

SYPHILITIC CHANCRE	CHANCROID	HERPES	ULCERATED (BALANITIC OR OTHER) ABRASION
13. <i>Phagedena</i> .—May occur rarely.	13. Much more common.	13. Very rare, if at all possible.	13. Same.
14. <i>Bubo</i> .—Syphilitic bubo constant.	14. In about two thirds of cases glands are unaffected, in the other third inflammatory or virulent bubo occurs.	14. Glands are very rarely involved. Inflammatory bubo may occur, virulent bubo is impossible.	14. Same.
15. <i>Lymphangitis</i> .—Syphilitic.	15. Inflammatory or virulent.	15. Inflammatory.	15. Same.
16. <i>Prognosis</i> .—For local consequences good, but syphilis follows.	16. For local consequences more serious; no after-effect.	16. Good in all respects; may recur.	16. Same.
17. <i>Treatment</i> .—Local treatment but slightly effective.	17. Local treatment curative.	17. Same.	17. Same.

SYPHILITIC BUBO

1. *Nature*.—It is a specific affection, with peculiar characteristics.
2. *Frequency*.—It is a constant symptom attending syphilitic chancre.
3. *Number of Glands Involved*.—In those regions where multiple glands are found, it is generally poly-ganglionic; these may be unilateral or bilateral in the groin, rarely matted together into one large mass, but, when so, the latter retains the characteristics of indolence, etc.
4. *Date of Appearance*.—It develops during the first or second week of syphilitic chancre.
5. *Size*.—The glands are usually only slightly enlarged.
6. *Induration*.—The glands are specifically indurated, feeling like cartilage or wood.
7. *Evidence of Inflammation*.—None; the glands are freely movable among the tissue. The skin is neither adherent nor red, nor is there any pain. The most prominent feature of the swelling is its indolence.
8. *Termination* always in resolution, except in occasional cases, where, from added simple or tubercular infection, suppuration ensues.

BUBO OF CHANCROID

1. It may be simple (inflammatory), such as might attend any inflammatory lesion, or virulent.
2. It is a complication occurring about once in three cases.
3. Usually consists of a single gland in any region of the body. In the groin it may be bilateral. It is never a group of small, movable glands.
4. There is no fixed period of appearance.
5. The gland is greatly enlarged.
6. No hardness except inflammatory.
7. Every appearance of inflammation. The gland becomes fixed (periadenitis), the skin adherent, the part feels hot, there is pain, the skin reddens, the prominent features are those of inflammation.
8. Inflammatory bubo may resolve or may suppurate. Virulent bubo invariably suppurates and becomes an open chancre ulcer.

SYPHILITIC BUBO

9. *Auto-inoculability*.—If suppuration occurs the pus is not auto-inoculable. The abscess does not become a chancre or a chancroid ulcer. It does not extend, and never becomes phagedenic.
10. *Natural duration* in a few weeks or months.
11. *Prognosis* good as far as local results are concerned, but the patient invariably has syphilis.
12. *Local treatment* ineffective, except for complications; general treatment of doubtful efficacy, but sometimes serviceable.

SYPHILITIC LYMPHANGITIS

1. Occurs only in case of syphilis, and has peculiar characteristics.
2. Feels hard, like the vas deferens, of the size of a knitting-needle or of a goose-quill; no pain on erection or on handling.
3. Skin normal.
4. Termination by gradual resolution. Suppuration rare and adventitious; in such cases the pus is not auto-inoculable.
5. Treatment unnecessary and of little effect, except in case of inflammatory complication.

BUBO OF CHANCROID

9. The pus of inflammatory bubo is not auto-inoculable; the pus of virulent is readily auto-inoculable.
10. Natural duration is a few weeks, or many months, as a chancroid; possibly years, if it becomes phagedenic.
11. Prognosis good for inflammatory, less so for virulent bubo, especially if it becomes phagedenic. In neither case does syphilis follow.
12. Local treatment useful and necessary to avert suppuration, to cure chancroid left by virulent bubo, and to lessen complications. Antisyphilitic treatment absolutely useless.

