of a medical man, who has had three attacks of the kind. When I first met with these cases, I was quite at a loss regarding them, but further study of numerous cases has shown them to be ulcerated gummata of the glans.

In arriving at a diagnosis of the chancroid, as well as of other venereal diseases, especially in their early stages, the value of the confrontation of patients should not be forgotten. The recipient can have no other disease than that possessed by the giver, in whom the symptoms are probably more marked, because they have had a longer time for development.

I would also call the reader's attention to the possibility of the double inoculation of the chancroidal and syphilitic poisons, or to what has been improperly called the "mixed chancre," which we shall consider hereafter; and again to the occasional development of a chancroid upon the old induration of a chancre, which is very apt to lead to error in the diagnosis, on account of the hardness of the base of the sore.

After all, cases do occur, in which autoinoculation is impracticable, and in which the diagnosis is for a time impossible. A degree of rapidity and facility in diagnosis with regard to venereal diseases, is often demanded by patients and even by physicians, which it is simply unreasonable to expect. The specialist is expected to be able to decide at once in all cases, from a single examination, and often with a very imperfect knowledge of the history, whether a given sore is a chancroid, a chancre, an herpetic ulceration, etc. Now, the same latitude should be allowed here as obtains in other diseases. Doubtful cases will occur, with regard to which the most experienced specialist must for a time be undecided, and he will, if an honest man, confess his ignorance rather than assume knowledge which he does not possess.

It is important to distinguish between the chancroid and epithelioma or cancer of the penis. I was called in consultation by a country physician, to see a case of supposed venereal ulcer of the glans penis. The patient was a married man, and, the diagnosis of his doctor having become known, his reputation was ruined. I found it to be a case of epithelioma, and amputated the organ.

Epithelioma is more frequent than true cancer, in the proportion of five to one (Demarquay). In the majority of cases, it commences in the glans or prepuce, and may extend to the corpora cavernosa or involve the whole penis. The glands in the groins are subsequently engorged, and become deeply and extensively ulcerated.

Epithelioma usually commences as an irregular warty excrescence, which soon ulcerates, and presents, at first, superficial erosions covered with sanious matter. There follow deep and irregular excavations and cauliflower excrescences. The surrounding skin is tumefied and scattered over with tubercles, which in their turn become degenerated and add to the extent of the disease. "By pressure upon these papillary tumors, plugs of flattened or cylindrical epithelial cells, resembling the sebaceous matter of comedones, can be squeezed out." (Klebs.)

True cancer may be either of the scirrhous or encephaloid form, but more frequently the latter. Lebert says that in most cases the

form is intermediate between the two. True cancer may at the same time affect distant organs, while the influence of epithelioma is never seen beyond the inguinal glands. In a large majority of cases, these affections occur in persons who have permanent phimosis, either congenital or accidental.

The distinction between epithelioma and true chancre on the one hand and the chancroid and truly syphilitic lesions on the other, is not always easy. The amount of pain is *not always* a reliable sign, for this may be absent for some time even in true cancer. The diagnosis, however, may usually be made out from the history of the case, from the appearance of the surface, base, and edges of the ulcer, and from its progress. In doubtful cases, the patient should have the benefit of a trial of treatment adapted to venereal ulcerations (whether chancroidal or syphilitic) before amputation is resorted to.

Prognosis of the Chancroid.—The chancroid, aside from its complications, is of less serious import than either the chancre or gonorrhœa; less so than the chancre, because it does not depend upon and is never followed by constitutional infection, and less so than gonorrhœa, because it does not result in deepseated urethral contractions. A chancroid at the meatus will indeed probably produce a stricture at this point, but one which is amenable to treatment and unattended with danger.

The presence of complications may add seriously to the gravity of the disease. Phimosis may result in gangrene and loss of the prepuce. Lymphitis or adenitis may confine the patient to his bed for months; and, above all, the occurrence of phagedæna may involve the destruction of important tissues or organs, or may be the source of misery and suffering for many years. These complications will be described in another chapter.

The chief point, however, which commonly excites the anxiety of the patient is with regard to constitutional infection, and of this the surgeon may assure him there is no danger.

