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Visual Diagnosis Pearl

Atypical Secondary Syphilis Without Palmoplantar Involvement: A Diagnostic Pitfall

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CASE PRESENTATION

A 32-year-old Caucasian male presented for an annual examination with concern for a persistent, nonpruritic rash on his chest that had been present for six months. During this period, he had sought care at multiple urgent care facilities, where he was diagnosed with allergic dermatitis and eczema. He was treated with antihistamines, oral prednisone, and topical corticosteroids without resolution. The rash fluctuated in intensity, at times partially fading and at other times worsening. He could not identify specific triggers but noted transient improvement with oral corticosteroids.

During review of systems, the patient mentioned a small, non-healing lesion beneath his tongue that developed several months earlier after accidentally biting the area. The lesion was painless and had not prompted medical evaluation prior to this visit. He denied fevers, chills, weight loss, joint pain, neurological symptoms, or gastrointestinal complaints. His past medical history was notable for a remote, treated episode of *Chlamydia trachomatis* infection. Family history was noncontributory. He reported one female sexual partner and denied tobacco, alcohol, or recreational drug use. He had no known drug allergies and was not taking routine medications.

Vital signs were within normal limits, including blood pressure of 112/79 mm Hg, heart rate of 69 beats per minute, temperature of 98°F, and body mass index of 27.4 kg/m². Physical examination revealed an erythematous maculopapular rash confined to the anterior chest, with an asymmetric, patchy distribution and a smooth to faintly raised texture (Figure 1). No lesions were observed on the extremities, palms, or soles. Oral examination revealed a shallow, 5-mm white-gray ulcer on the ventral surface of the tongue. There was no cervical or inguinal lymphadenopathy, no genital lesions, and no focal neurological deficits.

Initial laboratory evaluation, including a complete blood count and comprehensive metabolic panel, was unremarkable. Given the chronic rash and accompanying oral lesion, a sexually transmitted disease screening panel was obtained. The rapid plasma reagin (RPR) test was reactive, with confirmatory treponemal testing (TP-PA) also positive. Quantitative RPR titer was >1:1024. Testing for *Neisseria gonorrhoeae*, *Chlamydia trachomatis*, and human immunodeficiency virus (HIV) was negative.

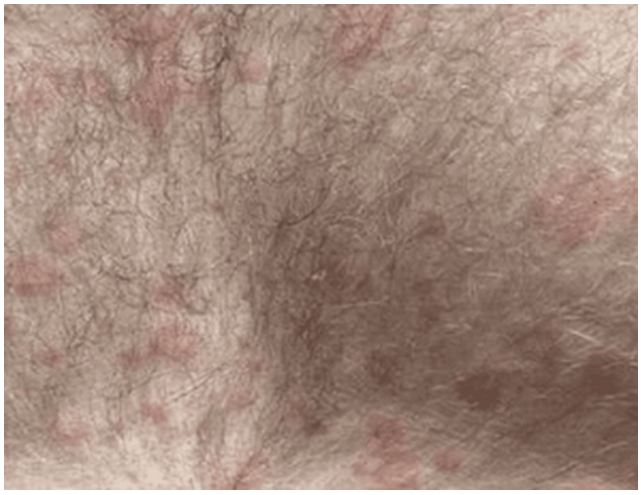

Figure 1. Maculopapular rash on chest

The patient was diagnosed with secondary syphilis and reported to the local health department. He received a single intramuscular dose of benzathine penicillin G (2.4 million units). At six-month follow-up, the chest rash and oral lesion had resolved. Repeat serologic testing showed a persistent reactive RPR with a decreased titer of 1:128, representing a three-dilution (eightfold) decline, consistent with an appropriate serologic response to therapy.

DISCUSSION

Secondary syphilis represents the systemic phase of *Treponema pallidum* infection, occurring weeks to months after the primary chancre and resulting from hematogenous dissemination. It has long been referred to as "the great imitator" due to its wide range of clinical manifestations that mimic numerous dermatologic and systemic conditions.[1] When presentations are atypical, diagnosis may be delayed, particularly in fragmented healthcare settings where patients are seen by multiple providers. This case illustrates such a diagnostic challenge and highlights important clinical and public health implications.

The rash of secondary syphilis is classically described as a symmetric, diffuse maculopapular eruption involving the trunk and extremities, with characteristic involvement of the palms and soles.[1] However, variants may be subtle or limited in distribution and are easily mistaken for com-

mon dermatologic conditions such as eczema or allergic dermatitis. In this case, the localized truncal distribution without palmoplantar involvement likely contributed to repeated misdiagnosis. The absence of systemic symptoms or a known history of primary chancre further lowered clinical suspicion.

Corticosteroid therapy likely compounded diagnostic delay. Both topical and systemic corticosteroids can transiently suppress the inflammatory response to *T. pallidum*, leading to partial or temporary improvement in skin findings. This false appearance of response may reinforce incorrect diagnoses while allowing disease progression. Additionally, the patient's prior history of chlamydial infection is clinically relevant. A history of sexually transmitted infection should prompt consideration of additional infections when new, unexplained findings arise, as coinfection with chlamydia or gonorrhea is common among patients with early syphilis.[1]

Ultimately, the oral lesion provided a critical diagnostic clue. Mucous patches occur in up to 30% of patients with secondary syphilis and present as shallow, gray-white erosions on oral or genital mucosal surfaces.[2] These lesions are highly infectious yet frequently overlooked due to their painless nature and nonspecific appearance, often being misattributed to aphthous ulcers or minor trauma. Recent case series suggest that oral lesions may occasionally be the initial or sole manifestation of syphilis, increasing the risk of delayed diagnosis if not recognized.[2]

From a public health standpoint, secondary syphilis is highly infectious, and delayed diagnosis substantially increases the risk of onward transmission. This patient's multiple clinical encounters represented missed opportunities for earlier screening. Emerging evidence indicates that opt-out syphilis screening in emergency department settings significantly improves case detection, with one study demonstrating a 288% increase in diagnosed cases.[3] Extending similar screening strategies to urgent care settings may help reduce missed diagnoses in increasingly fragmented care environments.

This case underscores the importance of maintaining a broad differential diagnosis when evaluating persistent or unexplained dermatologic findings. Even in the absence of classic features such as palmoplantar involvement, clinicians should maintain a low threshold for syphilis testing, particularly in patients with mucosal lesions or prior sexually transmitted infections. Early recognition remains essential to reduce morbidity and prevent ongoing transmission.

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