

Common penile lesions: tips to the differential

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ABSTRACT Penile lesions are always a cause for intense concern—and embarrassment—for the patient, who may therefore delay seeking medical attention. The differential diagnosis ranges from benign conditions to those that currently have no cure. The history and appearance are keys to the diagnosis: the authors review the many clinical images and provide practical diagnostic tips as well as treatment updates.

The patient who comes to you for evaluation of a penile lesion is probably anxious, embarrassed, and afraid. No doubt, one of his biggest worries is whether he has contracted a sexually transmitted infection and, if so, has he infected his partner? As his primary care physician, you may or may not be able to identify the underlying disorder and prescribe proper treatment. However, one of the most important aspects of your role is to be sensitive to the probable mental state of your patient by being nonjudgmental and committed to helping him.

The history

Your first step is to review aspects of the patient's history, specifically questioning him about recent sexual exposures, recent travels, hygienic habits, whether the lesion is pruritic or painful, and about the possible preexistence of other skin disorders.

When considering the factors that may play a role in the development of a penile lesion, some physicians may consider the issue of circumcision to be a very important one. There are mixed opinions as to the benefits and disadvantages of circumcision, with some, including the authors, believing that uncircumcised men are at a greater risk than circumcised men for many conditions that cause penile lesions.

Questions to consider

After taking a thorough history, carefully examine the lesion and note its characteristics. Ask yourself the following questions to try to describe it visually. What color is it? Where is it located? Is it inflamed or atrophic? This method can help narrow the differential diagnosis of common causes of penile lesions to reach the proper diagnosis.

Treatment considerations

Because of the large number of penile lesions that are responsive to treatment with topical corticosteroids, remember that the genital skin is thinner than other areas on the body, and that foreskin, acting as an occlusive, can

Practice Tips

- Be sensitive to the delicate mental state of the patient who presents with a penile lesion.
- Take a thorough history, focusing on recent sexual exposures, recent travels, hygienic habits, whether the lesion is pruritic or painful, and the possible preexistence of other skin disorders.
- As a general rule, when prescribing steroids for the treatment of penile lesions use only low-potency topical steroids.

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FIGURE 1



Zoon's balanitis

The signs of Zoon's balanitis include oozing erythematous patches or plaques on the glans.

FIGURE 2



Lichen sclerosis

Lichen sclerosis lesions can be slightly depressed, atrophic, and hypopigmented.

FIGURE 3



Lichen planus

Polygonal, shiny, flat-topped papules which are erythematous to violet in color, are Lichen planus lesions.

on the glans and/or on the inner surface of the prepuce of uncircumcised men.¹ Zoon's balanitis is a largely asymptomatic condition, although mild itching can occur, so it is not unusual for a patient to have this condition anywhere from a few weeks to a few years before seeking medical care. Treatment consists of mild topical corticosteroids, such as class VI and VII agents. Recurrences may be common. Because in situ squamous-cell carcinoma can have a very similar clinical presentation, resistant lesions should be biopsied.

Zoon's balanitis is a largely asymptomatic condition so it is common for a patient to have this condition anywhere from a few weeks to a few years before seeking medical care.

Lichen sclerosis

Lichen sclerosis (LS) is an atrophic condition of unknown cause. Much more common in women than in men, LS is seldom found on parts of the body other than the genitals. Lesions which often evolve over years, can be flat, slightly raised or slightly depressed, and are usually pink or hypopigmented (Figure 2). Although commonly asymptomatic, symptoms can include pruritus, dysuria, painful erections, decreased sensation of the glans, and decreased caliber of the urinary stream. Malignant transformation has also been reported in penile LS.²⁻³ Advancing and refractory cases should be referred to a dermatologist.

