sore,[1] and wrongfully deciding that there is no syphilis because auto-inoculation takes. Hence the caution to be remembered: chancroids attacked by total gangrene are no longer inoculable, and an ulcer reproducing itself by inoculation may possibly be a mixed sore. Another caution is equally important: only practise auto-inoculation of a phagedenic chancroid under the nipple of a patient. There is always a chance that the new sore, produced upon a subject already predisposed to phagedena, may itself take on the same morbid action, but the chance is less under the nipple than anywhere else, except on the face.

Prognosis.—Chancroid does not endanger life, except very occasionally, from such complications as severe erysipelas, or extensive, sloughing phagedena, by opening a vessel or exciting peritonitis. Practically it may be said that chancroid does not kill; even the immense chronic ulcers of serpiginous phagedena eventually get well.

Certain results of chancroid, however, must not be forgotten. Extensive cicatrices left by phagedena may prove annoying by their subsequent contraction, and the actual destruction of the penis by phagedena practically unsexes the man. Then urethral chancroid is inevitably followed by more or less stricture of that canal at the seat of the lesion. So, also, may permanent phimosis be produced by the cicatrices of chancroidal ulcerations at the orifice of the prepuce. Chancroids of the pockets on either side of the frænum may, but very rarely do, eat into the urethra, and result in artificial hypospadias. Extensive adhesions of the prepuce to the glans penis may occur after chancroidal phimosis, as indeed after the simple inflammatory form.

CHAPTER II.

CHANCROID.

Prophylactic Treatment.—Local Treatment of Chancroid.—Local Treatment of Phagedena.—General Treatment of Chancroid.—Bubo; simple; virulent.—Treatment of Bubo.—Lymphitis; simple; virulent; syphilitic.—Treatment of Lymphitis.

Prophylactic Treatment.—As a rule, chancroid does not come under the surgeon's notice until it is already advancing and beyond the reach of any abortive measures other than actual destruction by caustics. But, on the other hand, it not infrequently happens that a crack or abrasion on the surgeon's finger becomes inoculated in handling chancroids, and then any prophylactic treatment short of caustics becomes valuable. Abortive treatment applied to chancroids naturally acquired is not as effective as against the same produced artificially by inoculation. All the

[1] Inoculation of a preëxisting tubercle-papule, or syphilitic ulceration, with the pus of chancroid, as well as mixed chancre, should be remembered as possibilities.

stronger mineral and some of the vegetable acids, caustic alkalies, and certain salts—as the sulphate of iron, chromate of potash, in solution in water, so weak as not to attack the epidermis—prevent the development of the chancroid if applied over the artificially inoculated point for a considerable time—about two hours—within a period of three to six, and occasionally twelve to twenty-four hours after inoculation has been practised (Rollet). The longer the time which has elapsed after the introduction of the poison the longer must the preventive solution be locally applied to render it inactive, and, naturally, if any portion (as by oblique puncture) has been introduced beneath the epidermis, this epidermis must be removed in order to allow the fluid to exert its power. According to Rodet and Rollet, a concentrated solution of citric acid yields the best results.

Treatment of Chancroid.—Once present in its character of true chancroid, no treatment yields as satisfactory results as the entire destruction of the ulcerated surface by an efficient escharotic, thus artificially imitating Nature, which sometimes at once destroys the poisonous character of the sore by total gangrene of the secreting surface. Any active caustic may be used, but among them three hold the most prominent places, as being easily manageable and least painful; these three are: nitric acid, sulpuric acid, and the red-hot iron. The latter is often objectionable as greatly exciting the patient's fears, but indeed needlessly so, for the actual cautery is perhaps the least painful of all; the idea, however, is repulsive to a patient. The caustic alkalies deliquesce, and are unmanageable, besides paining more than the acids; the latter remark holds good of the Canquoin, Vienna paste, etc. In applying a caustic, every portion of the sore should be thoroughly and absolutely destroyed, and all existing sores, should there be more than one; for, should any ulcer secreting virus be left active, it will speedily reinoculate the raw surfaces left by the separation of the eschars, and the result would be other chancroids, by auto-inoculation, larger than those first operated upon. Hence the rule: If cauterization be decided upon, burn every portion of every ulcer, no matter what its size. If there be sub-preputial chancroid, with phimosis, the folly of burning chancroids of the preputial rim is at once apparent. The same may be said of burning sores on the glans, or prepuce, if urethral chancroid exist.

To apply nitric acid, all that is necessary is to clean off and dry the ulcer, and place upon its surface a drop of nitric acid, with a match or glass rod, holding the surface exposed until the drop has partly dried, or until the pain has nearly ceased; then, to insure success, again to dry off the surface and apply a fresh drop. It is necessary to have a moistened sponge ready to absorb immediately any portion of the acid which may be running over upon the sound skin. Finally, the surface is washed, dried, covered with dry lint, and left to itself. The eschar

begins to separate in a few days, leaving a red, healthy ulcer, which may be dressed with dry lint, or with any of the mildly-stimulating lotions recommended for balanitis (p. 20); and, in a variable period, depending upon the size of the ulcer and the depth to which it was burned, cicatrization will ensue. Sometimes, when sub-preputial chancroids are burned, if the prepuce be tight, inflammatory phimosis may be occasioned, unless the patient keep at rest after the cauterization.

