A warty lesion on the penis

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DERMPATH QUIZ

An 86-year-old, married male patient presented to his dermatologist with several grouped verrucous plaques on his glans penis of unknown duration [Figure 1]. Lesions were associated with pruritis and a localized "burning" sensation. There was no prior history of condyloma acuminata. The patient was immunocompetent, and denied repetitive trauma, toxin exposure, or known sexually transmitted infections in the past. No other skin lesions were present elsewhere, including the oropharynx, plantar feet, and perianal skin. A shave biopsy was performed of a representative lesion on the glans penis [Figures 2-4].

Figure 1: Multiple, fungating, exophytic, verrucous plaques on the penis

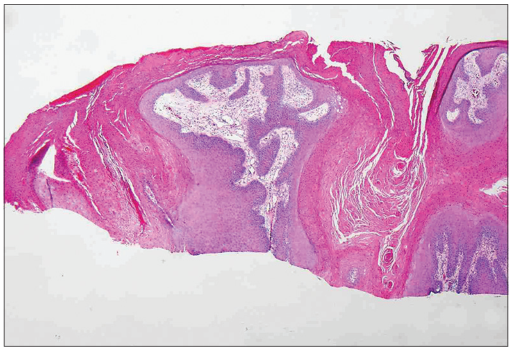

Figure 3: H and E, ×100

The squamous proliferation most likely represents:

A. Condyloma accuminatum
B. Erythroplasia of Queyrat
C. Verrucous carcinoma
D. Bowenoid papulosis

ANSWER

C. Verrucous carcinoma

DISCUSSION

Verrucous carcinoma was originally described in the oral cavity,[1] but now encompasses a spectrum of clinical conditions, including epithelioma cuniculatum (verrucous carcinoma occurring on the plantar foot), oral florid papillomatosis (oral cavity), and Buschke–Lowenstein tumor (anogenital skin).[2] Given their clinical and histologic similarities, all verrucous carcinomas regardless of site are now considered a common entity.

Early lesions begin as verrucous papules that slowly enlarge and become increasingly

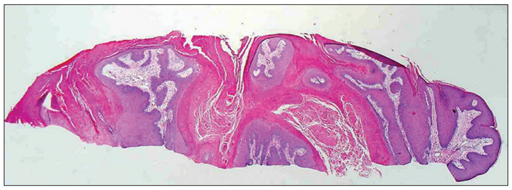

Figure 2: H and E, ×20

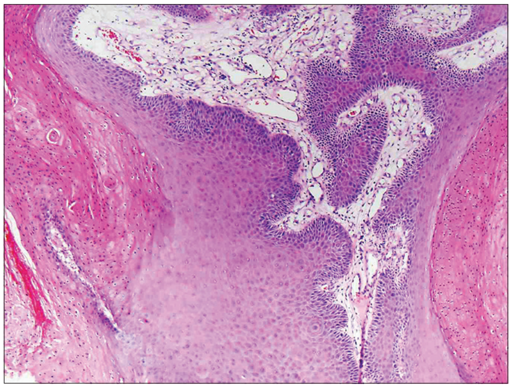

Figure 4: H and E, ×200

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exophytic. Older lesions grow to several centimeters, appear cauliflower-like, and develop foul-smelling purulent discharge.[3,4] These plaques are often ulcerated and tender. Unlike condyloma acuminata, penile verrucous carcinoma demonstrates local invasion and an increased risk for recurrence. Histologic evaluation is therefore necessary to distinguish verrucous carcinoma from condyloma acuminata. Human papillomavirus (HPV), particularly "low-risk" subtypes HPV 6 and 11, has been implicated in development. Chronic irritation, lack of circumcision, phimosis, poor hygiene, and chemical exposure have also been implicated.[5-7] Recurrences are common;[8] however, spread to distant lymph nodes is rare and metastatic potential is exceedingly low.[9] Although lacking cytologic features of malignancy, verrucous carcinomas can demonstrate clinically aggressive behavior with expansile growth to several centimeters and local destruction of surrounding tissue.

The treatment of choice is surgical excision with preservation of as much tissue as possible.[10] Conservative treatment modalities such as Mohs surgery may be helpful, but cryosurgery, electrocautery, and CO_2 laser resection should be avoided given the high rates of recurrence and suboptimal disease control. No large controlled trials have been performed.

Lesions that may mimic verrucous carcinoma clinically include condyloma acuminatum, erythroplasia of Queyrat, and bowenoid papulosis (BP). Histopathologically, verrucous carcinoma shows a characteristic growth pattern with blunt undulating papillary projections of well-differentiated squamous epithelium that "pushes" (rather than infiltrates) the dermis underneath.[2] Condyloma acuminatum shares an association with low-risk types of HPV but lacks invasion into underlying structures. BP presents with papular lesions that demonstrate a histological spectrum from that of condyloma with buckshot atypical cells to full-thickness windblown atypia. In contrast to verrucous carcinoma, BP is associated with "high-risk" HPV subtypes. Erythroplasia of Queyrat presents as a velvety to verrucous patch with full-thickness loss of orderly maturation, high-grade atypia, and mitoses in contrast to verrucous carcinoma, which is well differentiated and classified as a low-grade variant of squamous cell carcinoma.[11]

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