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PENILE LESIONS
WITH SPECIAL REFERENCE TO
CLINICAL DESCRIPTION

SENIOR THESIS
UNIVERSITY OF NEBRASKA
COLLEGE OF MEDICINE

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1936

PENILE LESIONS

INTRODUCTION

The following paper will be devoted to the clinical description of some of the lesions occurring on the penis. No attempt will be made to discuss history, etiology, pathology, microscopic or serologic methods of diagnosis, or treatment, except to mention them, since the scope of this paper and time do not permit it.

It may be well, before describing any specific lesion to briefly review the anatomy of the penis. The male external genitalia develop from the genital tubercle. The prepuce arises from a fold of skin on either side of the urogenital slit and grows dorsally until the entire glans is encircled and covered. The penis is composed chiefly of erectile tissue separated into three parallel, cylindrical segments by fascia. The two large segments, the corpora cavernosa lie side by side on the dorsal surface, while the corpus spongiosum occupies the groove on their ventral surface. The corpus spongiosum surrounds the urethra and expands distally to form the glans penis. The three segments are bound together by dense fibro-elastic tissue, called Buck's fascia. These parts are covered by the Darto's muscle, loose connective tissue, and thin loose skin. The simple or few layered columnar epithelium of the cavernous urethra changes at the fossa navicularis and becomes stratified squamous epithelium. This process is

carried on to the glans penis, where there is a gradual transition from mucous membrane to skin. This transition results in the glans being covered by modified mucous membrane not true skin.

It may be well also to discuss the normal bacterial flora of the foreskin sac before the abnormal processes are dealt with; Some organisms are always found, while others appear only at times. Generally dry, sparse smegma shows but few organisms, while the more profuse and moist smegma shows more numerous and greater varieties of organisms. Gram positive streptococci and staphylococci are always present; varying members of gram-negative bacilli are more often present in moist smegma. Thin, long, curved smegma bacilli, vibrio-shaped organisms, fusiform bacilli, gram-negative spirochetes, *Spirocheta balanitides*, *Spirocheta refringens*, and *Spirocheta minutum* are sometimes present. The pseudo-diphtheria group of bacilli, gram-negative bacilli of the typhus-coli group and gram-positive yeast forms have been seen. Isolated cases present the necrosis bacillies of Bang, which occurs in noma, and occasionally bacilli similar to *Bacillus involutus*, small round gram-negative cocci, gram-positive cocci of the pneumococcus group, and bacilli of the mesentericus group can be demonstrated.

I found no satisfactory classification for penile lesions when reviewing the literature so have devised the following:

1. Lesions due to local infection.
 - (a) Due to specific local infection
 - (b) Due to nonspecific local infection
2. Lesions due to mechanical or chemical factors.
3. Lesions as a part of general exanthematic diseases.
4. Lesions accompanying metabolic disorders.
5. Neoplasms
6. Lesions due to local tissue changes.

The Primary Lesion of Syphilis

The primary lesion of syphilis is generally known as the "chancre". It is caused by the *Spirocheta pallidum* at the organisms point of entrance through the skin or mucous membrane, and develops at that point in from two to six weeks after inoculation, generally.

The earliest clinical appearance of a genital chancre is a minute, sharply rounded, hyperemic area, which after a very short period becomes a superficial abrasion. This type of chancre is called the abrasive chancre. It is usually seen only early and is the first appreciable evidence of syphilitic infection. On account of the insignificant appearance of the sore it is frequently undiagnosed. The surface is round, about 5cm or less in diameter, sharply margined, smooth and polished. The abrasive area enlarges and these changes take place: Klaunder (13) a secondary infection of it's surface changes the sore into an ulcerative chancre or, if induration is present it subsequently develops into an ulcerative indurative chancre. The ulcerative nonindurative, orbicular chancre is another type of ulcerative chancre. It is atypical and rare, the floor is bright red with raised edges, induration is absent. Infection of the surface of the chancre without ulceration produces the infected abrasive chancre. If induration appears below the level of the surrounding tissue, an abrasive indurative chancre is formed. A sore in which the induration spreads beneath and

beyond its surface, forming a thin disk-like mass is called a parchment chancre.

While chancres may vary greatly as seen in the above paragraph yet certain features are more or less constant in majority.

Floor of Chancre

The floor has the redness of raw beef and there is a considerable amount of serous secretion present. This liberal secretion is a very valuable diagnostic sign. The secretion may dry into a crust which when removed, discloses the beefy floor. If pyogenic infection occurs, either an ulcer is formed or a membrane results and covers the surface of the sore. This membrane is usually "cream green" in color. The floor may remain abraded or it may close, either spontaneously or, as is usually the case, the result of local treatment.

Edge of Chancre

The edge is usually flat and sharply demarcated from the surrounding tissues; an important clinical feature. In another type of the lesion the slightly elevated border may slope toward the eroded center and into normal tissue. As a result, usually of pyogenic infection, the edge may be raised above the surface of the sore.

Area Surrounding Chancre

Usually the tissue surrounding a chancre is normal. In the event of secondary infection a small zone of inflammation may surround the edge.

