# Secondary Syphilis Mimicking Molluscum Contagiosum in the Beard Area of an AIDS Patient

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PRACTICE **POINTS**

- Recognize typical and atypical presentations of secondary syphilis (SS).
- This case reinforces the importance of cutaneous biopsies in immunocompromised patients.
- Consider the possibility of autoinoculation in SS.

To the Editor:

A 46-year-old man with a history of AIDS (viral load, 28,186 copies/mL; CD4 count, 22 cells/µL) presented with a 40-lb weight loss over the last 6 months as well as dysphagia and a new-onset pruritic facial eruption of 1 week's duration. The facial lesions quickly spread to involve the beard area and the upper neck. His medical history was notable for nicotine dependence, seborrheic dermatitis, molluscum contagiosum (MC), treated neurosyphilis and latent tuberculosis, hypertension, a liver mass suspected to be a hemangioma, and erythrocytosis. He was diagnosed with human immunodeficiency virus infection 19 years prior to presentation and was not compliant with the prescribed highly active antiretroviral therapy.

Skin examination revealed multiple discrete and coalescing, 2- to 12-mm, nonumbilicated, hyperkeratotic papules and nodules localized to the left and right beard areas (Figure 1A). A few discrete, 2- to 5-mm, umbilicated papules were noted in the right beard area (Figure 1B), as well as on the right side of the neck (Figure 1C), buttocks, and legs. Mild erythema with yellow-white scale was present in the alar creases. Examination of the oropharyngeal mucosa revealed multiple thick white plaques that were easily scraped off with a tongue depressor. Examination of the palms, soles, and anogenital areas was normal.

A punch biopsy of a nonumbilicated hyperkeratotic papule from the left beard area demonstrated spongiosis; neutrophilic microabscess formation; plasma cells; and a superficial and deep perivascular, predominantly lymphohistiocytic infiltrate (Figure 2A). Spirochete immunohistochemical staining of tissue highlighted abundant organisms in the dermoepidermal junction and vascular endothelial cells (Figure 2B). Other tissue stains for bacteria, including acid-fast bacilli, and fungi were negative. Bacterial culture of tissue from the lesion in the left beard area grew *Staphylococcus aureus*. Results of acid-fast and fungal cultures of tissue were negative. Shave biopsy of the umbilicated papule on the right side of the neck demonstrated classic invagination of the epidermis into the dermis and intracytoplasmic viral inclusions consistent with MC (Figure 2C). Spirochete immunohistochemical staining of the same tissue sample was negative (Figure 2D).

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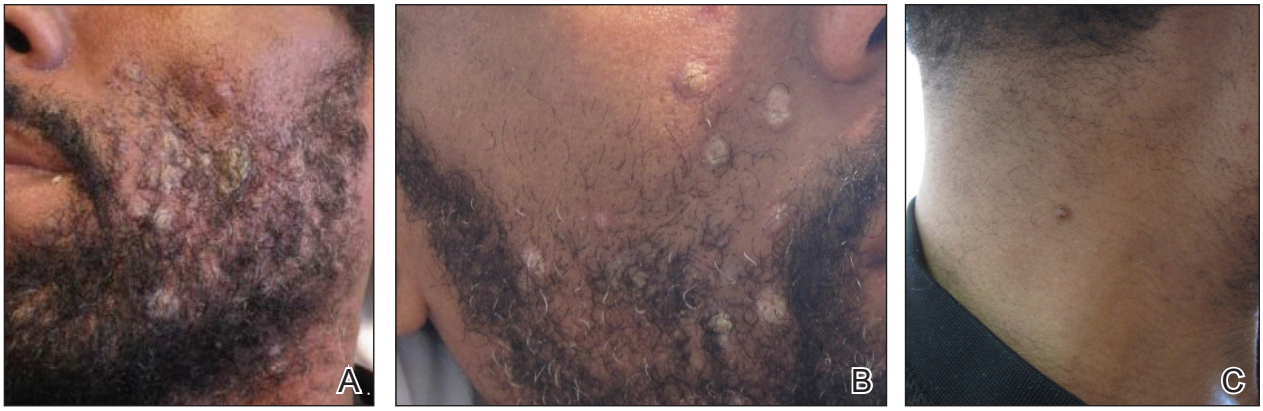


**FIGURE 1.** A, Grouped, hyperkeratotic, nonumbilicated papules and nodules on the left beard area. B, Rare umbilicated papules were noted in the right beard area. C, An umbilicated papule also was observed on the right side of the neck.

