ultimately diagnosed as actinomycetoma.

CASE PRESENTATION

A 56-years-old woman was presented to the Dermatology Department with a two-years history of skin lesions localized to the right foot. The patient reported that the lesions initially appeared asymptomatic but progressed to painful nodules with intermittent serosanguineous drainage over the past few months. She had no prior significant medical history, comorbidities, or trauma to the area. On physical examination, the right foot showed multiple indurated, violaceous, hyperkeratotic nodules on a background of localized swelling (Figure 1. A, B, C). Dermoscopic examination showed erosions, yellow globules, white superficial scales and

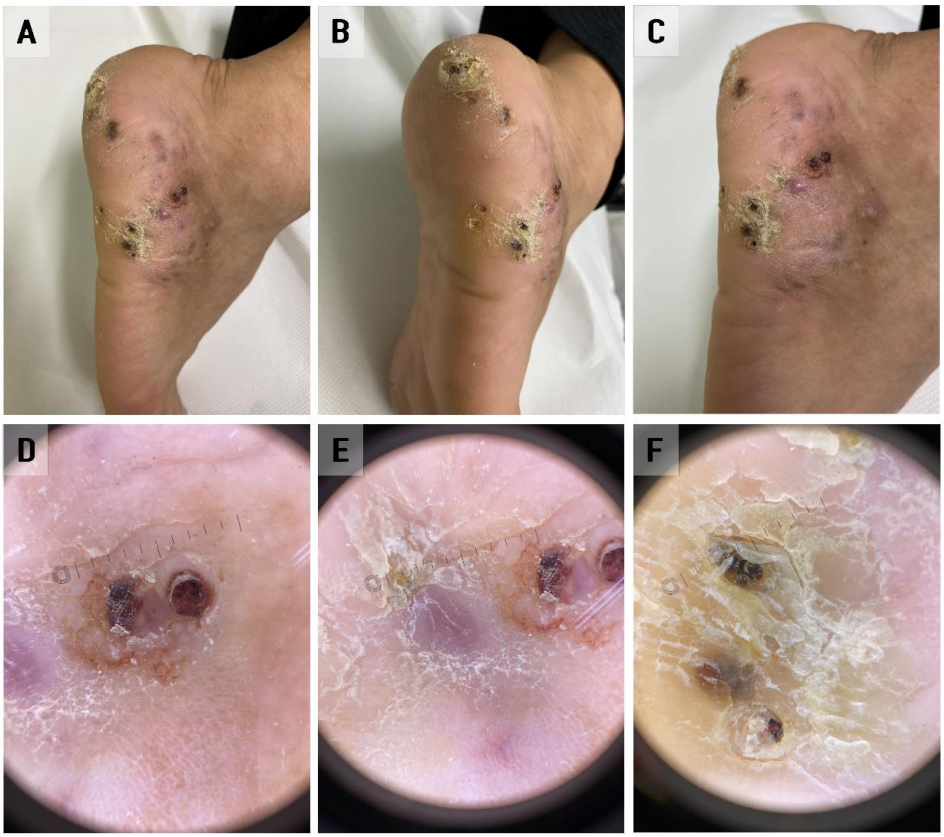

Figure 1. (A, B, C) Multiple indurated, violaceous, hyperkeratotic nodules on a background of localized swelling. (D, E, F) Dermoscopic features, including erosions, yellow globules, white superficial scales and blood spots.

blood spots (Figure 1. D, E, F). Direct microscopy of tissue samples revealed gram-positive branching filaments (Figure 2). Negative fungal cultures ruled out a fungal etiology. A punch biopsy was performed, and histopathological examination with Giemsa staining revealed granules with peripheral "clubs" and surrounding inflammatory infiltrate. These findings confirmed the diagnosis of Actinomycetoma. The patient was initiated on Doxycycline (200 mg daily) for one month and prescribed a prolonged maintenance course of Trimethoprim-Sulfamethoxazole (160/800 mg) once daily for 14 months.