LYMPHANGITIS OF CHANCROID

1. Exists as simple inflammatory lymphangitis, or in virulent form; the former may complicate any inflammation, the latter found only with chancroid.
2. Some inflammatory hardness. Pain on erection and on handling.
3. Skin red over inflamed vessel.
4. Termination by resolution or suppuration. Virulent lymphangitis invariably suppurates, the pus is auto-inoculable, and the openings become chancroids.
5. Local treatment advisable to quiet pain, to avert suppuration, or to limit extent and severity of chancroids.

CHAPTER V

DISEASES OF THE SCROTUM

ANATOMY

THE scrotum is a pouch formed of skin and of muscular and connective tissue. Its function is to contain and support the testicles. It is developed from lateral halves which unite centrally in the raphe (*ράπτω, I sew*), a raised line continuous with the raphe of the penis and that of the perineum.

The integument of the scrotum is delicate in structure, covered with a few hairs, and likely to become pigmented at puberty. The sebaceous glands are very large.

The dartos is a layer of unstriped muscle firmly attached to the integument, and reflected inward from the raphe, to form the septum scroti. Each testicle has thus a dartos of its own. On exposing the scrotum to the air, the vermicular contractions of this muscle can be readily seen. They occur under the influence of cold or fright, and during the venereal orgasm. In youth, especially in winter, the dartos is habitually contracted and holds the testicles well up under the pubes. The ancient sculptors did not fail to notice that contraction of the scrotum was a mark of general as well as of sexual vigour. In the aged and infirm, on the other hand, especially during summer, the muscle relaxes, allowing the testicles to hang low, supported mainly by the spermatic cords.

The septum scroti is pervious to fluids, so that serum or infiltrated urine can find its way readily from one side to the other. The lymphatics of the scrotum are large and numerous and lead to the inguinal glands.

The connective tissue within the scrotum, like that of the penis, is practically devoid of fat. The muscular dartos, described above, is the only layer of importance. The space between it and the testicle is filled with a loose mesh of fascia within which run the scattered fibres of the cremaster muscle, and beneath which the infundibuliform fascia, derived from the transversalis fascia, forms the investment of the spermatic cord.

ANOMALIES

The scrotum develops independently of the testicles, but if the latter fail to descend it remains rudimentary.

Failure of union between the lateral halves of the scrotum constitutes one of the features of pseudo-hermaphroditism.

CUTANEOUS DISEASES

The scrotum may be affected by most of the diseases of the skin. Only those that are modified by their position deserve notice.

Eczema.—Eczema attacking the scrotum and the surrounding parts is sometimes excessively obstinate and prone to relapse.

Intertrigo.—Intertrigo occurs in children and in fat men of rheumatic habit. Much can be done to prevent it by scrupulous cleanliness, and the use of a suspensory bandage to keep the cutaneous surfaces apart. To overcome the hyperemia, rest, cleanliness, and exposure of the parts to the air are speedily effective in mild cases. If the surface is moist and excoriated, it should be dusted with equal parts of finely powdered oxid of zinc, camphor, and starch, or it may be dressed with the oxid-of-zinc ointment or with a solution of sulphate of zinc. A strip of old thin linen should be used to sling up the scrotum and keep the cutaneous surfaces apart. Later, when the parts are dry, compound tincture of iodine, at first considerably diluted with water, locally, will hasten the cure. Avoidance of stimulating food and drink, to render the secretions less irritating, is advisable. Turkish baths avail much.

Pityriasis.—In men with a delicate skin, especially in summer, there is often a slightly brown discoloration of the thigh and the scrotum, where the two surfaces lie habitually in contact, caused by a vegetable parasite in the upper layers of the epidermis. It sometimes gives rise to a mild local erythema and considerable itching. A few applications of the compound tincture of iodine diluted to half strength, and painted on after the affected skin has been washed with soap and dried (to remove the fat from the scales and spores), will cure the discoloration and the itching. Sulphurous acid does well.

Eczema Marginatum.—This is another parasitic disease, affecting the scrotum, thighs, mons veneris, and buttocks. It is not an eczema, but a herpes tonsurans vesiculosus—a combination of herpes tonsurans and intertrigo, as proved by Pick.¹ The eruption commences in one or more small, round patches, red, elevated, and

¹ Archiv f. Derm. und Syph., 1, iii, 443.

itchy, just where the scrotum habitually lies in contact with the thigh. It spreads circumferentially, healing in the centre. The border of the eruption is sharply defined, and forms the distinctive feature of the disease. It is composed of papules, vesicles, excoriations, and crusts. The parts within this festooned border over which the disease has passed are left of a brown colour. Often, little heaps of dried-up scales lie here and there upon this surface. Patches of eruption break out in the neighbourhood or within the border, and behave exactly like the patches first constituting the disease. The affection is slow in getting well and tends to relapse. Friction and moisture of the parts, together with the parasite, are necessary for its production. Among the scales scraped from the margin, the microscope may detect the moniliform filaments and spores of the trichophyton of Malmster, the parasite of ordinary ringworm. In certain stages of the disease the parasite is difficult to find.

