

Cutaneous Eruption in an Immunocompromised Patient

Hesham Alshaikh, MD; Ahmad Aleisa, MD; Jessica Forcucci, MD

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A 29-year-old Black man with long-standing untreated HIV presented with mildly pruritic, scaly plaques on the palms and soles of 2 weeks' duration. His medical history was notable for primary syphilis treated approximately 1 year prior. A review of symptoms was positive for blurry vision and floaters but negative for constitutional symptoms. Physical examination revealed well-defined scaly plaques over the palms, soles, and elbows with subungual hyperkeratosis. Patches of nonscarring alopecia over the scalp and split papules at the oral commissures also were noted. There were no palpable lymph nodes or genital involvement. Eye examination showed conjunctival injection and 20 cells per field

in the vitreous humor. Laboratory evaluation revealed an HIV viral load of 31,623 copies/mL and a CD4 count of 47 cells/ μ L (reference range, 362–1531 cells/ μ L). A shave biopsy of the left elbow was performed for histopathologic evaluation.

WHAT'S YOUR DIAGNOSIS?

- crusted scabies
- pityriasis rubra pilaris
- psoriasis
- sarcoidosis
- secondary syphilis

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From the Medical University of South Carolina, Charleston. Dr. Alshaikh is from the Department of Dermatology and Dermatologic Surgery, and Drs. Aleisa and Forcucci are from the Department of Pathology and Laboratory Medicine.

The authors report no conflict of interest.

Correspondence: Hesham Alshaikh, MD, Department of Dermatology and Dermatologic Surgery, Medical University of South Carolina, 135 Rutledge Ave, MSC 578, Charleston, SC 29425-5780 (Alshaikh@musc.edu).

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THE DIAGNOSIS: Secondary Syphilis

Histopathology revealed a lichenoid interface dermatitis with psoriasiform hyperplasia (Figure 1A). A single spirochete was identified using immunohistochemical staining (Figure 1B). Laboratory workup revealed positive IgG and IgM treponemal antibodies and reactive rapid plasma reagin titer of 1:2048. A VDRL test performed on a cerebrospinal fluid specimen also was reactive at 1:8. A diagnosis of secondary syphilis with neurologic involvement was made, and the patient was treated with intravenous penicillin G for 14 days. Following treatment, his rapid plasma reagin decreased 4-fold with an improvement in his ocular and cutaneous symptoms.

Mucocutaneous manifestations of secondary syphilis are multitudinous. As in our patient, the classic presentation is a generalized morbilliform and papulosquamous eruption involving the palms (Figure 2) and soles. Split papules at the oral commissures, mucosal patches, and condyloma lata are the characteristic mucosal lesions of secondary syphilis.¹ Patchy non-scarring alopecia is not uncommon and can be the only manifestation of secondary syphilis.² The histopathologic features of secondary syphilis vary depending on the location and type of the skin eruption. Psoriasiform or lichenoid changes commonly occur in the epidermis and dermoepidermal junction.³ The dermal inflammatory patterns that have been described include granulomatous, nodular, and superficial and deep perivascular inflammation. The infiltrate often is composed of lymphocytes, plasma cells, and histocytes. Reactive endothelial cells and perineural plasma cell infiltrates also are common histologic features.^{3,4} Spirochetes can be identified in most cases using immunohistochemical staining; however, the absence of spirochetes does not exclude syphilis.³ The sensitivity of immunohistochemical staining in secondary syphilis is reported to be 71% to 100% with a very high specificity.⁵ The treatment for all stages of syphilis is benzathine penicillin G, and the route of administration and duration of treatment depend on the stage of disease.⁶

A broad differential diagnosis must be considered when encountering skin eruptions in patients with HIV. Psoriasis usually presents as circumscribed erythematous plaques with dry and silvery scaling and a predilection for the extensor surfaces of the limbs, sacrum, scalp, and nails. Nail manifestations include distal onycholysis, irregular pitting, oil spots, salmon patches, and subungual hyperkeratosis. Alopecia occasionally may be seen within scalp lesions⁷; however, the constellation of alopecia with a moth-eaten appearance, subungual hyperkeratosis, papulosquamous eruption, and split papules was more suggestive of secondary syphilis in our patient. In

immunocompromised patients, crusted scabies can be considered for the diagnosis of papulosquamous eruptions involving the palms and soles. It often presents with symmetric, mildly pruritic, psoriasiform dermatitis that favors acral sites, but widespread involvement can be observed.⁸ Areas of the scalp and face can be affected in infants, elderly patients, and immunocompromised individuals. Unlike in secondary syphilis, patchy alopecia, split papules, and ocular symptoms typically are not observed in scabies.