Pathological Anatomy.—Kaposi[1] gives the following description of the microscopical appearances of the "soft chancre" (chancroid):

"Microscopical examination of a perpendicular section, including the margin, the inflamed parts in the neighborhood, together with a portion of the floor and the inflamed base of the ulcer, shows that the portion of the skin occupied by the chancroid consists of two parts, which have evidently undergone different anatomical changes.

"From the floor of the ulcer (Fig. 112, *cd*) to a considerable depth in the corium is a uniform and uncommonly thick cell-infiltration, which terminates sharply at the line *fg*. This infiltration is continued beneath the intact papillæ of the margin of the ulcer (*el*) and laterally far beyond the limits of the floor (*k*). The tissue bordering on the infiltrated mass (*fg*, *hi*) is composed of loose meshes, and ex-

[1] Syphilis der Haut und der angrenzenden Schleimhäute, 1 Lieferung, s. 42. Wien, 1873.

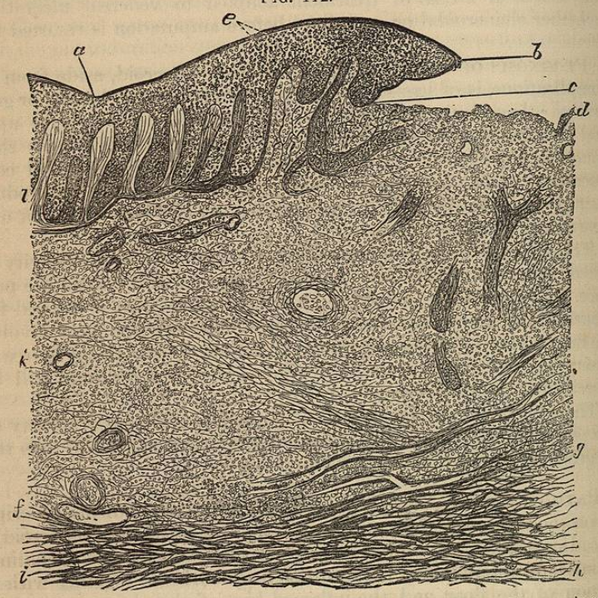
hibits scattered cells with a large nucleus, that is well brought out by carmine.

"In the swollen margin (*ab*) a number of the papillæ (*e*) lying nearest to the floor of the ulcer are thickened and closely infiltrated with cells. The layer of Malpighian cells between these papillæ is thickened.

"The floor of the ulcer (*cd*) is formed by the exposed cell-infiltrated corium, and is destitute of papillæ. Both the corium and papillæ, wherever infiltrated with cells, exhibit numerous enlarged vessels, the most of which are bloodvessels, but a few are lymphatics.

"Under a high power, the cell-infiltrated portion consists of a close network of partly narrow, partly broad bundles of fibres with

FIG. 112.



Section of a chancroid. Hartnack, oc. 3, obj. 4. (After Kaposi.) *ab*, swollen margin of the chancroid. *cd*, floor of same. *bc*, epidermis. *e*, undermined border. *cd*, *fg*, tissue infiltrated with small cells and traversed by several dilated vessels. *fg*, *hi*, tissue subjacent to the base of the chancroid, composed of large œdematous meshes free from cellular infiltration. *e*, enlarged papillæ infiltrated with cells. *k*, continuation of the tissue infiltrated with cells beneath the papillæ at the margin of the ulcer, which still remain intact.

faint contours, in which is deposited a great number of nucleated and evenly distributed cells, some of them very large and resembling lymph-corpuscles, and others smaller. The cells lying near the floor of the ulcer and the neighboring parts are mostly small and irregular in outline with scattered nuclei. Free nuclei and nucleoli are also found in large numbers.

"In the deeper tissues the cells have generally the appearance of inflammatory cells, but there are also many smaller ones.

"Of great interest is the remarkable thickening of the walls of the vessels, the cavities of which appear to be enlarged both in the infiltrated and the neighboring œdematous portions.

