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Case Report

The Emergence of Tertiary Syphilis with Extensive Scalp Involvement: A Case Report

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Abstract

We report the case of a 47-year-old man who presented with extensive scalp lesions of approximately 1-year duration. Clinical examination revealed multiple erythematous, papular, pustular, crusted, and hyperpigmented lesions distributed across the scalp. Based on the clinical presentation and diagnostic evaluation, the patient was diagnosed with tertiary cutaneous syphilis with extensive scalp involvement. Appropriate serological investigations confirmed the diagnosis, and the patient received stage-appropriate treatment according to standard management recommendations. At follow-up, the scalp lesions improved clinically. This case highlights the importance of considering syphilis in the differential diagnosis of extensive and atypical scalp lesions. It emphasizes the need for appropriate serological confirmation and evaluation for systemic involvement.

Introduction

Syphilis is a sexually transmitted systemic infection caused by the spirochete *Treponema pallidum*. The infection has a variable clinical course and is traditionally classified into primary, secondary, latent, and tertiary stages [1,2]. Primary syphilis usually presents with a chancre at the site of inoculation, whereas secondary syphilis may produce generalized mucocutaneous manifestations, lymphadenopathy, and systemic symptoms [1,3]. Following the secondary stage, infection may enter a latent phase in which the patient has no obvious clinical manifestations. Without adequate treatment, some infected individuals may later develop complications involving the cardiovascular system, nervous system, or skin [2,4]. Tertiary syphilis is now relatively uncommon in settings where effective antimicrobial therapy is available, but it remains clinically important because its manifestations may be severe and diagnostically challenging. Cutaneous tertiary syphilis can manifest as nodules, plaques, noduloulcerative lesions, or gummas. These lesions may be destructive and may heal with scarring [4,5]. Because of their variable morphology, they can resemble inflammatory, infectious, granulomatous, or neoplastic disorders. Consequently, clinical examination alone may not be sufficient to establish the diagnosis [3,6]. Scalp involvement in late syphilis is unusual. Cutaneous lesions in this location may initially be interpreted as bacterial folliculitis, fungal infection, inflammatory follicular disease, or other dermatological conditions. A documented case of tertiary syphilitic gumma involving the scalp demonstrates that late syphilis should remain within the differential diagnosis of unusual scalp lesions [9]. We present a case of tertiary cutaneous syphilis presenting with extensive scalp involvement. This case report was prepared in accordance with the CARE (Case Report) guidelines [12].

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Case Presentation

A 47-year-old man presented to Aesthetic Line, Islamabad, Pakistan, with multiple scalp lesions of approximately 1-year duration. The lesions had progressively increased in number and extent, involving a large portion of the scalp. On physical examination, extensive multifocal lesions were observed over the scalp. The lesions consisted of numerous erythematous-to-hyper pigmented papules and pustular/crusted lesions with areas of inflammatory change.

Figure 1. Close-up clinical appearance of the scalp lesions.



Close-up view demonstrating the morphology of the scalp lesions.

Figure 2. Overall distribution and extent of lesions over the scalp.



Frontal/top view showing the extent and distribution of lesions over the scalp.

Figure 3. Posterior/occipital involvement.



Posterior view demonstrating involvement of the occipital scalp.

Discussion

Tertiary syphilis represents a late manifestation of infection with *T. pallidum*. Unlike the relatively recognizable manifestations of primary and secondary syphilis, late disease can produce variable clinical findings and may involve multiple organ systems [7]. Tertiary disease is broadly associated with cardiovascular, neurological, and gummatous manifestations, and patients require appropriate assessment for systemic involvement. Cutaneous tertiary syphilis is uncommon in the antibiotic era. Gummatous disease may present as nodules or plaques that subsequently undergo necrosis and ulceration, potentially resulting in permanent scarring [8]. The variable morphology of these lesions can make clinical diagnosis difficult, particularly when the lesions occur at unusual anatomical sites. The scalp is an uncommon location for extensive cutaneous syphilitic disease. Terada et al. described a case of cutaneous tertiary syphilitic gumma involving the scalp, emphasizing that late syphilis can produce localized lesions in this region [9]. Syphilitic alopecia is another recognized scalp manifestation and may present with patchy or diffuse hair loss [10]. In the present case, the extensive scalp involvement and multiple papular, pustular, and crusted lesions create a broad differential diagnosis. Conditions such as bacterial folliculitis, fungal infection, inflammatory follicular disorders, psoriasis, and other infectious dermatoses may produce overlapping clinical findings. Syphilis should therefore be considered when lesions are atypical, persistent, progressive, or unresponsive to conventional therapy [8,11]. Serological testing remains fundamental to the diagnosis of syphilis. Both nontreponemal and treponemal tests are generally used because they provide complementary diagnostic information [11]. Nontreponemal tests such as RPR and VDRL are also useful for monitoring treatment response. Treponemal tests, including TPPA and TPHA, provide evidence of infection but generally remain reactive after infection. The distinction between secondary and tertiary syphilis is particularly important in a case such as this. Extensive cutaneous lesions alone do not establish tertiary disease. The final classification should be supported by the patient's documented clinical history, serological findings, examination, and investigations for neurological or systemic disease. Where tertiary syphilis is suspected, appropriate evaluation for neurosyphilis and other organ involvement should be undertaken according to the clinical presentation [7]. Treatment depends on the stage of disease and the presence or absence of neurological involvement. Patients with confirmed tertiary syphilis without evidence of neurosyphilis are generally treated with an appropriate prolonged penicillin regimen, while neurosyphilis requires a different treatment

approach [7]. Follow-up is important to document clinical improvement and monitor serological response. The present case is clinically relevant because of the unusual and extensive scalp presentation. The photographs demonstrate the distribution and morphology of the lesions, while the diagnosis should be supported by the patient's laboratory and clinical findings. Recognition of this uncommon presentation may help clinicians include syphilis in the differential diagnosis of atypical scalp disease.

Conclusions

Tertiary syphilis may produce unusual cutaneous manifestations and can present as extensive scalp disease. Because the clinical appearance may overlap with several infectious and inflammatory dermatological conditions, syphilis should be considered in patients with persistent or atypical scalp lesions. Appropriate serological testing, assessment for systemic involvement, and stage-specific treatment are essential for accurate diagnosis and management.

Declarations

Competing Interests

The author declares no competing interests.

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Author Contributions

Syed Mussarat Hussain & Liaqat Ali conceived the case report, contributed to the patient's clinical evaluation and management, reviewed the clinical photographs and literature, drafted and revised the manuscript, and approved the final version.

Data Availability

Data are available from the corresponding author upon reasonable request, subject to patient confidentiality and institutional requirements.

Consent for Publication: The patient provided written informed consent for publication of the case report and accompanying clinical photographs.

Ethics Approval and Consent to Participate: Formal ethical approval was not required for this single-case report under the policy of Aesthetic Line, Islamabad, Pakistan.

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