End-stage LS, known as balanitis xerotica obliterans, is identified by a thickened, contracted prepuce that cannot be manually retracted over the glans. In this situa-

naturally enhance penetration of corticosteroids topically applied to the glans. Exercise caution when prescribing these drugs; use of an inappropriately potent steroid can have adverse effects, including atrophy, striae, and telangiectasias. As a general rule, when prescribing steroids for the treatment of penile lesions (with the exception of lichen sclerosis, see discussion below) use only low-potency topical steroids, such as hydrocortisone 1% and 2.5% (class VII) and desonide or admetasone dipropionate (class VI).

Zoon's balanitis

This common benign inflammatory condition is also known as plasma cell balanitis, balanitis circumscripita plasmacellularis, or plasma cell mucositis. The clinical signs (Figure 1) include oozing erythematous patches or plaques

FIGURE 4

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Lichen planus

Genital lichen planus can also take annular or erosive forms.

tion, referral to a dermatologist can expedite diagnosis.

No effective treatment is available, although topical application of ultra-potent steroids (Class I), such as clobetasol propionate or halobetasol propionate, early in the disease may partially reverse the sclerotic component.

Lichen planus

A common inflammatory condition, lichen planus (LP) can affect mucous membranes, skin, and nails; it is a benign disease with remissions and exacerbations. As seen in Figure 3, LP lesions are polygonal, shiny, flat-topped papules that are faintly erythematous to violet in color. A fine whitish, reticulated scale referred to as Wickham's striae (Figure 4) can be seen on the surface of LP lesions. The annular and erosive genital LP are uncommon variants. Typical penile LP is asymptomatic and commonly resolves with residual hyperpigmentation while erosive LP can be painful and persist for many years. Low-potency topical steroid creams can be beneficial. The classic form of LP is thought to be idiopathic whereas other forms are associated with drugs (eg, allopurinol, ACE inhibitors, NSAIDs). The differential diagnosis of the classic idiopathic type of penile LP includes psoriasis, and for the erosive variant the differential diagnosis includes plasma cell balanitis, erythroplasia of Queyrat, and a fixed drug eruption.

Psoriasis

The penis is a common location for psoriasis (Figure 5), and, in some cases, it is the sole area of involvement. Psoriatic lesions on the penis are typically red, scaly,

FIGURE 5

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Psoriasis

The penis is a common location for erythematous, scaly, psoriatic plaques.

papules or raised plaques on the glans and/or shaft, with the exception of uncircumcised men who often lack the scale when lesions are located on the glans. Psoriatic patches on other body parts usually facilitate the diagnosis. Supportive findings include red scaly plaques on the elbows, knees, gluteal cleft, scalp and periumbilicus, as well as so-called oil-drop spots (yellowish subungual spots on the fingers and toes) and pitting of the nail plates. Treatment for penile lesions—which can take weeks to improve—consists of low-potency topical steroids. Penile psoriasis is marked by exacerbations and remissions, so new lesions are likely to develop.

Balanitis circinata

Balanitis circinata is a penile rash that is the most common cutaneous finding in Reiter's syndrome (a characteristic clinical triad consisting of arthritis, urethritis, and conjunctivitis). The disease occurs mostly in young men with HLA-B27 haplotype. A well-demarcated erosion with a slightly raised border is the sign of balanitis circinata. The cutaneous findings can be exaggerated in HIV-associated Reiter's syndrome. Distinction between Reiter's

syndrome and psoriasis can sometimes be extraordinarily difficult, because the similarity in clinical presentation and histological findings may lead us to the wrong diagnosis. The treatment includes antiinflammatory agents, and immunoregulatory or immunomodulatory agents.

Psoriatic lesions on the penis are typically red, scaly, papules or raised plaques on the glans and/or shaft.

FIGURE 6



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Fixed drug eruption

Hyperpigmented patches, like this one found on the glans, are a result of fixed drug eruptions.

FIGURE 8



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Scabies

The signs of scabies can include crusted papulonodules on the glans, shaft, and scrotum.