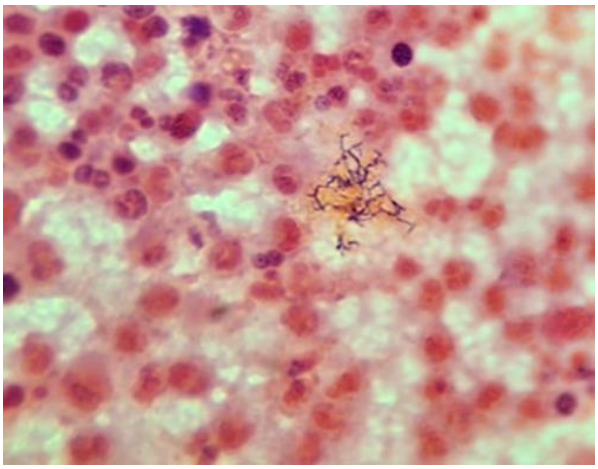

Figure 2. Direct microscopy of tissue samples revealed gram-positive branching filaments.

DISCUSSION

Actinomycetoma is a chronic subcutaneous infection caused by filamentous bacteria, primarily Actinomadura, Nocardia, and Streptomyces species. It constitutes one of the two main types of mycetoma, the other being eumycetoma, which is caused by true fungi. Clinically, actinomycetoma is characterized by a triad of painless subcutaneous nodules, sinus tract formation, and discharge containing granules (1). Despite being a well-defined clinical entity in tropical and subtropical regions, it remains a neglected condition, often underrecognized in non-endemic areas (2).

This case highlights a commonly overlooked dimension of actinomycetoma: diagnostic neglect due to non-specific presentation and low clinical suspicion, especially in urban or resource-limited settings where dermatologists may encounter it rarely.

One of the major challenges is that early-stage actinomycetoma can mimic common dermatologic conditions such as chronic eczema, plantar warts, or leishmaniasis. The absence of systemic symptoms and slow progression may further delay suspicion and targeted investigation (3). In this case, the patient experienced a year-long evolution of the lesions before definitive diagnosis, underscoring how clinical inertia and misattribution of symptoms contribute to disease chronicity.

Another neglected aspect is the limited integration of dermoscopy in the diagnostic algorithm for cutaneous infections. While dermoscopy is widely adopted in diagnosing neoplasms, its role in infectious dermatoses is still emerging. The presence of yellow globules, white scales, and blood spots observed dermoscopically in this patient provided vital clues suggestive of actinomycetoma (4). However, a standardized dermoscopic atlas or pattern recognition criteria for actinomycetoma

are currently lacking, reducing its practical utility in day-to-day diagnosis. The recognition of such dermoscopic patterns can be crucial in avoiding invasive or delayed diagnostic methods, particularly in regions where biopsy and histopathology are not readily available.

Furthermore, actinomycetoma is often grouped under the broader umbrella of mycetomas without a clear emphasis on the distinct therapeutic implications between its actinomycotic and eumycotic forms. While bacterial mycetoma responds well to antibiotics—as seen in our patient—eumycetoma typically requires prolonged antifungal therapy and sometimes surgery. Radiology helps to detect if there is any bone destruction. Multidisciplinary treatment is necessary in some cases. Misclassification can thus lead to inappropriate therapy and poorer outcomes (5,6).

Finally, the psychosocial and functional burden of untreated or late-treated actinomycetoma is underappreciated. Progressive tissue destruction, chronic pain, and deformity can significantly impair mobility, self-care, quality of life, and activity to work. Despite this, actinomycetoma remains absent from many public health agendas and dermatologic training programs (7).

CONCLUSIONS

In conclusion, this case draws attention to the neglected diagnostic, therapeutic, and educational dimensions of actinomycetoma. It emphasizes the clinical, dermoscopic, and laboratory findings quite helpful for diagnosis and highlights the importance of considering this disease in chronic foot lesions, especially in regions where awareness remains low.

Enhancing clinician awareness, promoting the use of dermoscopy in infectious diseases, and developing diagnostic algorithms specific to endemic and non-endemic areas are essential to improving early detection and patient outcomes.

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