Treatment.—Dilute lead-water or oxid-of-zinc ointment may be used locally at first if there be much inflammation of the skin, to be followed by parasiticide lotions, or the latter may be commenced with at once. The best of these is a mild solution of corrosive sublimate in water (1:2,000), which should be kept constantly applied. Sulphurous acid, pure, is an excellent parasiticide; tincture of iodine may be used, or an ointment of turpeth mineral (hydrarg. sulph. flav.) 2% to 4%. Treatment should be kept up for some time after apparent cure, as relapses are the rule, and can only be averted in this way.

Pruritus Genitalium.—This, like other purely pruriginous skin affections without eruption, is excessively obstinate, the sufferers are usually rheumatic or gouty subjects, and any dietetic or hygienic errors seem liable to induce or aggravate the disorder. After the exclusion of animal or vegetable parasites from the rôle of causality, the treatment consists in hygienic and dietetic precautions, with the internal exhibition of alkalies, and, if need be, tonics. Turkish and Russian baths are often very serviceable.

The following are among the most generally useful local measures, what is suitable for one case often having no effect upon another. Hygiene and change of air are sometimes the only really curative agents.

Hot water, tar, pure or in combination, yellow wash, chloral, camphor; or,

℞ Chloroform..... 2 gm.
Adipis..... 20 “

M. Keep corked in a wide-mouthed bottle.

Or,

℞ Acid. hydrocyanic. dil..... 10 to 50 gm.
Glycerini..... 15 gm.
Aquæ..... q. s. ad 100 “

M. Ft. lotio.

Finally, local electricity, either the induced or the continued current, has moderate curative power over some cases.

Pediculi Pubis.—These parasites may be found upon the scrotum, as they may, in fact, upon any part of the body from which the hairs of puberty grow. They exist in greatest abundance, however, about the genitals, and particularly on the mons veneris. They are plainly visible to the naked eye, as are their eggs attached to the hairs (Fig. 162, a). They may be destroyed by sprinkling the parts with calomel, or by applying a 1:1,000 solution of corrosive sublimate in cologne-water, or a wash made of equal parts of tincture delphinii and water, or by the free local use of kerosene oil. When they infest the whole body, some few usually escape the ordinary application of lotions, and these soon breed a new crop. Care and patience, however, will always finally dislodge them. No treat-

ment is better than the old-fashioned blue mercurial ointment, which may be rubbed into the hairy parts about the pubes and perineum and somewhat down the thighs, the patient going to bed in drawers and sleeping covered with the ointment all night. Two such applications, at a few days' interval, usually destroy the colony. The treatment is a very dirty one, and much soap and hot water form essential parts of it. Moursou,¹ a French

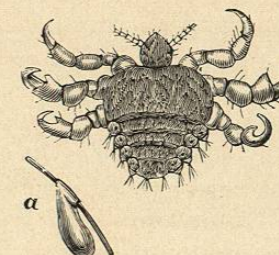


FIG. 162.—PEDICULUS PUBIS AND NIT.

naval surgeon, first pointed out the relation between certain blue spots on the skin and pediculi pubis, and Douguet confirmed the relationship by inserting a bruised pediculus under the skin and producing a spot. Mallet proved that the colouring matter resides in the salivary glands of the pediculus. In the early spring the spots are more abundant than in other months.

INJURIES OF THE SCROTUM

Wounds.—Wounds of the scrotum, whether surgical or accidental, give rise to free bleeding. This must be entirely controlled

¹ Lancet, 1882, ii, 454.

by clamp and ligature before the wound is sutured, for in the lax scrotal tissues an insignificant oozing may give rise to an enormous hematoma extending to penis, thighs, and abdomen. Efficient hemostasis is therefore of prime importance. Every smallest clot adhering to the sides of the wound must be scraped away with the nail, and, if bleeding occurs beneath, it must be checked by torsion or ligature.

