

Figure 21-16 Condyloma acuminatum of the penis. Low magnification reveals the papillary (villous) architecture and thickening of the epidermis.

Peyronie Disease

This disorder results in fibrous bands involving the corpus cavernosum of the penis. Although some classify it as a variant of fibromatosis, its etiology remains an enigma. Clinically, the lesion results in penile curvature and pain during intercourse.

Malignant Tumors

Carcinoma in Situ (CIS)

In the external male genitalia, two distinct lesions display histologic features of CIS: Bowen disease and Bowenoid papulosis. These lesions have a strong association with infection by high-risk HPV, most commonly type 16.

- *Bowen disease* occurs in the genital region of both men and women, usually in those older than age 35 years. In men it tends to involve the skin of the shaft of the penis and the scrotum. Grossly it appears as a solitary, thickened, gray-white, opaque plaque. It can also manifest on the glans and prepuce as single or multiple shiny red,

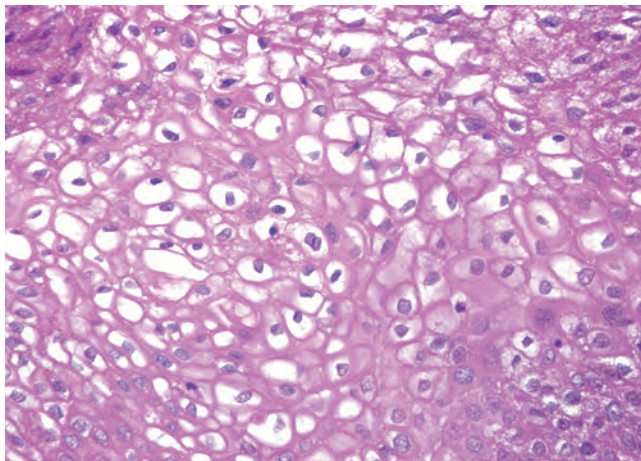


Figure 21-17 Condyloma acuminatum of the penis. The epithelium shows vacuolization (koilocytosis) characteristic of human papillomavirus infection.

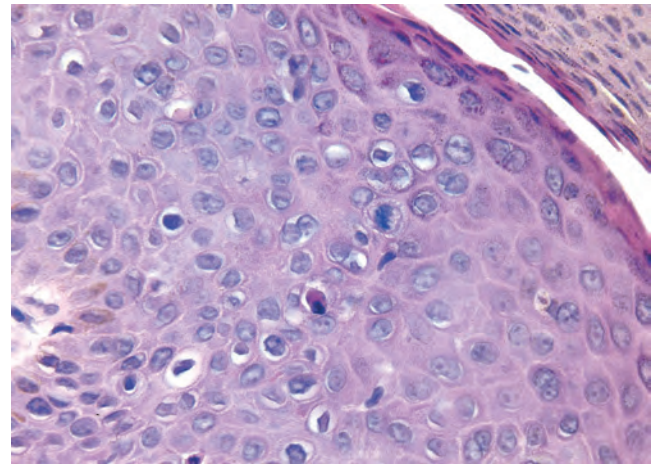


Figure 21-18 Bowen disease (carcinoma in situ) of the penis. Note the hyperchromatic, dysplastic dyskeratotic epithelial cells with scattered mitoses above the basal layer. The intact basement membrane is not readily seen in this picture.

sometimes velvety plaques. Histologically the epidermis is hyperproliferative, containing numerous mitoses, some atypical. The cells are markedly dysplastic with large hyperchromatic nuclei and lack of orderly maturation (Fig. 21-18). Nevertheless, the dermal-epidermal border is sharply delineated by an intact basement membrane. Bowen disease transforms into infiltrating squamous cell carcinoma in approximately 10% of patients, usually over a span of many years.

- *Bowenoid papulosis* occurs in sexually active adults. It is distinguished from Bowen disease by the younger age of affected patients and its presentation as multiple (rather than solitary) reddish brown papular lesions. Although Bowenoid papulosis is histologically indistinguishable from Bowen disease and is also related to HPV type 16, it virtually never develops into an invasive carcinoma and in many cases regresses spontaneously.

Invasive Carcinoma

Squamous cell carcinoma of the penis is associated with poor genital hygiene and with high-risk HPV infection. Carcinomas are usually found in patients between the ages of 40 and 70 years. It accounts for less than 1% of cancers in males in the United States. In contrast, in some parts of Asia, Africa, and South America, squamous cell carcinoma of the penis makes up from 10% to 20% of male malignancies. Circumcision confers protection, and hence this cancer is extremely rare among Jews and Muslims and is correspondingly more common in populations in which circumcision is not practiced routinely. It is postulated that circumcision reduces exposure to carcinogens that may be concentrated in smegma and decreases the likelihood of infection with potentially oncogenic types of HPV. HPV DNA can be detected in penile squamous cancer in approximately 50% of patients. HPV type 16 is the most frequent culprit, but HPV 18 is also implicated. The recent availability of a vaccine to both the low-risk (6, 11) and high-risk (16, 18) subtypes of HPV may help reduce the incidence of this tumor, as well as condyloma acuminatum. Cigarette smoking also elevates the risk of developing penile cancer.