Induration

When induration is present it is a very valuable sign of syphilis; but its absence does not exclude syphilis. This feature of a chancre is variable, the induration may appear early in the primary stage or late. The older the lesion, the more likely is the induration to be marked. The degree depends in a large measure on the location of the chancre. As a result of pyogenic infection the induration may become less or even disappear entirely.

Non-inflammatory edema

This edema, when present, is a valuable aid in diagnosis. It may involve the area of the chancre or the entire prepuce. The skin is of a dull, livid red or bluish tint, and feels tough and rubbery. The edema accompanying gonorrhoea or a non-syphilitic sore softer when palpated and duller in color.

Adenopathy

The majority of adult males have some enlargement of the superficial lymph nodes. However it may be impossible to distinguish syphilitic enlargement of nodes from an enlargement caused by any other venereal disease. However the presence of enlarged inguinal lymph nodes followed by a general enlargement of the lymphatic nodes is characteristic of syphilis. In about 5% of cases there is no palpable change in the nodes. In the presence of pyogenic infection it is common to find a suppurative adenitis.

A non-syphilitic genital lesion may be differentiated from a chancre, clinically usually. These sores start as a

superficial ulcer and later become deep or they may start as a pustule which breaks down and forms an ulcer. Such ulcers have gnawed, undermined edges. The floor is a dirty grey, pitted and worm-eaten in appearance. An area of inflammation surrounds the sore. Later the contour becomes irregular, because while one part of the ulcer tends to heal, the other invades the normal tissue. These non-syphilitic sores are painful, bleed easily, and do not secrete serum so plentifully as chancres.

Location of Genital Chancres

The form of a genital chancre depends considerably on its location. The cellular reaction to the spirochete is modified by the tissue and the blood supply at the site of the lesion. The form of the chancre is also modified by extraneous factors, such as friction and infection. These in turn depend much on the location of the chancre.

Chancre of the Shaft

The majority of all sores seen on the shaft of the penis are syphilitic. The most commonly seen in this location are abrasive, abrasive papular, and abrasive indurative types. In addition the ulcerative, nonindurative orbicular chancre is usually seen in this region. Chancres of the shaft with the exception of the last type become indurated early.

Infection in this location is the exception.

Chancres of the Prepuce

The roll of the prepuce just behind the corona is the

most frequent site of chancres as well as non-syphilitic sores. There is no type of chancre characteristic for this location. Induration is more likely to be present in chancres of the prepuce than in any other region of the penis. Induration in this location is more easily estimated, as retraction of the prepuce produces a very characteristic appearance -- the whole lesion flicks over like a plate turning on its edge. As the result of multiple chancres induration may involve the entire circumference of the penis behind the corona, producing what is known as "collar" induration. Here as elsewhere, the only evidence of a chancre may be the cartilage-like mass under the intact skin, the papular chancre.

Chancres of the Sulcus

There are two types of ulcerative indurative chancre most frequently seen in this location. In one type there is a small area of ulceration on the floor of the sulcus, surrounded by a rounded area of induration which extends further and is more marked on the preputial side than on the side of the glans. This induration extends only slightly beyond the corona. This crescentic form of induration produces the characteristic "swallows nest" appearance. In the other type the induration and the ulceration are often so extensive as to involve the entire side of the sulcus. The sore is inflammatory and painful. The surface may be covered with a "cream-green" membrane, and there is usually present a foul-smelling secretion. Some induration

is always present in chancres of the sulcus. This induration is usually of a cartilagenous nature, and is whitish, because of fibrous tissue, which constricts the blood vessels.

Chancre of the Glans

Two types of chancre are seen on the glans. One type is the abrasive chancre seen as a perfectly circular and sharply demarcated erosion. The edges are flat and flush with the surrounding tissue. Occasionally however, the surface may be slightly below the level of the surrounding tissue. Early induration is absent; later, however it is slight but never marked. The second type of chancre is the abrasive papular, and is seen on the anterior part of the glans, surrounding the meatus. This type is sharply circumscribed and slightly raised above the surrounding tissue. It appears as though the sore were stuck on the glans and then flattened out. The surface is usually crustaceous, and when the crust is removed the floor is bright red. This sore is more indurated than the first type.

Chancre of the Frenum

The chancre may involve the base of the frenum or the entire frenum. Chancres of the base, when seen early, appear as abrasive areas. The surface is either flush with the surrounding parts or slightly depressed. Slight but never marked induration appears late in the course of the sore, and it is then seen as a small node

about the size of a split pea. A chancre of the entire frenum is usually seen as a linear ulceration with a suppurative grayish yellow floor, the edges of which are raised. Induration if present is only slight. Chancres of the frenum are frequently infected, and hence they appear as ulcerations. They therefore simulate non-syphilitic sores.

Intraurethral Chancre

In the majority of all cases of intraurethral chancres, a varying amount of the sore can be seen, as a portion of it spreads over the meatus. This portion is a dull red, sharply circumscribed erosion, which, when infected, has a dirty gray surface. Induration is always present and can be easily felt by pressing the glans from above downward between the forefinger and thumb. When the chancre is wholly intraurethral, the only objective evidence is induration, slightly painful urination, and blood-tinged serous discharge are accompanying symptoms of these chancres, which not uncommonly lead to a wrong diagnosis of gonorrhoea.