If the hemostasis is really efficient, the wound may be closed by a continuous suture with the points close together (since the dartos tends to separate the edges). As a further precaution, the scrotum may be compressed beneath a double hip spica and criss-cross bandage. I have recently employed an adhesive-plaster dressing suggested by Dr. W. Duff Bullard. An adhesive-plaster strap is laid tightly across the thighs beneath the scrotum, which rests upon it covered only by a light dressing. Compression is then obtained by passing a number of adhesive straps obliquely over the scrotum at various angles. The testicles are pushed up or down according to the requirements of the case. This dressing, if carefully applied, is light, snug, and comfortable.

Loss of Tissue.—When any considerable portion of the scrotum is destroyed by gangrene, accident, or the knife, the rapidity with which the defect covers in is little less than marvellous.

Castration need never be performed, however great the loss of integument. Kocher's¹ case, in which both testicles were practically covered over by skin in the short space of three weeks, shows what brilliant results may be obtained by expectant treatment. The surgeon need only help with tension sutures and aseptic dressings.

Hematoma and Hematocele.—Contusions of the scrotum give rise to extensive ecchymosis and edema quite comparable to the familiar black eye. If seen early the hemorrhage may be checked by adhesive-plaster compression and an ice-cap. Later heat promotes absorption, which is rapid. The hematoma need not be incised.

Scrotal or extra-vaginal hematocele (blood cyst of the scrotum) is a very rare result of scrotal hematoma. Jacobson² mentions two cases.

INFLAMMATIONS OF THE SCROTUM

Inflammatory Edema.—Extensive edema may complicate any inflammatory affection of the scrotum on account of the laxity of its tissue and its dependent position. Scrotal edema may also be

¹ Billroth and Lücke, *Deutsche Chir.*, 1887, 1 (b), 8.

² *Diseases of the Male Organ of Generation*, 1893, 549.

due to any obstruction to the return of its blood, as occasionally to the hard inflammatory induration about an inguinal adenitis, or it may occur in connection with general anasarca.

Where edema is excessive, and the tension so great that injury to the skin seems imminent from pressure, a few punctures may be made on each side of the raphe, at the most dependent point of the scrotum. These punctures should be protected by a wet dressing to encourage oozing, to improve the circulation, and to prevent infection. In milder cases, strapping (p. 727) will quickly reduce the edema, if the cause has been removed and a suspensory bandage is applied.

Cellulitis and Abscess.—Cellulitis and abscess of the scrotum are encountered clinically as phenomena in the development of urinary infiltration (p. 233).

Cellulitis after operation reacts kindly to irrigation and drainage unless the patient is much debilitated, or unless some suture or other foreign body remains in the wound.

Erysipelas.—The peculiar virulence of scrotal erysipelas is in striking contrast with the milder inflammations of this region. It is most frequently observed in the aged and debilitated, and may be spontaneous or due to trauma.

The disease begins suddenly with a chill. A small red blotch upon the scrotum spreads until one side or both are involved in an intense phlegmonous inflammation. The scrotum is enormously swollen, covered with blebs, and mottled by subcutaneous hemorrhage. The pulse is rapid, the temperature septic. The patient usually fails rapidly, the scrotum becomes gangrenous, and death closes the scene.

In the beginning, the rapidity of invasion and the superficial nature of the lesion distinguish it from urinary infiltration. In the later stages the two closely resemble each other.

Treatment.—Multiple free incisions parallel to the raphe, and the lavish use of 1% carbolic-acid wet dressings and hot carbolic baths daily should be employed. Tonics and stimulants may not be neglected; notably, tincture ferri chlorid in large doses and alcoholic stimulants with strychnin.

Gangrene.—Gangrene of the scrotum, whether due to urinary infiltration, infection, or injury, usually involves the greater part of the scrotum, is accompanied by considerable constitutional disturbance, and often terminates fatally, especially in the aged and diabetic. The testicles are always spared and swing bare and bald. As already noted, the skin of the scrotum heals with such marvellous rapidity that plastic operations are rarely necessary.

Treatment.—Stimulation, free incisions, wet dressings, and excision of sloughs as fast as they form are the main lines of treatment. Castration is never indicated.