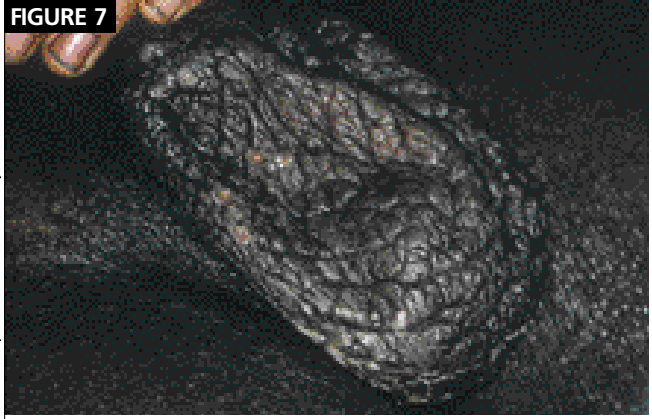
Fixed drug eruption

This condition is a localized response to a systemic medication. These genital lesions frequently begin as solitary or multiple blisters that erode or ulcerate and eventually become a hyperpigmented patch (Figure 6). Lesions tend to recur in the same site if there is reexposure to the offending medication. Drugs known to cause these eruptions include NSAIDs, sulfonamides, phenolphthalein, tetracycline, and barbiturates. The only treatment for fixed drug eruption is discontinued use of the offending drug, although a drug with similar indications can be prescribed.

Lichen simplex chronicus

Repetitive rubbing or scratching of the scrotal skin can result in lichen simplex chronicus, which leads to the

FIGURE 7



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Lichen simplex chronicus

Chronic scratching of the scrotal skin results in lichen simplex chronicus, which results in the thickening and accentuating of the scrotal rugae.

thickening and accentuation of the scrotal rugae (Figure 7). A pruritic condition may have initiated the process, but persistent habitual scratching creates a vicious itch–scratch–itch cycle. Treatment is directed toward breaking this cycle with systemic antihistamines. With proper treatment, the physical changes will resolve.

Scabies

The signs of scabies are pruritic papules, vesicles, crusts, or nodules on the glans and shaft (Figure 8), caused by the scabies mite, *Sarcoptes scabiei*. If penile lesions are seen in the setting of severe pruritus and a dermatosis elsewhere on the body, there is usually a scabetic infestation. Papules or erosions on the finger webs, wrists, axillary folds, popliteal fossae, waistband area, and knees can aid the diagnosis.

A definitive diagnosis can be made with microscopic visualization of the mite, ova, or fecal material. Scabies can be spread through sexual contact as well as other types of contact such as shared towelings or bedding.

First-line treatment is with topical permethrin cream (Elimite®) 5%, which is applied at bedtime and washed off in the morning. A single application is often sufficient; a second application a week later will increase the clearance rate in severe infestations (as in patients with HIV or other immunocompromised conditions).

Secondary bacterial infection is common in scabetic infestations and can be treated with systemic antibiotics. A significant amount of residual itching can last weeks to months after treatment, but an oral antihistamine or a low-potency topical steroid can offer relief. Persistent

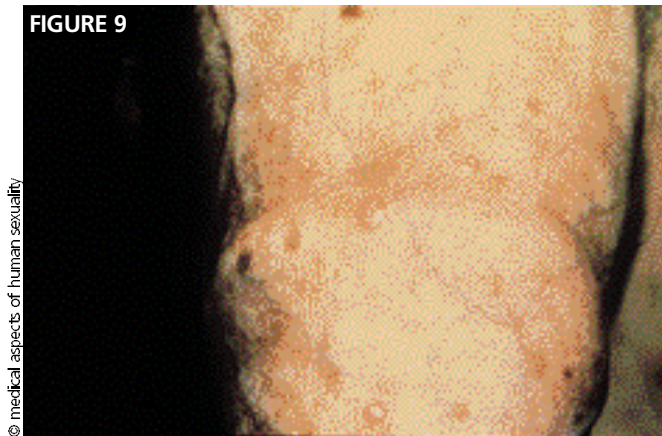


FIGURE 9

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Molluscum contagiosum

Molluscum contagiosum is typically asymptomatic, but mild itching along with dome-shaped umbilicated papules, can occur.