The clinical diagnosis should always be aided by a dark-field examination of the discharge from the lesion, because if the organisms are found the diagnosis is made. Repeated efforts may be required. Serological methods of diagnosis become positive relatively late.

Tuberculosis

Tuberculosis of the penis, like tuberculosis of the skin elsewhere in the body has no characteristic appearance, Ormsby (22), Nixon and Short (19).

In many cases the lesion is a circumscribed excoriation; however in almost all patients an ulcer forms, which may be insignificant or may attain a diameter of 4 to 5cm. Michelson (18). The ulcer stage is characteristic. The base of the ulcer is thick, granular and deep red and bleeds very easily. Here and there are little islands of pyogenic membranous deposit. The edges, although overriding the granular base, are undermined, of irregular outline and indurated. As the lesion grows older the edges become firmer and may have a thin, adherent crust, which makes a crusted ring about the granular base. Sometimes the center of the lesion is raised above the plane of the skin, but almost always the level is maintained, and the center never sunken. The surrounding skin may be of normal color or of a reddish blue hue. Sometimes there are a few papules about the ulcer which resemble lupus nodules and, in fact, in some instances with the healing of the ulcer a definite lupus vulgaris develops in and about the site of the ulcer.

In other cases the lesion resembles an ulcerating scrofuloderma beginning in the deeper parts. In another type the lesion is a firm, localized infiltrate which resembles a plaque of lupus vulgaris. A lesion of either

of these types may and almost always does ulcerate, for in the normal evolution all tuberculous structures come to represent a balance struck between central necrosis and peripheral fibrosis. The initial lesion tends to heal with a scar which may have a residual tuberculous infiltrate beneath a superficial firm scar.

Nixon and Short (19) believe that there is a direct implantation of the tubercle bacilli into the skin by means of a cut or abrasion. This gives rise to a localized indurated papule. This papule develops into a small indolent ulcer of cartilaginous consistency, having an edge that is slightly ramparted and translucent. It is attended by enlargement of the nearest group of lymphatic glands, which may be mistaken for a sentinel bubo. The induration of the ulcer may cause it to be mistaken for a chancre.

Ormsby (22) says the lesion may be a crust-covered ulcer, having an elevated rolled margin, or a bluish-red papule, or a plaque, and there may be small lupus-like nodules in the lesion or its immediate vicinity. The glands that drain the area may become the size of a small egg and may or may not suppurate.

The diagnosis cannot be made clinically but must be corroborated by biopsy, or finding the organisms in primary lesion or in the glands involved.

Diphtheria

This rather rare condition is infrequently seen. It usually follows circumcision or oral diphtheria.

Hoyne and Levy (10) reported 15 cases which were secondary to oral diphtheria or followed circumcision. The penis was swollen, painful, and very markedly edematous. There was a grayish yellow exudate which was firmly adherent.

Prinzing (23) noted a swollen and edematous penis, with marked indurated adenitis. He found a cheese like substance under the prepuce.

Berry (2) reported a case; the urethral meatus was markedly swollen, indurated, and everted. The urethral mucosa was covered with a densely adherent greyish-yellow membrane. From the urethra there was a continuous yellowish watery discharge.

In all the above cases cultures on Loeffler's medium were positive.

Granuloma Inguinale

Granuloma inguinale in the male begins usually on the penis, especially in the coronary sulcus, but may commence on the shaft, at the base, on the scrotum, or even in the groins. At first there is a firm papule, which grows larger, and finally excoriates on the surface. This ulceration continues to spread and flourishes best where the surface is damp, hence the preference for the preputial, anal, and inguinal regions. Lumps or papules, similar to the primary lesion, may appear beyond the advancing borders of the ulcer. Certain areas may become quiescent and epithelialize from bits of epithelium or interpapillary processes left behind at the time of ulceration. In such areas the surface is rough and irregular, due to the alternation of sclerosis and infiltrated granulation tissue, and the epithelium is thin, smooth, glistening, and often devoid of pigment.

Where the lesion is active and ulceration is present Davis and Young (31), the edge and base are markedly proliferated, masses of firm, infiltrated granulation tissue projecting above the surface and rolling over the edges. On the glans and prepuce, this marked proliferation may simulate epithelioma. The surface is irregular, and shows only a moderate tendency to become purulent, in fact, on exposed surfaces the surface may be almost dry.

The spread of the disease is on the surface, and deep destruction usually does not occur unless there are complications. The spread is directly by a creeping process,

by ulceration of the discrete papules mentioned above as occurring beyond the advancing edge, and by contact infection with surfaces in apposition. The lesion may extend far, generally in the direction of the abdomen, thighs, and anus. Large "butterfly patches" may be seen on the abdomen. Involvement of lymph nodes is rare; while the groin is a common location, the disease does not begin there as an adenitis.

Complications can occur with syphilis, chancroid, or epithelioma. Biopsy or smears will demonstrate the causative organisms, the so-called "Donavan bodies". There is also a diagnostic skin test.

Lymphogranuloma Inguinale

Lymphogranuloma inguinale is a specific autonomous venereal disease which typically involves the inguinal lymph glands in a subacute inflammation. In the majority of cases there is suppuration at several sites which ends with the development of persistent fistulae. Men are affected more frequently than women as regards the inguinal adenitis. The disease is supposedly caused by a filterable virus.

