

Kaposi Sarcoma Presenting as Yellow-Green Penile Plaques in a Black Man With HIV

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Kaposi sarcoma characteristically presents with violaceous papules, plaques, or nodules due to the vascular nature of the lesions. We present the case of a human immunodeficiency virus (HIV)-positive black man with yellow-green penile plaques. Biopsy results revealed leukoedema and slitlike vascular spaces. Immunohistochemistry was positive for CD31 and CD34. He was treated with highly active antiretroviral therapy (HAART) and the penile plaques improved. Localized yellow-green penile plaques are an uncommon presentation of the well-known clinical entity, Kaposi sarcoma. This case underscores the varied clinical presentations that can occur in skin of color and the importance of histopathology in the assessment of uncharacteristic clinical presentations, especially in immunosuppressed patients.

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Case Report

A 56-year-old black man who reported having sex with men presented with growing yellow-green and white lesions on his penis of 3 months' duration. His symptoms included a mild tingling sensation and occasional urgency. His medical history was remarkable for primary syphilis 1 year prior and human immunodeficiency virus (HIV). A detailed history of the patient's sexual practices was not obtained.

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His medications had included highly active antiretroviral therapy (HAART), which was discontinued 5 months prior to development of the lesions. The patient could not recall his original HIV treatment regimen. His outside medical records were requested but not received. He discontinued his original HIV treatment because he was depressed and lost interest in his health.

Physical examination revealed numerous yellow-green and white indurated plaques on the glans penis, coronal sulcus, and penile shaft (Figure 1). He had no other lesions at the time of presentation and no lymphadenopathy. Workup demonstrated a CD4 lymphocyte count less than 15 cells/ μ L and an HIV-1 viral load of 122,000 copies/mL. The differential diagnosis based on the clinical examination included malacoplakia, *Pseudomonas* infection, and chloroma. Results of a skin biopsy specimen from a yellow-green penile plaque on the glans penis and



Figure 1. The glans penis and coronal sulcus demonstrated yellow-green and white plaques prior to treatment with highly active antiretroviral therapy. White arrows indicate the affected areas.

coronal sulcus revealed leukoedema in the epidermis (Figure 2A) and a spindle cell proliferation in the dermis with slitlike vascular spaces (Figures 2B and 2C). The spindle cells were immunohistochemically positive for CD31 and CD34, supporting the diagnosis of Kaposi sarcoma. Special stains including periodic acid–Schiff, Dieterle, and Brown-Brenn stain were negative for microorganisms. Hence, the unusual color did not reflect superinfection with organisms such as *Pseudomonas*. The patient was treated with HAART including lopinavir, ritonavir, lamivudine, and tenofovir disoproxil fumarate. Two months after reinitiating HAART, a single violaceous nodule developed on the right medial foot. His HIV-1 viral load at that time was 83,800 copies/mL and his CD4 count was less than 11 cells/ μ L. The lesions were completely resolved 8 months after reinitiating therapy.

Comment

Kaposi sarcoma characteristically presents with violaceous papules, plaques, or nodules due to the vascular nature of the lesions. It is an uncommon multifocal neoplastic process primarily affecting the skin of acral sites; however, isolated or localized disease of the penis has been described.¹ Isolated penile Kaposi sarcoma has been described in both the immunocompetent and immunosuppressed population.^{2,3} It typically presents as red or purple papules or plaques with a predilection for the glans penis and coronal sulcus.^{4,6} Local surgical excision, radiotherapy, chemotherapy, and laser therapy have been used to treat localized Kaposi sarcoma involving the penis.⁶ In our patient, the multifocal nature of his disease made surgery impractical and his response to HAART obviated the need for radiotherapy or chemotherapy. Complications of penile Kaposi sarcoma include involvement of additional sites, penile congestion and lymphedema, ulceration, and concurrent or coinfection with other organisms.^{3,7-9} Together, these findings underscore the importance of a comprehensive examination as well as a thorough histopathologic assessment to exclude other concurrent dermatoses such as infections, especially in the immunosuppressed population.

