Brown Papules on the Penis

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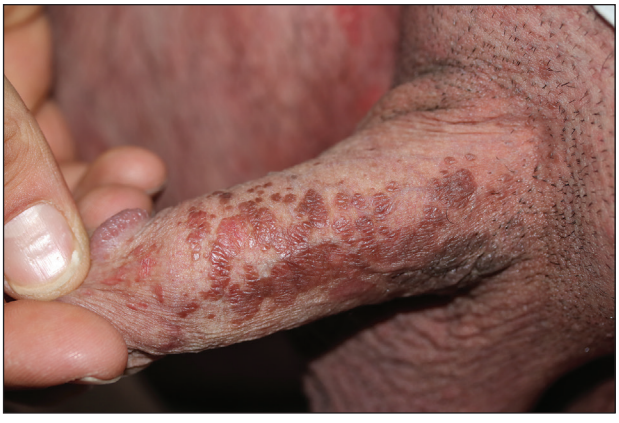

A 32-year-old man presented to the outpatient clinic with reddish brown lesions on the penis of 5 months' duration. Dermatologic examination revealed multiple mildly infiltrated, bright reddish brown papules and plaques on the dorsal penis.

WHAT'S THE **DIAGNOSIS?**

a. bowenoid papulosis
b. penile lentigo
c. penile melanosis
d. pigmented condyloma acuminatum
e. seborrheic keratosis

PLEASE TURN TO PAGE 152 FOR THE DIAGNOSIS

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The authors report no conflict of interest.
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THE **DIAGNOSIS:** Bowenoid Papulosis

A 4-mm punch biopsy was performed from the active border of brown plaques on the dorsal penis. Histopathology revealed parakeratotic hyperkeratosis, acanthosis, loss of maturation in epithelium, and full-size atypia (Figure 1). Ki-67 index was 90% positive in the epidermis (Figure 2). Staining for p16 and human papillomavirus (HPV) screening was positive for HPV type 16 (Figure 3). Serologic tests for other sexually transmitted infections were negative. A diagnosis of penile bowenoid papulosis (BP) with grade 3 penile intraepithelial neoplasia was made, and treatment with topical 5-fluorouracil (5-FU) was initiated. Almost total regression was appreciated at 1-month follow-up (Figure 4), and he also was recurrence free at 1-year follow-up.

Penile intraepithelial neoplasia (PIN), or penile squamous cell carcinoma in situ, is a rare disease with high morbidity and mortality rates. Clinically, PIN is comprised of a clinical spectrum including 3 different entities: erythroplasia of Queyrat, Bowen disease, and BP.[1] Histologically, PIN also is classified into 3 subtypes according to histological depth of epidermal atypia.[1]

Bowenoid papulosis usually is characterized by multiple red-brown or flesh-colored papules that most commonly appear on the shaft or glans of the penis. Bowenoid papulosis frequently is associated with high-risk types of HPV, such as HPV type 16, and is sometimes difficult to differentiate clinically from pigmented condyloma acuminatum. The clinical lesions of BP usually are less papillomatous, smoother topped, more polymorphic, and more coalescent compared to common genital viral condyloma acuminatum.[2] Bowenoid papulosis usually is seen in young (<30 years of age) sexually active men, unlike the patches or plaques of erythroplasia of Queyrat or Bowen disease, which are seen in older men aged 45 to 75 years. Bowenoid papulosis also has a lower malignancy potential than erythroplasia of Queyrat and Bowen disease.[2]

Penile melanosis, penile lentigo, and seborrheic keratosis comprise the differential diagnosis of dark spots on the penis and also should be kept in mind. Penile melanosis is the most common cause of dark spots on the penis. When the dark spots have irregular borders and change in color, they may be misdiagnosed as malignant lesions such as melanoma.[3] In most cases, biopsy is indicated. Histologically, penile melanosis is characterized by hyperpigmentation of the basal cell layer with no melanocytic hyperplasia. Treatment is unnecessary in most cases.