The incubation period has been estimated as from 10-30 days from time of exposure to time of adenitis, De Wolf and Van Cleve (9). The patient usually gives a history of a small evanescent lesion that disappears without treatment. This primary lesion may be a papule, pustule, an herpetic lesion or a transient urethritis. Often this primary lesion is not noticed and its site may be undiscoverable.

The most marked feature of the disease is the enlargement of the inguinal lymph nodes. The first glands to be involved are those of the superficial chain in the inguinal region. The disease progresses slowly though steadily to produce a mass which may reach the size of a fist, new glands becoming involved as the disease progresses, all being bound together by periadenitis. Sooner or later the skin becomes attached to the underlying glands and takes on a dark red or purple color. These glands as mentioned above sooner or later suppurate, breakdown, and form persistent festulae.

The diagnosis is at once suggested by the history and

simplified by the Frei test, which is nearly absolutely positive.

Chancroid

This is an acute inflammatory disease of the external genitalia caused by the streptobacillus of Ducrey.

The most frequent site of the lesions is the coronary sulcus, but it may begin at any point on the penis or scrotum. The lesion begins as a vesiculo-pustule which ruptures, leaving a small ulcer. This gradually enlarges; the edges are steep or slightly overhanging, the base is necrotic and sloughing, the discharge purulent, Lewis (15). According to Young and Davis (32) the base is usually covered by a yellowish purulent membrane, and the edges are often undermined. The area surrounding the lesion is reddened, but not indurated, nor is the base of the lesion indurated. The lesion typically is painful, and has a profuse, purulent discharge.

The inguinal lymph nodes are regularly enlarged, and may suppurate, usually in the second week of the disease. The pus, which is highly contagious, makes multiple lesions around the first one. Spontaneous auto-inoculation may occur on surfaces in contact with ulcers as on the thigh or scrotum. This is most frequently seen in persons of filthy habits, as is the disease, generally.

Occasionally, possibly due to secondary infection, phagedenic ulceration occurs, with widespread destruction of tissue.

The diagnosis is suggested by the clinical appearance, and the history of onset within 24-72 hours after coitus.

The diagnosis is proved by finding the organisms in scrapings from the ulcers. One must always be on guard not to miss a chancre, since the two can occur together.

Erosive and Gangrenous Balanitis

Erosive and gangrenous balanitis are two forms of the same disease, an acute inflammatory disease of the prepuce and glans penis caused by Vincent's spirochetes and fusiform bacilli in symbiotic relationship. According to Brams and Pilot (3) the disease may be caused by organisms normally present as saprophytes. Pusey (24) and Corbus (6) found only Vincent's organisms in the cases they reported.

Erosive balanitis begins as small whitish patches of superficial ulceration in the coronary sulcus, or on the glans or prepuce. The central part of the necrotic patch is soon cast off, leaving a red, superficial erosion with a necrotic border. The ulcers increase in size and coalesce, to form large circinate ulcers, covered by an adherent necrotic pellicle, with an inflammatory border, Pusey (24). These changes are accompanied by the formation of very foul smelling pus, which is thin, yellow, and abundant and increases as the eruption develops. When the foreskin is retracted, the surface of the entire foreskin sac is covered with a thin film of pus. The disease is always most marked in the coronary sulcus because here the material can be more adherent and excludes the air, and the epithelium is macerated by the abundant moist smegma. The balanitis may be limited to the sulcus and appear as a completely eroded ring covered with pus. The eruption can involve the entire glans and foreskin but does not involve the urethra itself.

In the more severe cases there is a firm, painless

inguinal adenitis. The skin over the glands is not inflamed, and the nodes do not suppurate unless secondarily infected by streptococci. Another frequent complication is a high degree of phimosis.

Gangrenous balanitis, while caused by the same organisms, presents a fulminating, rapidly progressive infection, with severe subjective symptoms. It occasionally results from an untreated, improperly treated, or undiagnosed case of erosive balanitis, but the erosive symptoms may be entirely absent because they are passed through very rapidly. Gangrenous balanitis begins on the inner surface of the foreskin, usually near the coronary sulcus, as small, round erosions, covered with a grayish white diphtheritic membrane. The erosions enlarge rapidly, coalesce, break down and form ulcers. The ulcers extend in depth and circumference and are covered by a black, gangrenous membrane. The border is sharply margined and angry red, while the base is uneven and granular. There is an inflammatory halo of varying degrees of intensity around the ulcers. The process is much more rapid and intense than erosive balanitis. The ulcers can form and perforate the foreskin in a few hours. Here they show through the prepuce first as dark red patches; later the color changes to black, and then the entire preputial area becomes necrotic and sloughs and the glans shows through the opening. If the ulcers are on the glans, severe hemorrhages may occur and the entire glans may be destroyed within a short time. The discharge is more serosanguineous than in erosive balanitis. The eruption is always very painful and is generally

associated with complete phimosis.

Ulcerating, gangrenous balanitis with phagedena represents a more virulent process than gangrenous balanitis. Labadie (14) says the ulcers, when they first appear are similar to those seen in gangrenous balanitis, but they spread rapidly in circumference and depth. The lesions are sharply margined very painful and covered with a firm, necrotic, brown to black, adherent gangrenous membrane. A severe phimosis, a foul, abundant secretion, and edema of the entire penis almost always accompany the ulceration. The ulceration may progress very rapidly. The eruption spreads by direct extension over the genitalia and may involve the abdominal wall, thighs and surrounding skin.