"The degeneration of the tissue and of the infiltrated cells takes place only in the upper portion, and to an extent which is but limited in proportion to the extent and depth of the infiltration. Interstitial abscesses do not exist. We have not found any characteristics which would enable us to distinguish the cell-infiltration of the corium and papillæ or the subsequent degeneration of the same from similar processes of simple origin."

TREATMENT OF THE CHANCROID—*Prophylaxis*.—The use of a condom will protect those parts which it covers from contagion, but the neighborhood of the root of the penis, as the scrotum and pubes, will still be exposed. As Ricord was wont to express it in his lectures, "carrying an umbrella over the head in a rainstorm will not prevent the feet from getting wet." Whether any such protective covering has been used or not, the genital organs should be assiduously cleansed after any suspicious connection, especially in those folds, as in the furrow at the base of the glans, where contagious matter is most likely to be deposited.

General Treatment.—The internal use of mercury has no beneficial influence whatever upon the chancroid, which continues in a state of stubborn persistency, or even progresses, after the system is fully under the influence of this mineral. This statement is not a mere inference from the distinct nature of the chancroid and syphilis, but is founded upon experience. I was fully convinced of the fact by personal observation, and ceased to employ mercury for "soft chancres," several years before the distinction between the two species was recognized. Since abandoning it in my own practice, I have had numerous opportunities of observing other surgeons administer mercurials for the chancroid, and my former opinion has only been confirmed.

In most instances no *general* treatment is required, except that which common sense would dictate, and which has for its object to place the patient in a healthy condition and thereby enable nature untrammelled to accomplish the work of cure. For this purpose, the secretions should be attended to; a plain but nourishing diet administered; and congestion and inflammation avoided by maintaining a comparative state of quietude. Nocturnal erections are not only painful but interfere with cicatrization, and should be controlled by the means mentioned when speaking of chordee.

Abortive Treatment.—This treatment has for its object the removal or destruction of the virulent ulcer, and the substitution for it of a simple wound, the tendency of which shall be to heal. The removal of the ulcer is accomplished by cutting instruments; its destruction by the more powerful caustics.

Practically, we find that the *excision* of a chancroid is rarely suc-

cessful. However carefully the sore and the surrounding surface may have been cleansed of its secretion before the operation, the fresh wound usually becomes inoculated; either the incision has not been carried wide enough from the "sphere of specific action," or in spite of our precautions, some of the virus has remained upon the surface; and we now are worse off than before, because we have a large virulent ulcer instead of a small one. For this reason, excision should be employed only in certain situations, as in cases of chancroids upon the margin of the prepuce or the free border of the labia minora, where the knife or scissors can be carried wide of the ulcer, and the bleeding surface should be freely cauterized, so that it may for a time be protected by an eschar.

Destructive cauterization is much more frequently employed than excision; *but is only adapted to the early stage of the chancroid*—say within the first five or ten days of its existence—when it may act as a true "abortive" method, cutting short the duration of the ulcer, preventing inoculation of parts in the neighborhood, and averting all danger of ganglionary reaction. A few years ago it was much more frequently resorted to than at the present time, and patients were subjected to much suffering from which they might have been spared. The chancroid under proper attention to cleanliness and mild local applications, will in the great majority of cases soon take on reparative action, and with the discovery of the healing power of iodoform, we are now able to obtain even better results than formerly, when cauterization was the rule and not the exception in treatment. In private practice we generally see chancroids before they have become phagedenic, when they can be cured by the comparatively mild means to be spoken of. *Let it be understood, then, that destructive cauterization as an abortive method is recommended solely in the earliest stage of the chancroid, and when it shows a tendency to phagedæna.*

If applied sufficiently early, it prevents the occurrence of virulent buboes by removing the source from which the poison enters the lymphatics; but if deferred until a bubo has commenced, the latter goes on to suppuration unchecked, and may furnish inoculable pus in the same manner as if the chancroid had been allowed to remain. Even the simple bubo is often benefited by destruction of the ulcer and undergoes resolution.[1]

