LESSON VI.

Progress of the Syphilitic Infection—Course of the Disease beyond the Point of Inoculation—Infecting Cells Following the Course of the Lymph Vessels Carried by the Lymph Current to the Lymphatic Glands—Detention in the Glands from Mechanical Causes—No Evidence yet of Constitutional Disease—Recent Painless Gland Enlargements Strong Presumptive Evidence of Syphilitic Infection—Final Passage of the Diseased Cells or Germs into the Receptaculum Chyli, and from thence into the General Blood Current—The Period Intervening between the Inoculation and the Entrance of the Disease Germs into the General Circulation termed *the Initiatory Period of Syphilis*.

PROGRESS OF THE SYPHILITIC INFECTION.

The term CONTAGION has been used to designate the act by which, through cell contact, the syphilitic influence is conveyed from a diseased to a healthy person.

By means of the influence thus communicated, proliferation and accumulation of degraded cells, at the point of original contact (or inoculation), are claimed to result in the establishment of the initial lesion of syphilis, or *chancre*, in its various forms.

The course of the disease beyond this point is indicated, *à priori*, by the known fact* that all integumentary and cellular tissue are pervaded by lymph spaces and channels, which lead more or less directly into lymphatic vessels, and that the lymph current is constantly flowing *from* the tissues *toward* the lymphatic vessels and the glands in which they terminate.

Therefore a degraded germinal cell (syphilitic) introduced into the tissues (as by an inoculation), unless carried directly into the interior of a blood-vessel, must (itself, or its vitiated descendants) of necessity sooner or later be carried along by the lymph current to and

* Stricker's Human and Comparative Histology, Sydenham ed., vol. i. pp. 307 et seq.

into the gland of connection.* All clinical observations confirm this view: first, in the discovery of indurated lymphatic vessels leading from the point of inoculation to the gland in connection; second, by the subsequent enlargement and induration of such glands; third, their acceptance as a necessary sequence of the inoculation, and as positive proof of the nature of the disease.

The process through which the syphilitic influence thus gradually advances and finally invades the general system is termed the process of SYPHILITIC INFECTION.

The progress of the *syphilitic infection*, from the date of its *genesis* at the point of inoculation to its characteristic appearance in the glands nearest the point of inoculation (the glands of connection), varies in different persons, from causes not thoroughly settled, but which are indicated in note on page 96.

The degraded cell elements, then, effecting an entrance into the substance of the lymphatic gland, are here detained by the peculiarities of the gland structure, and perhaps by other inhibitory influences, for a period varying, in different instances, from twenty to sixty days. This period is recognized by all clinical observers, and has been described as the second incubation of syphilis. It is certain, however, that no syphilitic influence has yet been discovered in the general blood current during this period, and there is sufficient reason to suppose that the diseased elements are confined to the glands of connection, and those intervening more deeply between these and the thoracic duct.†

* "The wandering red blood globules mostly again return into the circulation through the lymphatics. The wandering white blood corpuscles probably return into the circulation in the same way." — Wagner's Manual of General Pathology, Am. ed., p. 151.

† A similar inhibitory influence, exerted by the lymphatic glands in cancerous diseases, is cited by Virchow, in his Cellular Pathology, Am. ed., p. 221, with the following explanation: "We can account for this by no other supposition than that the gland collects the hurtful ingredients absorbed from the breast, and thereby for a time affords protection to the body."

It has been suggested that if the disease were really so localized, prompt *enucleation* of the initial lesion and of the affected glands might prevent general infection. It must be remembered that the infective cells, each of which is potent to act as a starting-point for systemic infec

The glands of connection become gradually enlarged, apparently through the proliferation and accumulation of cells in their interior.

When the initial lesion is located upon the genital apparatus, on the glands or on the body of the penis in the male, or on the labiæ or within the vulva in the female, the lymphatic glands of the groin become enlarged, so that, as a rule, several may be distinctly recognized by the touch, varying from the size of a small pea to that of a large bean. Sometimes these enlargements are apparently confined to the side corresponding with the initial lesion—sometimes to the opposite side; usually, however, the glands of both sides are more or less enlarged. Hard, nearly or quite painless, and movable, their *gradual accession within two or three weeks after a suspicious venereal exposure* is strongly indicative of syphilitic origin, without regard to the character of the *local lesion*. If this is present and indurated, the syphilitic character of the trouble is no longer doubtful. It must, however, be borne in mind that glands enlarged through the influence of scrofula cannot be with certainty distinguished from those of syphilitic origin.

They are found in the same locations, and, though usually less positively indurated, are still sufficiently so to prevent certain diagnosis. When the initial lesion is on the lips or in the mouth, the submaxillary gland is affected. Wherever situated, it is always the *glands of*

tion, are not only present in untold numbers at the point of inoculation, but that (as shown by Beisiadecki's microscopic researches) the walls of the intervening lymphatic vessels are lined if not packed with them. Hence any proposed surgical extirpation of the disease must imply the entire removal of all the lymphatic connections of the initial lesion and the glands of connection. A procedure not only without sufficient promise of benefit at this stage of the infection, but even at the earliest date after inoculation, the necessary ignorance as to the degree of implication of the lymph spaces and vessels in the vicinity of the inoculation would in all probability render all such means of preventing the spread of the infective processes of uncertain value.