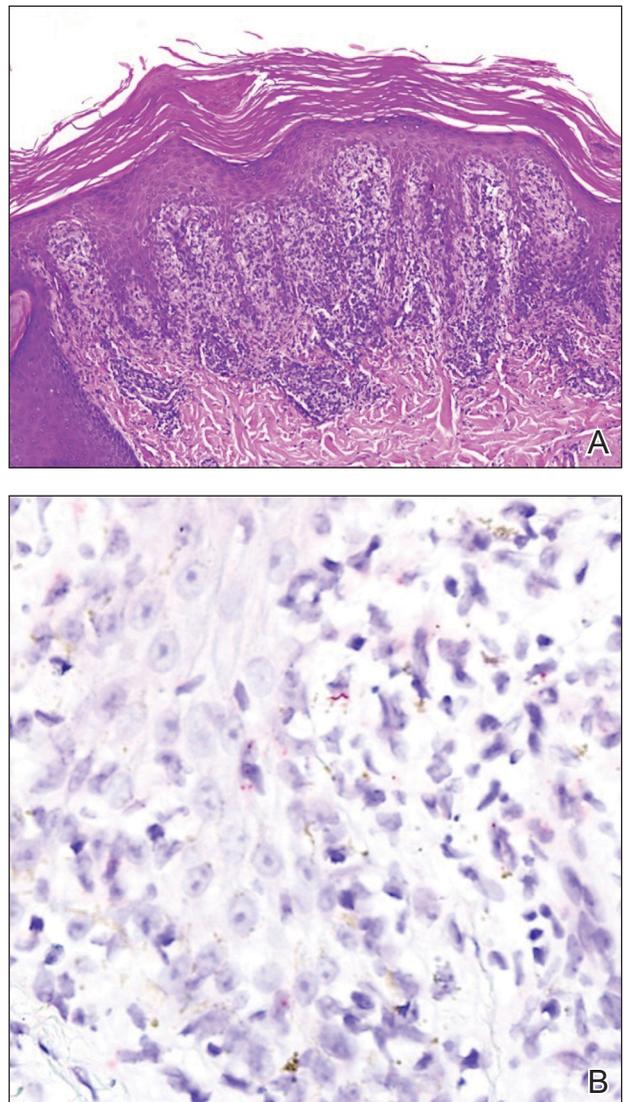


FIGURE 1. A, Histopathology demonstrated an interface dermatitis with psoriasiform hyperplasia and overlying parakeratosis (H&E, original magnification $\times 100$). B, *Treponema pallidum* immunohistochemical stain highlighted a single spirochete (original magnification $\times 400$).



FIGURE 2. Well-defined, erythematous, scaly plaques on the palms with nail thickening and subungual hyperkeratosis.

Sarcoidosis is common in Black individuals, and similar to syphilis, it is considered a great imitator of other dermatologic diseases. Frequently, it presents as red-violaceous papules, nodules, or plaques; however, rare variants including psoriasiform, ichthyosiform, verrucous, and lichenoid skin eruptions can occur. Nail dystrophy, split papules, and alopecia also have been observed.⁹ Ocular involvement is common and frequently presents as uveitis.¹⁰ The pathologic hallmark of sarcoidosis is noncaseating granulomatous inflammation, which also may occur in syphilitic lesions⁹; however, a papulosquamous eruption involving the palms and soles, positive serology, and the finding of interface lichenoid dermatitis with psoriasiform hyperplasia confirmed the diagnosis of secondary syphilis in our patient.

Pityriasis rubra pilaris is a rare papulosquamous disorder that can be associated with HIV (type VI/HIV-associated follicular syndrome). It presents with generalized red-orange keratotic papules and often is associated with acne conglobata, hidradenitis suppurativa, and lichen spinulosus.¹¹ Unlike in secondary syphilis, patchy alopecia, split papules, and ocular symptoms typically are not observed in pityriasis rubra pilaris.

This case highlights many classical findings of secondary syphilis and demonstrates that, while helpful, routine skin biopsy may not be required. Treatment should be guided by clinical presentation and serologic testing while reserving skin biopsy for equivocal cases.

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