The unique features of this case include the yellow-green color of the affected lesions, the absence of the characteristic violaceous hue, and the presence of marked leukoedema seen on the initial histopathology. The leukoedema may be secondary to lymphatic congestion, as has been described for other cases of penile Kaposi sarcoma.⁹ We speculate that the leukoedema coupled with the dermal vascular proliferation on black skin produced a Tyndall-like effect, which may explain the unique color of our patient's lesions.

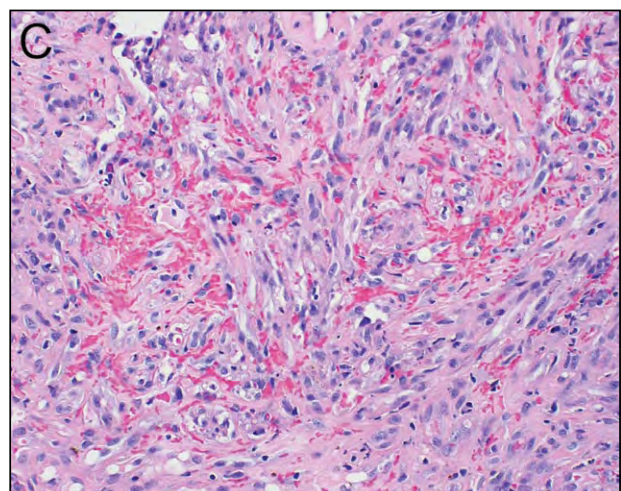
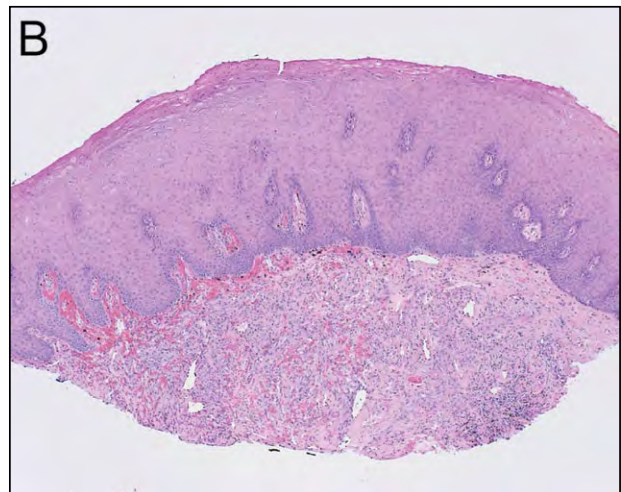
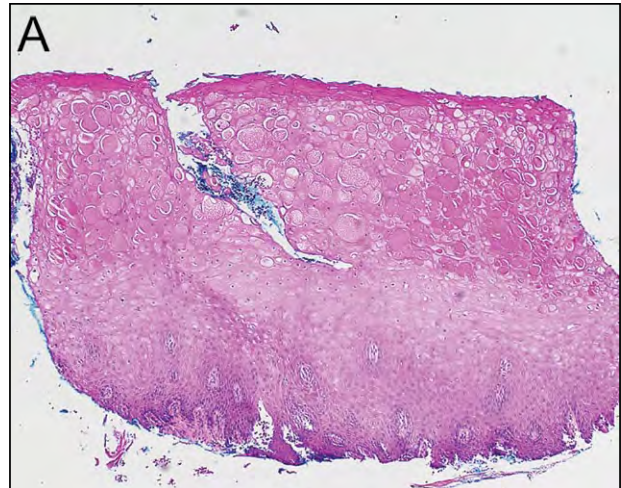


Figure 2. Histopathology of a yellow-green plaque prior to treatment revealed leukoedema involving the epidermis (A)(H&E, original magnification $\times 10$). Slitlike vascular spaces also were appreciated (B and C)(H&E; original magnifications $\times 4$ and $\times 20$, respectively).

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