Diphtheria.—Le Clerc¹ has observed and collected a number of cases resembling, clinically, an acute erysipelas, and which he attributes to diphtheria, the Klebs-Loeffler bacillus having been cultivated, either pure or in mixed culture, from the wound discharges.

Emphysema.—This occurs with general subcutaneous emphysema and with scrotal gangrene.

Scrotal Fistula and Calculi.—See p. 235.

ELEPHANTIASIS, LYMPH SCROTUM, LYMPH VARIX

This disease is rare enough in our latitudes to warrant a superficial treatment here, especially as the usual cause of lymph scrotum, the *filaria sanguinis hominis* (Bancroftii), receives due notice in all the larger Systems of Medicine.

Elephantiasis is a condition of chronic distention of the lymph vessels of any part of the body, whereby the skin and subcutaneous tissues become thickened and indurated and the part often enlarges to an incredible size. It occurs usually in the lower extremity and in the penis and scrotum. With the last we are here interested.

Etiology.—The cause of elephantiasis is obstruction of the lymph channels. Thus I have seen scrotal elephantiasis following extirpation of the inguinal glands.² Severe chronic inguinal adenitis may have the same unhappy effect. But the enormous elephantiasis, so frequent in the tropics, is due almost always to the *filaria sanguinis hominis*. The fascinating life history of the *filaria* has been studied by Lewis,³ Manson,⁴ Le Dentu,⁵ Mastin,⁶ Lothrop and Pratt,⁷ and many others. Born in some marsh or swamp, the embryo enters a man's alimentary canal in a sip of water. Thence it makes its way to the lymphatics, where, in some comfortable spot, it settles down for life and attains its full development. Here it is impregnated and pours into the blood-current an infinite stream of embryos. By night the blood is alive with them, by day not one can

¹ Guyon's Annales, 1898, xvi, 1102.

² Cf. Bull. soc. française de dermat. et syph., 1898, ix, 292.

³ On a Hematozoön Inhabiting Human Blood, 1872, Calcutta.

⁴ Med. Times and Gazette, 1875, ii, 542, 566; Trans. Path. Soc., 1881, xxxii, 285; Brit. Med. J., 1899, ii, 644.

⁵ Revue de chir., 1898, xviii, 1.

⁶ Ann. of Surg., 1888, viii, 321.

⁷ Am. J. of Med. Sciences, 19, cxx, 525.

be found where, a few hours before, were myriads: where they hide no one knows. But in the human host they cannot develop. To reach maturity they must be sucked up by a mosquito—a night-prowling insect. The mosquito, gorged with blood, returns to deposit her eggs and die in his (or rather her) native swamp, where from her corpse arise the *filariæ* ready to develop, to infest the water, and again to be swallowed by some unsuspecting man.¹

So much for the romance. The sorry fact is that these embryos, no larger than a leukocyte (or perhaps certain more corpulent ones—Manson), become impacted in the lymph glands or channels in such a way as slowly and progressively to obstruct the lymph flow. If this happens in the lower inguinal glands, elephantiasis of the lower extremity results; if in the upper chain, the scrotum and penis are affected; if in the iliac glands, *lymph varix* and *lymphadenoma* of the spermatic cord may result.

Chyluria (or hemato-chyluria) and *chylous hydrocele* are caused by rupture of a dilated lymphatic vessel into the cavity of the urinary tract or into the tunica vaginalis.

Symptoms.—Elephantiasis begins with recurring attacks of dermatitis and edema accompanied by fever. At first, there is between the attacks only a brawny patch upon the skin and a slight enlargement of the inguinal glands. As the disease progresses, the skin and subcutaneous tissues become thickened by an overgrowth of dense fibro-elastic tissue, and the vessels, especially the lymphatics, become enormously dilated. As the scrotum enlarges it drags down the skin of pubes and perineum and inverts the skin of the penis, leaving, finally, no trace of that organ, except a transverse slit on the anterior surface of the tumour. The tumour reaches incredible proportions. Wilkes removed a scrotum weighing 165 pounds, and Larrey mentions one weighing 200 pounds.