The diagnosis in all these types of ulceration is made by the history, inspection, and by smears or scrapings from the ulcers.

Gonorrhoea

Balanitis in gonorrhoea occurs in acute cases commonly, but in chronic cases rarely. It is more common in patients with a long foreskin and in cases in which the discharge is abundant. The pus envelopes the preputial sac and collects in greater amounts in the coronary sulcus. The glans shows a diffuse redness when the pus has been wiped off. There may be weeping, round or irregular erosions, which are discrete or confluent. The papillae on the glans stand out sharply; the balanitis may occur only on the lower part of the glans and prepuce where the pus is more abundant. The only common symptoms are itching and burning. The irritation of the pus may cause a marked edema of the prepuce; a marked phimosis may occur in any case.

Madden (17) says balanitis may be caused by direct deposits of gonococci in the crypts, sebaceous glands, and paraurethral passages. Balanitis circinata appears as numerous round, red lesions which have a wet sheen, do not excrete and are surrounded by a narrow corona of delicate whitish epidermal scales. Many efflorescences are completely covered by a dry, crumblike, grayish-yellow coating or horny shield. These lesions can coalesce to make wreathlike figures.

The diagnosis in these cases is aided by the presence of a urethritis and a Gram's stain of the pus.

Condyloma Latum

Condyloma lata occur most frequently about the anus, but may occur on the scrotum or penis. They occur more frequently in women.

Condyloma lata, according to Huzen (11) are simply papules of a secondary syphiloderm influenced by their environment, that is warmth, moisture, and more or less friction and pressure. The lesions are of two types chiefly; a flat, macerated papule, indefinite in outline and covered with a thick mucoid secretion, and an hypertrophied, distinctly elevated, well outlined lesion. The lesions may vary from 1/3 to 3/4 of an inch in diameter, and are either round or oval. There may be but one or two lesions, or there may be many. Keyes (12) says they usually occur in groups, forming irregular masses, which may cover an area of two or three inches in diameter and may rise a half-inch or more above the surface. Keyes (12) says that the striking characteristic of the lesion is that, though a vegetating one, the vegetation is relatively low compared to the extent of the base.

Of the hypertrophied type, Huzen (11) says the borders are well defined, the edges rise at right angles to the surface of the skin, and the top is flat and covered with a grayish necrotic membrane that is more or less glistening. The secretion which exudes from the condylomata is teeming with organisms and is highly infectious. The base of the

lesions is always infiltrated.

The diagnosis should be made clinically. Usually other signs of syphilis are present and complement fixation tests are positive.

Herpes Genitalis

This disease may or may not belong in the group due to specific local infections, however according to Avit-Scott (1) it is caused by a filterable virus.

The lesions occur most frequently in the balanoperputial sulcus, but also on the inner face of the prepuce, on the glans, and in the adjacent integument. The first symptoms are a sense of heat and itching, rather than actual pain, followed in 12-48 hours by the appearance of one, or a group of several, pin-head sized, rounded vesicles, containing a clear fluid. These vesicles are seated on a hyperemic base. Later the vesicles rupture and appear as a cluster of shallow, circular erosions, which are not indurated. At this time the lesions may become secondarily infected with considerable swelling of the prepuce. They may have a bloody discharge, or a crust may form, which drops off in a few days and the disease is terminated.

Balanitis Vulgaris

This is a type of balanitis which is clinically characteristic, yet its bacteriology is not well understood, Madden (17).

It usually appears as a catarrhal balanitis in which the entire foreskin sac is involved, with or without erosions. A thin yellowish gray pus develops, and pseudodiphtheria bacilli are found in enormous numbers. Other cases present a gray or white membrane on a dull base covering the preputial sac. A characteristic of all types is the diffuseness of the eruption.

Clinical diagnosis is aided by the finding of many non-specific bacteria in the smears, with no specific organisms.

Dermatitis Due to Rubber

On this subject I could find only two case reports. Rettner (25) reported a case in which the eruption began as a patch of moist erythematous dermatitis just proximal to the glans. In addition there were a few scattered lesions of lesser severity on the shaft.

Obermayer (20) reported the case of a patient who had a dermatitis or eczema of the glans and shaft. This patient, a physician, also developed a dermatitis every time he wore rubber gloves.

Both the above cases responded when the use of rubber condoms was discontinued.

Lichen Planus

Lichen planus is a dermatosis which usually does not occur on the penis alone.

Little (16) says two forms of the eruption may occur on the penis, either the "white ridges" or more commonly, red papules, often arranged in ringed shapes. White (30) says that annular lichen planus occurs not infrequently on the penis, both on the glans and the body of the organ.

The plane papule is the most common manifestation of the disease. The eruption may appear in one of two forms or these may be combined in the same patient at the same time.

1. There may be discrete, flattened, shiny papules of a more or less vivid red, varying in diameter from 1 to 5 mm., usually grouped together. Their color may vary from pink to brown, on the glans penis the lesions are usually pink, but may be white. In larger and older lesions, sometimes there may be seen a peculiar surface striation looking like tiny grayish scratches on the elevated plateau of the papule.