Destructive cauterization is impracticable when the chancroid cannot be fully exposed, as in consequence of phimosis, concealment within the urethra, os uteri, etc. It is inadmissible in ulcers situated directly over the urethra either in the male or female on account of the danger of opening this passage; for a similar reason, in chancroids of the deeper portions of the vagina, the walls of which are in contact with the bladder, rectum, or peritonæum; in those upon the margin of the meatus, from the fear of the cicatrix occasioning stricture; and, finally, in all cases in which the presence of other ulcers in the neighborhood, which cannot be subjected to the same treatment, would expose the wound after the fall of the eschar to a second inoculation.[1] Thus it would be useless to attempt the destruction of a chancroid upon the margin of the prepuce in a case of phimosis with concealed chancroids within, since the secretion from the latter would be sure to inoculate the wound after the slough comes away.

[1] Rollet, Gaz. méd. de Lyon, March 1, 1858.

If the application of the caustic has been successful, a healthy granulating wound will be left on the fall of the eschar. If the sore still present the appearance of a virulent ulcer, even only over a portion of its surface, the caustic should be reapplied.

Choice of a Caustic.—Works upon materia medica inform us that the nitrate of silver is superficial in its action, and incapable of affecting the tissues beyond the surface to which it is applied, yet this is the caustic selected by the great majority of the profession for the purpose of destroying a chancroid! Let a patient with a rent, abrasion, or ulceration following suspicious intercourse, apply to any one of four doctors out of five, "as doctors run," and his sore will be daubed with a stick of *lapis infernalis*. With what result? The part is irritated and the patient's suffering increased; the symptoms are obscured and an accurate diagnosis rendered for a time difficult or impossible; if the sore heals, the nitrate has the credit of destroying a chancroid, or, perhaps, of "preventing constitutional infection;" at any rate the patient's mind is relieved by the idea that "something has been done," and the surgeon may flatter himself that *he* has *done* his duty. I feel tempted to apply to this indiscriminate and senseless mode of practice the adjective which, in Latin, is given to the "lapis" employed!

The stick nitrate of silver is capable of destroying a chancroid only in the very earliest stage of its development, and even then cannot be relied upon with the same certainty as the stronger caustics. Still it has been used with success by Ricord and others for the destruction of the sore resulting from a successful artificial inoculation. If employed for this purpose, the epidermis covering the pustule should be removed, and the cavity thoroughly cleansed of its secretion. A sharpened crayon of the nitrate should then be bored into the surface of the underlying ulcer, or a small fragment from the extremity of the crayon be broken off and be fastened in place by means of a strip of adhesive plaster. This dressing may be removed at the end of forty-eight hours, and the wound be subsequently protected by plaster or a bandage.

Of the strong caustics which are of more general application, the most noteworthy are the sulphuric and nitric acids, chloride of zinc, Vienna paste, the pernitrate of mercury, strong solutions of caustic potassa, and the actual cautery.

Of these, frequent trials have led me to give the preference to sulphuric acid, in the combination which has been so highly recommended by Ricord, Cullerier, and others, and which is known as the "carbo-sulphuric paste." This paste is easily prepared by simply saturating willow charcoal with strong sulphuric acid. The ingre-

[1] De la méthode destructive des chancres, par M. Dron; Annuaire de la syph. et d. mal. de la peau, Paris. Année, 1858, p. 202.

dients should be mixed in a glass-stoppered bottle, which should be kept standing in a tumbler to receive the moisture which is apt to collect around the stopper and flow over upon the sides of the bottle. The paste is to be applied by means of a glass rod, or a glazed crockery spatula. The advantages of this paste are the facility with which it enters every nook and crevice of the ulcer, the thoroughness with which it does its work, and especially the fact that it forms a dry scab, which, together with the slough beneath, is very adherent, and often remains until the sore is nearly healed. Meanwhile, the secretion is so diminished that the dressings require but infrequent changes, and the danger of successive inoculations in the neighborhood is materially lessened. The chief objection to it is the pain produced by its application, which is decidedly greater than that from nitric acid. A patient who had recently tried both at a short interval, told me he thought "the paste hurt him eight or ten times as much as the acid," but the former accomplished what the latter had failed to do.