Treatment.—The *prophylaxis*, avoidance of unboiled drinking water in the tropics, need scarcely be insisted upon. *Curative* treatment is surgical. Though Flint² reports a cure of filarial chyluria by the use of methylene blue, I do not know that his experience has been repeated. Fortunately, ablation of the hypertrophied tissues is rarely followed by recurrence, though such an operation does not pretend to affect the mother worm or her ovulation. The chief danger of operation is the bleeding. This was successfully controlled in an operation for vulvar elephantiasis, at which I had the pleasure of

¹ Of late years there is a tendency to consider the mosquito the adequate intermediate host, as is the case in malaria. I have sketched the classic theory, although it will perhaps be proved incorrect.

² N. Y. Med. J., 1895, lxi, 737.

assisting, by Wyeth's hip pins and an Esmarch bandage.¹ It is essential to remove as much as possible of the indurated tissue, and yet to leave flaps to cover the testicles and penis. Radical cure of hernia may also be required. The strictest asepsis should be observed to avoid lymphatic absorption. In the smaller cases the inguinal glands may be removed.

TUMOURS OF THE SCROTUM

Cysts.—Small sebaceous cysts, shining white through the distended skin, occur on any part of the scrotum, but particularly on the raphe. They sometimes attain startling dimensions. Echinococcus cysts have been met with. A urinary pocket opening into the urethra behind a stricture has been mistaken for hydrocele. Jacobson² gives a detailed account of two cases of cystic disease of the scrotum, to which Tilden Brown³ has added a third.

Multiple minute blood cysts, doubtless capillary dilatations, varying in size up to that of a large pinhead, and sprinkled abundantly over the entire scrotum, are sometimes found after middle life.

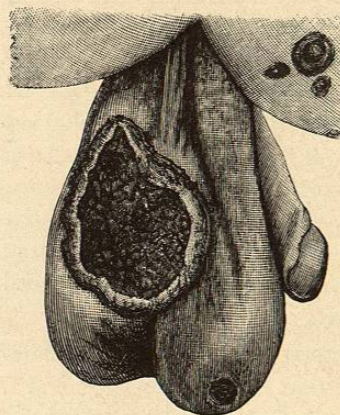


FIG. 163.—EPITHELIOMA OF THE SCROTUM IN A PARAFFIN WORKER. Three ulcers covered with scabs can be seen on the right buttock.

They are of a dark-blue colour and give rise to no changes in the skin and to no symptoms whatsoever, excepting their appearance, which annoys the patient. They may be cured permanently by touching each one separately with an electro-cautery, or pricking it and touching the raw surface with a nitrate-of-silver point.

Cases of *angioma*, *fibroma*, *lipoma*, *fibromyxoma*, *osteochondroma*, and *sarcoma* have been reported.

Epithelioma of the Scrotum

(*Chimney-Sweeps' Cancer*.—Soot seems to be the exciting cause of scrotal epithelioma (Fig. 163) in England, although in other countries those whose occupation brings them into contact

with this substance do not seem to suffer. Thus Warren⁴ states that he has seen it a few times in this country, but never among chimney-sweeps.

¹ Bullard. Med. Record, 1899, lv, 128.

³ J. of Cut. and Gen.-Urin. Diseases, 1895, xiii, 33.

⁴ Surgical Observations on Tumours, p. 329.

² *Op. cit.*, p. 565.

The disease begins as one or more small, soft warts or tubercles, usually at the lower forepart of the scrotum. These remain unchanged for a time, but finally indurate slightly, become excoriated, scab over, and ulcerate, the ulcer extending backward, and destroying, with more or less rapidity, the whole scrotum. Sometimes the testicles are involved, sometimes they escape. The ulcer is epitheliomatous. It has the hardened, irregular, purplish, everted, knotty borders; the hard, uneven, unhealthy looking base; the ichorous discharge, now sanguinolent, now purulent.

Death occurs by exhaustion, or by hemorrhage, if a large vessel be severed by the advancing ulceration. The disease continues local for some time. It is only tardily that the inguinal glands become involved.

Treatment.—Before the disease has assumed a malignant aspect it may be snipped or burned out. But when frankly cancerous an elliptical piece of the surrounding skin should be excised with the growth. If the testicle is involved, or if its integrity is doubtful, it had best be sacrificed. The inguinal glands, which enlarge late in the disease, should be treated according to the rules laid down for epithelioma of the penis (p. 686). The earlier the operation is undertaken the less the probability of relapse, though a second or third operation may succeed where the first has failed.