FIGURE 10

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Condyloma

Penile condyloma, the most common sexually transmitted disease, is identified by papules and plaques which have a pebbled surface and are often the same color as the surrounding skin.

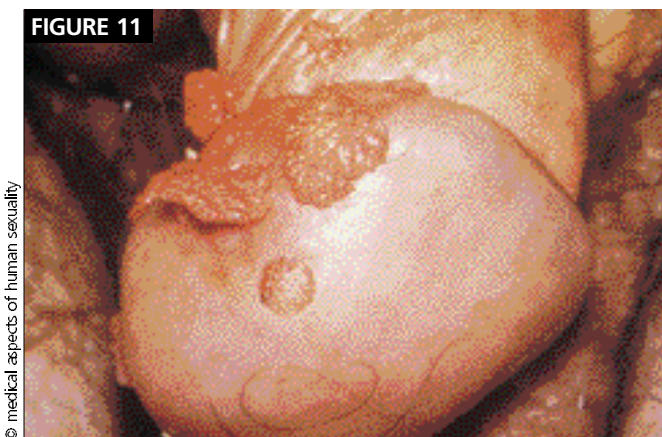


FIGURE 11

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Condyloma

Large condyloma lesions can become pedunculated and cauliflower-like.



FIGURE 12

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Pearly penile papules

Pearly penile papules, a common asymptomatic condition, are identified by 2-3 mm colored, dome-shaped papules around the coronal sulcus.

penile lesions can become violaceous and papulonodular. It is important to address and if needed treat anyone who may have been exposed to prevent reinfection.

Molluscum contagiosum

Molluscum contagiosum is a common infection caused by poxvirus. It is typically asymptomatic, but mild itching is not unusual; visible signs include the dome-shaped umbilicated papules shown in Figure 9. An eczematous dermatitis may surround the lesions resulting from the associated pruritus. Genital lesions often arise from sexual contact; however, molluscum contagiosum can also be spread by autoinoculation, result-

ing in a more linear distribution of lesions. Diagnosis can be confirmed noninvasively by expressing the papule contents and performing a Giemsa stain. Treatment options include cryotherapy with liquid nitrogen, physical removal with a sharp curette, and chemical ablation. Once eradicated, molluscum rarely recurs.

Condyloma

Penile condyloma is the most common sexually transmitted disease. Most condyloma are caused by human papillomavirus (HPV) types 6 and 11. Interestingly, most of the cases of genital HPV infection are subclinical.⁴ Penile condyloma (Figure 10) appear as papules and plaques that have a pebbled surface and are often the same color as the surrounding skin. Large le-

FIGURE 13



Follicular cysts

These dome-shaped subcutaneous papules or nodules are follicular cysts.

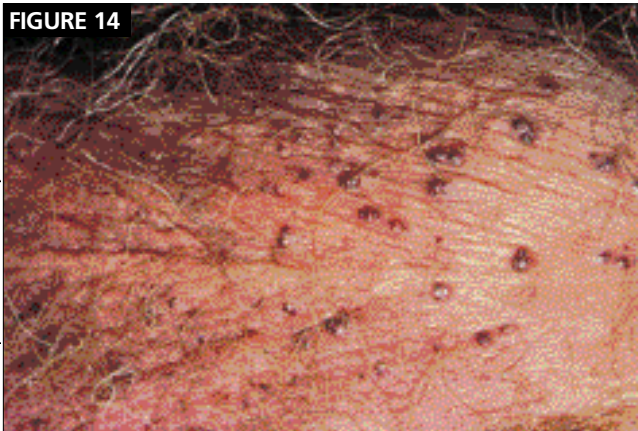
FIGURE 15



Squamous-cell carcinoma

This moist, friable, exophytic plaque involving the meatus and inferior glans is squamous cell carcinoma.