2. The lesions may appear as papules of a white, ivory yellow, or mother-of-pearl color. They are firm to the touch, bend with the skin, and when grouped may be wrinkled. Often they show no areola and no signs of inflammation, but there may be a zone of redness or pigmentation around them. The papules may be discrete or grouped, or as more commonly occurs on the glans, disposed in lines. They usually leave soft, white atrophic areas of the size and shape of the original papules.

On the surface of the papule, which is flat and often polygonal, there are comedo-like plugs, or minute depressions from which plugs have escaped.

The diagnosis is made by the appearance of the lesions and finding typical lesions elsewhere on the body.

Scabies

Scabies is a contagious skin disease caused by the *Acarus scabiei*. While the lesions often occur on the penis and scrotum, other sites of predilection are the dorsal surface of the interdigital webs, the flexures of the wrists, the anterior axillary folds, and the lower abdomen.

The earliest noticeable manifestation of the disease is itching of variable intensity, always worse at night. On close examination a few minute lesions, consisting of papules and vesicles, may be discovered. Toomey (29) states that with the aid of a hand lens tiny cuniculi or burrows can usually be found, which appear as darkish or whitish, tortuous or zig-zag, superficial, threadlike channels. The open end is marked by a slight elevation and the closed end by a tiny, grayish speck which marks the resting place of the female parasite. The burrows vary from 5 to 10 cm. in length. Due to the scratching done by the patient these characteristic signs may be masked by pustules, crusts, excoriations, and pigmentations.

The shaft of the penis is more frequently involved than the glans. It may appear on the penis as hypertrophic papules, or even as a diffuse, acute balanitis.

The diagnosis can be made by finding the parasite, by the typical lesions, and by lesions elsewhere on the body.

Psoarriasis

Psoarriasis of the penis is usually seen as a part of psoarriasis of some other part of the body, only very rarely does it occur on the penis alone, Robinson (26).

Psoarriasis commences as small, reddish, elevated spots which spread peripherally, producing patches of variable size and shape. Soon, whitish scales begin to appear on the summits of the papules, and increase in quantity as long as the disease is actively increasing in extent. The scales are upon a hyperemic base, they are easily detached, and their removal is followed by the appearance upon the papule of oozing or bleeding points. The whitish appearance of the scales is due to the presence of air in the spaces between the shriveled and dried up epithelial cells. On the penis the lesions most often appear as red to brown, dry, sharply margined, glazed lesions with or without a white, dry scale, which can cover the entire preputial sac.

The diagnosis is usually aided by finding more typical lesions elsewhere on the body.

Diabetic Balanitis

Diabetic balanitis occurs in male diabetics when the prepuce is long and worn habitually forward. The eruption is usually caused by glycosuria, with retention of urine in the preputial sac and the development of a secondary mycotic dermatitis. *Monilia*, *Aspergillus*, and *Oidium* have been found and these fungi are believed to be the direct cause of the balanitis.

Diabetic balanitis begins as an increased secretion from the preputial sac. The urethral orifice and surface of the glans is reddened and sensitive. There may be itchy, scaling, reddened patches, which look like a superficial mycotic dermatitis. Burning and itching may be very severe. Later they become dark red to purple, and the glans is covered with adherent, decomposed smegma, which takes on a membranous appearance. Cooper (5) says, "This peculiar color of the mucous membrane is striking and characteristic." There is a tendency to phimosis and cracking of the preputial margin. Sometimes slight bleeding occurs. When the eruption becomes more marked, proliferative vegetations may appear on the glans. These growths have an abundant blood supply and bleed at the slightest touch. Ulcers may accompany or follow the numerous fissures, which appear at the foreskin opening. The ulcers are sharply margined, terraced, and covered with a whitish yellow membrane. The foreskin may become edematous, thick, rigid and immovable. Finally gangrene

may develop.

The diagnosis is made by the clinical appearance, plus the history of diabetes, or the finding of a glycosuria.

Condyloma Acuminatum

The most common sites of condyloma acuminata in the male, are the glans, in the coronary sulcus and the inner surface of the prepuce. According to Creadick (7) they may be single or multiple, scanty or abundant, pointed, tufted, club-shaped, and sessile or pedunculated. They have a bright pinkish or reddish color, sometimes with a purplish tone; often they are compared to a cock's comb. In other cases they appear as thick, hypertrophic and superabundant granulation tissue. In the mildest cases they consist of one or more groups or bunches of acuminated, pinkish or reddish, raspberry-like elevations. The warts, in some extreme cases, make up irregular, cauliflower-like masses which cover the entire region and project to considerable elevation. Depending on their location, they may be dry or moist; if the latter, Ormsby (21) says the secretion is usually abundant, of a yellowish color and puriform, and develops, from rapid decomposition, an offensive and penetrating odor. As the excrescences bleed easily, the secretion is often tinged with blood. If the lesions are exposed to the air, the discharge may dry and form a thickish, reddish-yellow, or brownish crust, beneath which the secretion undergoes rapid decomposition.

The diagnosis should be made on the clinical appearance.