Sulphuric acid is best applied as the carbo-sulphuric paste of Ricord. This is formed by making a paste of pure sulphuric acid, with pulverized vegetable charcoal. It is applied upon the dried surface of the sore, and pressed down into all its inequalities with a wooden spatula. It dries on as a black crust, which separates after several days to leave a healthy, granulating, simple ulcer; or, more rarely, cicatrization goes on to completion under the scab.

In using the hot iron, its point should be carried down into every portion of the ulcer, until a black dead eschar of the whole surface is produced. Cold-water dressing is applied afterward, and anodyne given until pain has ceased.

All chancroids might be cured by this simple method of treatment, rest, cold, and astringent lotions being used afterward, to combat inflammation. Healing chancroids, however, need not be cauterized, nor should sores of the meatus urinarius be burned, nor very extensive ulcerations, except as a last resource, nor chancroids which are largely multiple, both on account of the uncomfortable degree of inflammation apt to be provoked, and the greater liability to leave some little secreting surface undestroyed, which may reinoculate the burned surfaces.

Of the three agents for destroying chancroid, nitric acid is the best. It is the most manageable and least painful (Canquoin) to the patient. It destroys only a limited depth of tissue, but yet enough for the purpose, if it be properly employed. No anæsthetic is required ordinarily in applying nitric acid or the carbo-sulphuric paste. With the actual cautery it is necessary.

When it is unadvisable to use caustic, or when the patient refuses to submit to the application, the surgeon is still possessed of remedies suitable to the disease.

It is well to remember that greasy local applications to chancroids are bad. They become rancid, and prevent the escape of the poisonous pus. Mercurial ointment is believed by Ricord to be of all the most harmful. Perhaps the best treatment for simple, uncomplicated chancroid, when not destroyed by caustic, is to cover the entire surface with powdered iodoform. The local action of this drug in chancroid is superior to any thing short of cauterization, but there are two objections to its use, namely, complaint of pain occasionally from sensitive patients,[1]

[1] A dilution of the powder with one-third of tannin is said, by Dr. C. C. Lee, to render the application painless.

where a considerable surface is covered, and the very penetrating, rather disagreeable odor of the remedy. The second objection may prove the most serious one, and patients may refuse to use the powder. In such a case, the simple application of a little dry scraped lint, often renewed, so as to absorb the pus as it flows, is a fair treatment. It keeps the parts clean, and allows the sore to run its natural course, and get well in due time. Another good expedient is dusting the surface with dry, powdered oxide of zinc, or calomel with a little camphor, or bismuth, and covering the whole with lint soaked in a weak solution of aromatic wine, one part to three of water, or alcohol, one part to two of water, or permanganate of potash, gr. j–ij to the ℥ j, or carbolic acid, one-half of one per cent. It is sometimes useful even to large surfaces to apply pure carbolic acid every other day, or a solution of bromine, ℥ ij to the ℥ j, dressing between-times with one of the above solutions. Such dressings should be frequently changed, as cleanliness is of the first importance. In the treatment of any chancroid, especially such as are situated near the frænum, where the lymphatics are most abundant, rest is of the greatest utility in preventing inflammation and the formation of suppurating bubo. For chancroid of the meatus, nothing is better than a little plug of dry lint, sprinkled with iodoform, and patience, with an alkaline diuretic, to render the urine less irritating, and the absolute avoidance of any sexual excitement or erotic thoughts calculated to stimulate erection. Urethral chancroid may be benefited by the same general means and the occasional injection of a mild solution of aromatic wine in warm water.

Sub-preputial chancroid requires no modification in treatment, unless there be congenital or inflammatory phimosis. The prepuce, however, should not be dressed back, for fear of paraphimosis. With phimosis frequent injections of the balano-preputial *cul-de-sac* with warm water are necessary for cleanliness, and to prevent the pus from accumulating and burrowing. After the washing, any of the above-mentioned stimulating lotions may be injected, or a gr. v–xv solution of the nitrate of silver (Ricord), which, according to this surgeon, acts also as a local anæsthetic.

For simple or erysipelatous inflammation of chancroid, the best treatment is absolute rest, and an elevated position of the organ, aided perhaps by a lotion of lead-water externally. Where the inflammation runs high, with phimosis, and the tension of the prepuce becomes very great, it should be slit up on the dorsum, or entirely cut away (circumcision), if it be very redundant. When the pus issuing from beneath the inflamed prepuce begins to smell badly, the indication is to cut at once to avert gangrene or phagedena. Truly, the cut surface nearly always becomes inoculated, in spite of the best precautions, but, if gangrene or phagedena be averted, the extent of simple chancroidal ulceration is comparatively of small importance. When the prepuce is slit

up, it is advisable to cauterize at once all the chancroidal ulcerations exposed, and the cut surfaces as well. For this purpose the hot iron is best, as the patient is under the influence of ether.