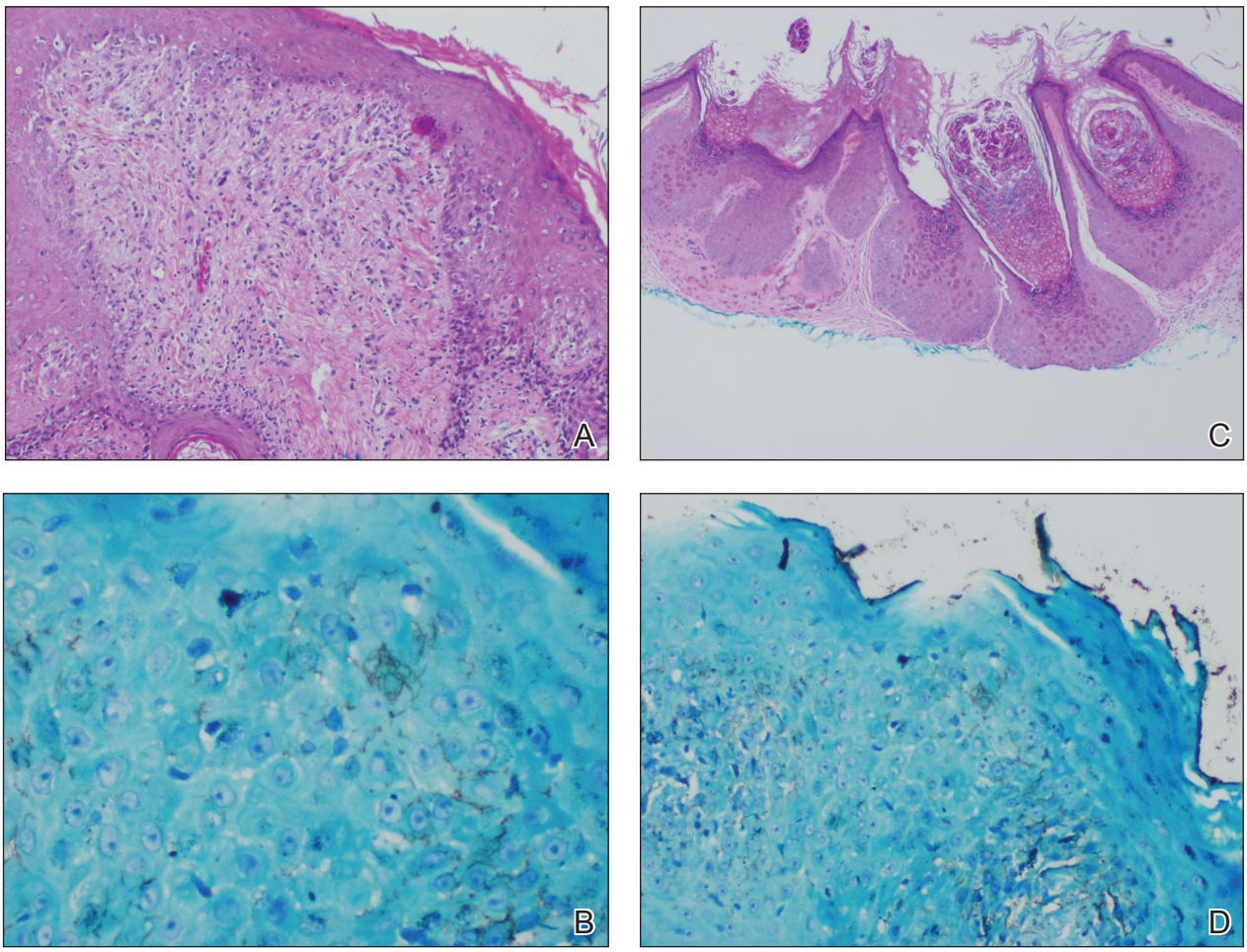


**FIGURE 2.** A, A punch biopsy of a lesion from the left beard area demonstrated spongiosis; neutrophilic microabscess formation; plasma cells; and a superficial and deep perivascular, predominantly lymphohistiocytic infiltrate (H&E, original magnification ×100). B, Spirochete immunohistochemical staining of tissue highlighted abundant organisms in the dermoepidermal junction and vascular endothelial cells (H&E, original magnification ×400). C, Shave biopsy of the umbilicated papule on the right side of the neck demonstrated classic invagination of the epidermis into the dermis and intracytoplasmic viral inclusions consistent with molluscum contagiosum (H&E, original magnification ×40). D, Spirochete immunohistochemical staining of the umbilicated papule on the right side of the neck was negative (original magnification ×200).