FIGURE 14



Angiokeratomas of Fordyce

These violaceous, dome-shaped papules on the scrotum are indicative of angiokeratomas of Fordyce.

FIGURE 16



Erythroplasia of Queyrat

Erythroplasia of Queyrat, an in situ carcinoma, appears as a solitary, glistening, erosive plaque.

sions, such as those in Figure 11, may become pedunculated and cauliflowerlike, occurring on any surface of the penis, including the urethra. If large condyloma are present, it may be beneficial to surgically debulk prior to topical treatment. Condyloma therapies include liquid nitrogen cryosurgery, podophyllin (10-25%), podofilox (Condylox®) (0.5%), trichloroacetic acid, imiquimod cream (Aldara®), intralesional interferon, CO2 laser, and cold steel excision. The partner of a man with condyloma should be evaluated, as an associated oncogenic HPV strain can predispose to the development of cervical cancer⁵ or to anal carcinoma.⁶

Benign conditions

Pearly penile papules. This common, asymptomatic form of angiofibroma of unknown etiology is clinically marked by rows of white-pink, 1- to 2-mm papules located around the coronal sulcus, as shown in Figure 12. They are often not noticed by the patient and require no treatment. However, penile papules are often mis-

taken, by both patients and physicians, for condyloma acuminatum. No medical treatment is warranted.

Follicular cysts. Figure 13 shows follicular cysts that are dome-shaped subcutaneous papules or nodules that arise from the hair follicles on the scrotum and less commonly on the penis. Also known as epidermal inclusion cysts and steatocystomas, follicular cysts are benign cystic lesions. Although no treatment is warranted, they do not typically resolve.

Angiokeratomas of fordyce. This common benign condition is caused by distended dermal blood vessels, which increase in incidence with age. It is characterized by 1- to 2-mm purple, compressible papules, seen in Figure 14, which bleed spontaneously or during the trauma of intercourse.

Treatment is unnecessary unless a lesion bleeds recurrently. In this case, lesions can be ablated by elec-

trodesiccation or laser. Be sure to consider the diagnosis of Fabry's disease, a rare, x-linked systemic storage disease caused by deficiency of the enzyme alpha-galactosidase-A. If you suspect Fabry's disease, look for multiple angiokeratomas on the penis and scrotum as well as groin, inner thighs, and lower abdomen.

In situ carcinomas

Bowen's disease. Bowen's disease is the most common type of carcinoma in situ of the penis.⁷ Usually located on the penile shaft, it presents as a pink, well-demarcated, dry patch or plaque that may be scaly. Treatment options include excision, carbon dioxide laser, and topical fluorouracil. Untreated, this disease can culminate in invasive squamous-cell carcinoma, (Figure 15), which can be definitively diagnosed by biopsy.

Erythroplasia of queyrat. Erythroplasia of Queyrat involves the penile skin—glans, inner surface of prepuce, coronal sulcus—that appears as the solitary, glistening, erosive plaque seen in Figure 16. Like Bowen's disease, erythroplasia of Queyrat has the potential to transform into squamous cell carcinoma.

Bowenoid papulosis. Bowenoid papulosis is an HPV-associated carcinoma in situ. HPV-16 is the most common and types 16,18, and 33 are considered

the most oncogenic with greatest potential for development into invasive squamous-cell carcinoma.⁸ Bowenoid papulosis usually occurs on the penile shaft and is characterized by multiple, slightly elevated, red or brown papules which may be verrucous or scaly. These penile neoplasms, although infrequent, can represent a significant diagnostic and therapeutic challenge, as they can masquerade as other penile dermatoses. Also, complete yet conservative removal is imperative given their location. Depending on the extent of disease, treatment options range from tissue-sparing topical chemotherapy to surgical excision. ♀

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