In the treatment of chancroid it is always advisable to keep the ulcerated surfaces, if possible, covered with lint or some substitute, to absorb the pus as it flows, and protect the parts which would otherwise lie in contact with the diseased surface and run the risk of inoculation.

In anal chancroid the merits of each case must decide whether it is allowable to employ cautery (hot iron). The greater the amount of tissue destroyed, the greater the degree of subsequent stricture. If an infected fistulous tract exists in connection with any chancroid, the latter should not be cauterized unless the former can be slit up, and similarly dealt with.

Gangrene, not phagedenic, should be left unmolested. The fall of the slough may be hastened by the application of a poultice of camomile-flowers (Hammond), to which a little permanganate of potash or liquor sodæ chlorinatæ may be added as a disinfectant, or some powdered charcoal, or yeast. Simple dressings for the healthy ulcer beneath are all that is required.

Chancroid of the pockets beside the frænum frequently undermine the latter, which, when very thin, may be accidentally ruptured, giving rise sometimes to considerable hæmorrhage from the artery of the frænum. To anticipate this, it is advisable to pass a double thread beneath the frænum, and tie both ends, letting the ligatures cut through. Where the prepuce is short, and there is much œdema about the frænum, looking toward paraphimosis, the repeated judicious application of collodion to the swollen skin (after drying it) may prevent the latter complication.

Where paraphimosis has come on, if it is reducible, or irreducible, without strangulation, absolute rest, collodion, and evaporating lotions, are called for; if there be irreducible paraphimosis with strangulation, the knife must be used to avoid gangrene.

Local Treatment of Phagedena.—The proper local treatment for phagedena is unsparing cauterization, effected by the free and careful use of nitric acid, the hot iron, or the carbo-sulphuric paste pressed well down into all the sinuosities. Success depends entirely upon the destruction of the whole secreting surface, and the previous preparation of the ulcer has a great deal to do with the result of treatment. All sloughs, overhanging edges, and bridges of skin, must be cut away, fistulæ laid freely open, as well as all sinuses and pockets, in which matter may have collected. Ether should be given in the case of large sores, since slowness and care are absolutely essential to success; finally, when the wreck is cleared off, the surface should be dried as thoroughly as possible, and then the escharotic which has been selected applied

with scrupulous care. Some morphine under the skin will tide the patient over the pain of the caustic. It is better to burn too much the first time, than to have to repeat the operation; the caustic will destroy less tissue than will a few days of natural advance of the ulcer left to itself, so that destruction of tissue is actually economized by judicious use of the caustic, even where the operation has to be repeated, which unfortunately is often necessary in bad cases. The indication for a second cauterization is furnished by the general appearance of the ulcer, or a return of the old pain, so characteristic of advancing phagedena, and which ceases after thorough cauterization. Erysipelas or other inflammatory complication is rarely lighted up by cauterization, an operation which, though severe in appearance, the experienced surgeon learns to regard with increasing favor.

When phagedena has attacked a virulent bubo in the groin, and in the large ulcer are found several lymphatic glands, undestroyed by the phagedena, riding out from its base, it is better to remove these before resorting to cauterization.

Sometimes these active local means cannot be employed, as where large vessels are exposed by the ulceration, when long and deep fistulæ exist, which cannot be thoroughly or safely acted upon; when the ulcer is exceedingly large, and the patient's condition will not warrant the application of caustic to so extensive a surface. Here other local applications are called for. Ricord considers a solution of the tartrate of iron and potash, gr. xx–xl to the ℥ j, almost a specific for chancroid, especially its phagedenic form. Carbolic acid may be used pure (but not over too large a surface, for fear of poisoning) every other day, the half of one per cent. solution being kept constantly applied. Bumstead mentions some successful cases by Hinkle from the use of permanganate of potash (℥ j ß to the ℥ j), put on every two hours, a solution of gr. x to the pint being constantly applied. Iodoform in powder is an excellent local application for phagedena. Erysipelas complicating phagedena sometimes on retiring leaves the ulcer in a healthy condition of repair.

Phagedena of the anus and rectum is rarely in a position to be burned. The surfaces must be kept separated, and the parts cleaned by syringing; enemata being given for every movement of the bowels. Subsequent stricture is combated by the careful use of bougies. The worst cases may call for lumbar colotomy. The old chronic sores left behind by phagedena in the femalevagina—p. 486 (*e.*)—are perhaps best managed by a free application of the actual cautery, with subsequent absolute rest and cleanliness, and tonic internal treatment. They are usually particularly obstinate. Bumstead speaks of the good effects of powdering the surface several times daily with persulphate of iron. During treatment the parts should be kept separated by pledgets of oakum. These cases are rarely seen except in broken-down prostitutes, old hospital cases.