Nitric acid is preferably applied by means of a glass rod with a rounded extremity; a "drop bottle," with a tapering glass stopper, the point of which extends nearly to the bottom of the flask, is still more convenient; but a simple piece of wood, as an ordinary lucifer match, will answer. Brushes of fine glass are objectionable, since the filaments are liable to break off upon the surface of the sore and excite irritation. The pain is for an instant severe when the acid first touches the ulcer, but becomes much less acute on subsequent applications, of which there should be several in order to render the destruction complete. I usually occupy several minutes in making these applications, watching the effect produced, and judging by the changes which take place in the tissues when enough has been applied. Any residue should be carefully removed or neutralized by an alkali, and the neighboring surfaces be protected from contact by the interposition of dry lint. A water dressing may be substituted as soon as suppuration takes place.

The liquor hydrargyri pernitratis may be applied in a similar manner; I am not aware, however, that it possesses any advantages over nitric acid, and it is attended with some danger of producing salivation or even alarming symptoms of mercurial poisoning, although the surface to which it was applied may have been quite small in extent. Such an occurrence is rare, but none the less to be avoided, as may be seen from a case reported in the London *Lancet* for Jan. 3, 1874, p. 41.

Potassa cum calce made into a paste and spread upon the chancroid, where it is allowed to remain from five to fifteen minutes, is another convenient means of applying the destructive method.

A solution of caustic potassa, two drachms to the ounce of water, has proved beneficial in my hands in cases of phagedæna, and particularly in cases of large chronic chancroids complicated with much thickening of the tissues. Its application is not very painful, and should be for a time followed by the water dressing.

A valuable caustic, judging from the high encomiums bestowed upon it by many French surgeons, especially of the Lyons school, is

to be found in "Canquoin's paste," composed of equal parts of chloride of zinc and flour, which was first recommended for the destruction of the chancroid by MM. Rollet and Diday.

The use of the actual cautery in the treatment of chancroids had been almost abandoned, when it was recently revived by Dr. Henry G. Piffard,[1] of New York, who employs a piece of platinum wire bent upon itself and brought to a white heat by a small galvano-cautery battery. In seven cases in which it was applied at the Charity Hospital, the duration of the lesion varying from a few days to several months, the average time required for the healing of the sores is said to have been eleven and a half days—surely a very satisfactory result. Paquelin's thermo-cautery is also a convenient apparatus for the purpose. Within a few years I have used this method, but find it beneficial in small sores.

Local Applications.—As already remarked, most chancroids will heal under attention to cleanliness and suitable local applications and dressings.

A point of no little importance is to place the ulcer under such conditions as to favor a return of blood from the part. Thus, if it be seated on the genitals, and especially if it be of considerable size, it will be well to keep the patient in a recumbent posture with the hips elevated by means of a pillow. If it be on the penis, this organ should be kept elevated upon the abdomen both during day and night. Friction of the clothes and nocturnal erections should, if possible, be avoided.

'It is evident that the form of dressing must vary with the situation of the sore. If the latter is seated between two opposed layers of mucous membrane, as in the balano-preputial fold or within the vulva, a dry dressing will be the best, and will be kept sufficiently moist by the secretion of the part. If the sore is upon the external integument, the dressing must be kept wet, otherwise it will adhere to the surface; the patient will shrink from changing it as often as it is necessary; and the violence done to the ulcer by its removal will open new fissures to be inoculated by the virus.

The advantages of dry lint are not generally appreciated. *There is no better dressing for most chancroids situated upon mucous membranes.* Obtain the "patent lint" so called, and tear it into shreds; place a mass of this charpie over the ulcer and draw the opposite fold of mucous membrane over it. The "prepared absorbent cotton," now obtainable of druggists, is also excellent. The sore is thus isolated, and the lint absorbs the discharge as fast as it is secreted; of course the dressing should be changed before it becomes soaked. The only obstacle in the way of this form of dressing is the false idea of the patient that some "wash" is required.

Patients often inquire whether they should cleanse the sore at the time of changing the dressing. I commonly tell them that it is better, with a piece of soft lint and without friction, to absorb any moisture or discharge upon the surface around the sore, but to let the

[1] Archives of Clinical Surgery, Nov. 1876.