Penile lentigo presents as small flat pigmented spots on the penile skin with clearly defined margins surrounded by normal-appearing skin. Histologically, it is

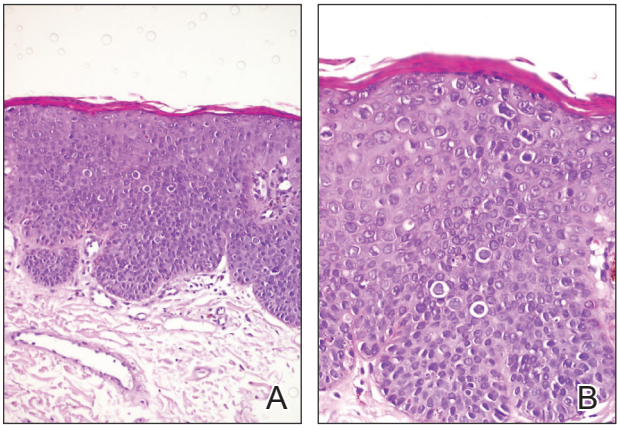

FIGURE 1. Histopathology showed parakeratotic hyperkeratosis and acanthosis (A) as well as loss of maturation in epithelium and full-size atypia in the epidermis (B)(H&E, original magnifications ×200 and ×400).

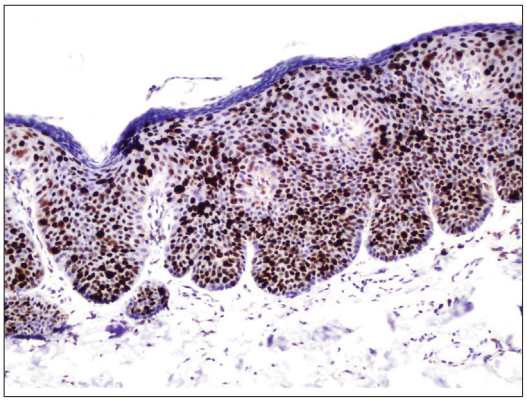

FIGURE 2. Ki-67 index staining was 90% positive in the epidermis (original magnification ×200).

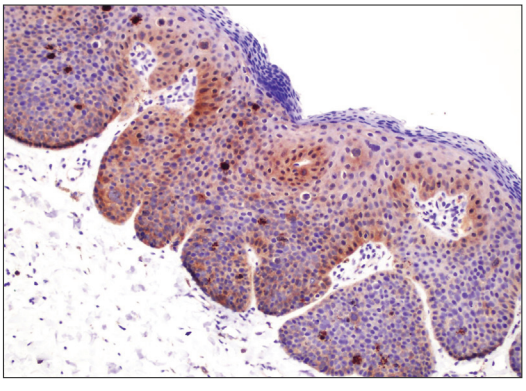

FIGURE 3. Staining for p16 and human papillomavirus screening was positive for human papillomavirus type 16 (original magnification ×200).

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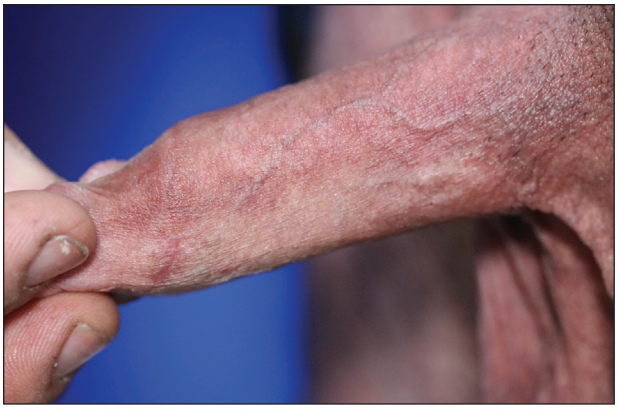

FIGURE 4. Almost total regression was noted at 1-month follow-up.

characterized by hyperplasia of melanocytes above the basement membrane of the epidermis.[3]

Penile pigmented seborrheic keratosis is a rare clinical entity that can be easily misinterpreted as condyloma acuminatum. Histologically, it is characterized by basal cell hyperplasia with cystic formation in the thickened epidermis. Excisional biopsy may be the only way to rule out malignant disease.

Treatment options for PIN include cryotherapy, CO_2 or Nd:YAG lasers, photodynamic therapy, topical 5-FU or imiquimod therapy, and surgical excision such as Mohs micrographic surgery.[4-9] Although these therapeutic modalities usually are effective, recurrence is common.[6] The patients' discomfort and poor cosmetic and functional outcomes from the surgical removal of lesions also present a challenge in treatment planning.

In our patient, we quickly achieved a good result with topical 5-FU, though the disease was in local advanced stage. It is important for clinicians to consider 5-FU as an effective treatment option for PIN before planning surgery.

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