Serum rapid plasma reagin was reactive with a titer of 1:128 compared to the last known reactive rapid plasma reagin titer of 1:1 five years prior to presentation. A fluorescent treponemal antibody absorption test and VDRL test of cerebrospinal fluid was nonreactive. Fungal, bacterial, and acid-fast cultures of cerebral spinal fluid and a cryptococcal antigen test were negative. Serum cryptococcal antigen and coccidioides complement fixation tests were negative. Cytomegalovirus plasma polymerase chain reaction and urine histoplasma antigen testing were negative. Computed tomography of the chest revealed a new 1.9×1.6×2.1-$cm^3$ cavitary lesion with distal tree-in-bud opacities in the lingula of the left lung. Acid-fast blood culture was negative, and acid-fast sputum culture was positive for *Mycobacterium kansasii*.

The cutaneous pathology findings and serologic findings confirmed the diagnoses of cutaneous secondary syphilis (SS) in the beard area and MC on the right side of the neck. Clinical diagnoses of seborrheic dermatitis of the alar creases and esophageal candidiasis also were made. The patient was treated with intramuscular penicillin G 2.4 million U once weekly for 3 weeks. The lesions confined to the beard area rapidly resolved within 7 days after the first dose of antibiotics, which further supported the diagnosis of localized cutaneous SS. Fluconazole 100 mg once daily was prescribed for the esophageal candidiasis, and he also was started on a regimen of rifampin 600 mg once daily, isoniazid 300 mg once daily, ethambutol 1200 mg once daily, and pyrazinamide 1500 mg once daily.

Syphilis is well known as the great masquerader due to its many possible manifestations. Many patients present with typical palmar and plantar dermatoses.[1] Other documented SS presentations include eruptions ranging from a few to diffusely disseminated maculopapular lesions with or without scale on the trunk and upper extremities; pustular and nodular lesions of the face; alopecia; grayish white patches on the oral mucosa; and ulcerative, psoriasiform, follicular, and lichenoid lesions.[2] Cutaneous SS has not been commonly reported in a localized distribution to the beard area with a clinical appearance mimicking hyperkeratotic MC lesions.[3] Secondary syphilis is not known to spread through autoinoculation, presumably from shaving (as in our case), as might occur with other cutaneous infectious processes such as MC, verruca vulgaris, *S aureus*, and dermatophytosis in the beard area.

The differential diagnosis for hyperkeratotic papules and nodules localized to the beard area in human immunodeficiency virus–infected males includes MC, verruca vulgaris, chronic verrucous varicella-zoster virus, crusted scabies, tuberculosis verrucosa cutis, hypertrophic lichen planus, and disseminated deep fungal infections including cryptococcosis and coccidioidomycosis. In the setting of immunosuppression, the diagnosis of hyperkeratotic MC was favored in our patient given the co-location of classic umbilicated MC lesions with the hyperkeratotic papules and nodules. It is common to see MC autoinoculated in the beard area in men from shaving, as well as for MC to present in an atypical manner, particularly as hyperkeratotic lesions, in patients with AIDS.[4] The predominant localized beard distribution and lack of other mucocutaneous manifestations of SS at presentation supported a clinical diagnosis of hyperkeratotic MC in our patient.

Unique presentations of SS have been documented, including nodular lesions of the face, but they typically have been accompanied by other stigmata of SS such as the classic palmoplantar or truncal maculopapular rash.[3] One notable difference in our case was the localized beard distribution of the syphilitic cutaneous lesions in a man with AIDS. Our case reinforces the importance of cutaneous biopsies in immunocompromised patients. It is known that SS spreads hematogenously; however, in our case it was suspected that the new lesions may have spread locally through autoinoculation via beard hair removal, as the hyperkeratotic lesions were limited to the beard area. Koebnerization secondary to trauma induced by beard hair removal was considered in this case; however, koebnerization is known to occur in noninfectious dermatologic conditions, such as psoriasis, lichen planus, lichen nitidus, and vitiligo, but not in infections such as syphilis. Our case is pivotal in raising the question of whether SS can be autoinoculated in the beard area.

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