Epithelioma

Epithelioma of the penis is not uncommon in men under 40 years of age. They may occur either on the glans or prepuce. Dean (8) says the most frequent symptoms are itching, burning, sticking pain; a foul, purulent discharge, occasionally blood-tinged, nearly always seeps from underneath a reddened prepuce. A hard lump may be felt near the end of the penis; pain is sometimes severe. Rarely is there a frank hemorrhage, but urination may become painful or even impossible.

There are two types of epitheliomas seen here, papillary and flat, each, histologically, is a squamous carcinoma. Papillary tumors may have an indurated base in the later stages, flat tumors have dense induration at all times.

Flat tumors usually appear first as small, superficial, round ulcerations on an elevated base. Ulceration may occur so early that the lesion appears as an excavation. Evidence of tissue production may be hard to find. The ulcers are of deeper red than the surrounding tissue. The lesion steadily grows laterally, at the same time infiltrating deeper, frequently the edges appear rolled upward.

Papillary tumors are usually first seen as a wart springing from the glans or mucous surface of the prepuce. The warts increase in number and coalesce to form a single tumor. This grows in all directions, transforming healthy tissue into an irregularly shaped, cancerous mass. Although ulceration is not present early, the tumor usually breaks

down in places before it is of any great size. Since ulceration occurs when growth of the tumor exceeds its blood supply, a constricting prepuce is conducive to early ulceration. When ulceration occurs, infection rapidly follows and a thin, yellowish, extremely foul smelling discharge may be found draining from beneath the inflamed prepuce. When necrosis involves the wall of a blood vessel, bleeding occurs.

Papillary and flat penis cancers have different growth characteristics. The former grows toward the surface and fungates, not infrequently it first penetrates, then completely destroys the prepuce. It then progresses in a spectacularly destructive way toward the base of the penis, with the growth on the surface a fair indication of the extent of involvement.

The flat tumors infiltrate and excavate deeply. It is not unusual for them to extend for a considerable distance in deeper tissues with relatively insignificant surface changes.

The diagnosis here, of course, is confirmed by biopsy. A thing which struck me rather strangely is that Dean (8) says that Jews do not have carcinoma of the penis because of circumcision.

Paget's Disease

Paget's disease is a carcinomatous disorder in the skin with inflammatory symptoms. The disease may occur either on the glans or shaft of the penis. It begins with moderate inflammation, seen as redness and scaling, exuding a clear, viscid secretion, and produces subjective symptoms of heat and burning, with intense or moderate itching. Busman and Woodburne (4) state that characteristically the lesion is sharply margined and that the surrounding skin is normal. They further state that it is a disease of the epithelium itself, not of the ducts of either the sudoriferous or sebaceous glands. As the process extends deeper the lesion becomes indurated. These lesions sooner or later always become carcinomatous.

Diagnosis is made by biopsy.

*Doubtful if
is best reference to
the subject.*

Erythroplasia of Queyrat

Erythroplasia of Queyrat is a precancerous dermatosis of unknown cause, which can change over immediately into cancer. The eruption begins on the glans penis as a lentil sized, moderately elevated, shining or intensely red plaques with an uneven velvet-like surface, which secretes a varying amount of fluid.

The eruption can spread over the entire preputium. The lesions are moderately firm, may show a slight scale, and are often sensitive on pressure. Stiles (27) states that the clinical malignant change can be noted by thickening, infiltration and finally ulceration.

Sulzberger and Satenstein (28) state that syphilis, while not the etiological agent, does predispose to the disease.

The diagnosis is made by the clinical appearance and biopsy.

Leukoplakia

Leukoplakia almost always follows or is associated with some form of chronic irritation produced by surface irritation or inflammatory reactions in the cutis. Diabetic, erosive and common balanitis on the surface frequently precede leukoplakia.

Madden (17) says that leukoplakia is characterized by various sized patches, which show a thickening of the epithelium, a white to bluish white color, a loss of some of the normal surface markings and a smooth shining surface, which may be eroded here and there. In some cases the surface is roughened and covered with papillary excrescences. If the leukoplakic inflammation is severe or continues for some time, the external sheath of the prepuce and the glans becomes very thick. The entire foreskin and glans may become rigid and stiff and show various degrees of loss of elasticity.

Microscopic examination may be necessary for diagnosis.

Kraurosis Penis

Kraurosis penis is a rare disease of unknown etiology. The disease begins as a diffuse redness of the glans or prepuce or both, accompanied by burning, itching, and increased secretion within the preputium. Adhesions may form between the foreskin and the glans, and white, rough patches appear on the glans. The exposed surface of the glans may become atrophic, pale and bluish white.

Later Madden (17), the prepuce and glans show atrophy and a continued loss of elasticity, and a peculiar paleness of tissue develops. Deep furrows appear between patches of the eruption on the glans and prepuce.

Atrophy and sclerosis continue, and mechanically produced fissures and tears appear at the preputial margin.

Diagnosis is corroborated by microscopic examination of the tissue.

Balanitis Xerotica Obliterans

Balanitis xerotica obliterans is a disease of unknown etiology. Since Madden (17), so far as I know, is the only man to describe the disease in the English language I shall use his description.

"The glans first becomes thickened, sensitive, swollen and scaly. The swelling decreases and the affected parts become pale and parchment-like, and weep. Finally adhesions form between the glans and prepuce. Weeping, burning and the feeling of tension persist. There may be a slight urethral discharge. The foreskin often covers and is adherent to the sulcus coronarius. The rest of the glans is covered by a whitish yellow or bluish white membrane, which shines like parchment and shows firm, adherent scales in the central portion. The fully developed eruption shows the glans to be atrophic and of a bluish to white color. Running beside the bluish, smooth sections are higher and stronger white lines of scarring, which may show scales. The eruption is more marked at the urethral orifice. The orifice may look like a mere fissure, and in severe cases urine can be evacuated only under pressure or following surgical intervention. The process can continue up the urethra for some distance, and may lead to complete urethral occlusion. Madden's cases showed a fine wrinkling and puckering of the involved portion of the glans."

The diagnosis is made with the aid of microscopical examination.

Bibliography

1. Avit-Scott, J. : Recurring Herpes Genitalis in the Male, Lancet, 1:972-979,1931.
2. Berry, N.E. : Diphtheritic Infection of the Penis and Urethra, Brit. Jour. Urol. 4:348-352, 1932.
3. Brams, J. and Pilot, Isadore: A Study of Erosive and Gangrenous Balanitis, Arch. Dermat. and Syph. 7:429-438, 1932.
4. Busman, G.J. and Woodburne, A.R.: Paget's Disease of the Glans Penis, Arch. of Dermat. and Syph., 24:396-399,1931.
5. Cooper, Arthur: Balano-Posthitis and Glycosuria, Brit. Med. Jour. 1;1432,1908.
6. Corbus, B.C.: Erosive and Gangrenous Balanitis, the Fourth Venereal Disease, Jour. Amer. Med. Assoc. 52;1474-1477,1909.
7. Creadick, A.N.: Condyloma Acuminatum, Jour. Amer. Med. Assoc. 75:1057,1920.
8. Dean, Archie L.Jr.: Epithelioma of the Penis, Jour. of Urol., 33:252-283,1935.
9. De Wolf, H.F. and Van Cleve, J.V.: Lymphogranuloma Inguinale, Jour. Amer. Med. Assoc., 99:1065,1932.
10. Hoyne, L.F. and Levy, S.A.: Diphtheria of the Penis, Journ. Amer. Med, Assoc. 90:1620,1928.
11. Huzen, Henry H.: Syphilis, 120-126, The C.V. Mosby Co. St. Louis,1928.
12. Keyes, Edward L.: Syphilis, 340-345, Dr. Appleton and Company, New York and London,1908.
13. Klauder, J.V.: The Early Diagnosis of Syphilis, Jour. Amer. Med. Assoc. 72:693,1919.
14. Labadie, J.H.: Phagedenic Destruction of the Male Genitalia, Jour. Amer. Med. Assoc. 91:1447-1452,1928.
15. Lewis, Dean: Practice of Surgery, W.F. Prior Co. Inc., Hagerstown,1935, 9,10:61-80.
16. Little, E. Graham: Lichen Planus, Jour. of Cut. Dis., 37:639,1919.

17. Madden, John F.: The Balanitides, Jour. Amer. Med. Assoc., 105:420-426, 1935.
18. Michelson, Henry E.: The Primary Complex of Tuberculosis of the Skin, Arch. Dermat. and Syph., 32:588-601, 1935.
19. Nixon, H. and Short, A.: Tuberculous Chancre, Brit. Jour. Surg., 10:44, 1922-1923.
20. Obermayer, M.E.: Eczema due to Hypersensitiveness to Rubber, Arch. Dermat. and Syph., 27:24, 1935.
21. Ormsby, O.S.: Synovial Lesions of the Skin, Jour. Cut. Dis. 31:943, 1913.
22. Ormsby, O.S.: Tuberculosis Resembling Chancre, Arch. Dermat. and Syph. 21:660, 1930.
23. Prinzing, J.H.: Diphtheria of the Penis, Jour. Amer. Med. Assoc., 94:1395, 1929.
24. Pusey, W.A.: Balanitis Gangrenosa, Jour. Amer. Med. Assoc., 69:108-1081, 1917.
25. Rettner, Herbert: Dermatitis of the Penis from Rubber, Jour. Amer. Med. Assoc., 105:1189, 1935.
26. Robinson, A.R.: On the Nature and Pathological Histology of Psoriasis, N.Y. Med. Jour., 28:1, 1878.
27. Stiles, Frank, Jr.: Erythroplasia of Glans (Queyrat), Arch. Dermat. and Syph. 30:640-650, 1934.
28. Sulzberger, M.B. and Satenstein, D.L.: Erythroplasia of Queyrat, Arch. Dermat. and Syph. 28:798-806, 1933.
29. Toomey, Nixon: Scabies, Urol. and Cut. Rev., 26:473, 1922.
30. White, Charles J.: Lichen Planus, Jour. of Cut. Dis., 37:670, 1919.
31. Young, H.H. and Davis, D.M.: Practice of Urology, W.B. Saunders Co., Philadelphia, 1926, 2:191-199.
32. Young, H.H. and Davis, D.M.: Practice of Urology, W.B. Saunders Co., Philadelphia, 1926, 1:165-178.