Early excision of the initial lesion may, however, be found to modify the intensity of the subsequent general infection. My own experience in twelve cases of excision during the past eight years would warrant this inference.

connection (*i.e.*, those nearest to the seat of inoculation) which are involved. Such enlargements are called syphilitic *buboes*.

The complete freedom from true inflammatory action which has been shown to characterize the induration of the initial lesion of syphilis, and the lymphatic vessels in connection with it, is equally characteristic of the enlargement and induration of the associated lymphatic glands. When attaining sufficient size to interfere with freedom of motion of a part, or where from any cause they are subjected to undue pressure, a degree of tenderness may result. From the same cause inflammation and even suppuration may occur in highly scrofulous subjects. Such accidents, however, are exceptional, and do not materially lessen the diagnostic value which attaches to *recent and painless* enlargement of lymphatic glands.

The progress of the syphilitic infection, which has been steady and persistent from the moment of inoculation to the engagement of the nearest lymphatic glands, appears now to be arrested. Gradual increase in their size and density alone indicates the activity of the infective process, until, after a period (varying in different instances from twenty to forty days), evidences of constitutional infection may appear.

Access from the surface to the general blood current, through the lymphatic spaces and vessels, *necessitates* passage, 1st, through the gland in immediate connection; 2d, through any other glands or vessels which may intervene between them and the great lymph channels; passage from thence into the general blood mass is immediate.

Thus, the delay between appreciable implication of the glands of connection and earliest evidences of constitutional syphilis is explained in accordance with known histological and physiological laws. Hence, it is only *after* a time sufficient for the passage of the diseased elements through the natural barriers, the lymphatic glands, to the general blood channels that systemic infection can take place.

With this view of the *progress of the syphilitic infection*,

the interval between the date of inoculation and the introduction of the diseased elements into the general circulation may be appropriately termed the INITIATORY PERIOD OF SYPHILIS.

LESSON VII.

Varieties and Complications of the Initial Lesion of Syphilis—The Indurated Papule—2. The Dry Scaling Patch—3. The Chancrous Abrasion—4. The Saucer-shaped, Non-suppurating Chancre, with Indurated Base and Edge—5. The Elevated, Moist, Velvety Papule—Modifications of the Foregoing—1. The Mucoid Chancre—2. The Inflamed or Suppurating Chancre—3. The Phagedenic or Gangrenous Chancre—Modifications of the Initial Lesion of Syphilis from Implantation of Chancroid or other Secretions upon it.

(1) The initial lesion of syphilis begins by a process of UNDUE GROWTH and MULTIPLICATION of normal germinal cells, induced by contact (through a lesion of mucous membrane or integument) with DISEASED or DEGRADED cells derived from a person suffering from SYPHILIS.

(2) Cells thus generated accumulate at the point of initiation, in a circumscribed portion of the surrounding and underlying tissue, and also in the walls and interior of the blood and lymph vessels of the tissue so implicated, and thus form a characteristic neoplasm, which is termed the *Initial Lesion of Syphilis*—of which there are five characteristic forms, namely:

(1) The Indurated Papule.
(2) The Dry Scaling Patch.
(3) The Chancrous Abrasion.
(4) The Saucer-Shaped Non-Suppurating Chancre, with indurated base and edge.
(5) The Elevated, Moist, Velvety Papule.

And as modifications—

The Mucoid Form.
The Inflamed or Suppurating.
The Phagedenic or Gangrenous.

Also modifications arising from implantation of the *Virus of Chancroid* or other *Vicious Secretion*, upon the Initial Lesion of Syphilis of any one of the above-named forms.

The initial lesion of syphilis may be situated at any

point on the surface of the body, or it may be concealed within the orifice of the meatus urinarius, the anus, or the mouth.

The differences in form of the initial lesion of syphilis are the legitimate and direct results of interference, to a greater or less degree, with the circulation of the tissues, at or beneath the point of initiation, of the abnormal cell-growth. Thus, in regard to the first-named form:

(1) The indurated papule is a dense neoplasm in the cellular tissue, *movable* under the skin, and hence not materially impeding its functions. Complete absorption of this morbid growth may take place, and the organism become thoroughly contaminated with syphilis, without the occurrence of any open lesion.

(2) The dry scaling patch always occurs upon integument, and the cell accumulation is diffused and quite superficial, producing an induration which to the touch is like *parchment;* hence the term "*parchment induration,*" applied to this lesion. Interference with the circulation in this case is not sufficient to prevent the evolution of the epidermis, but its development is impeded, and layers of dry epidermic scales cling to its surface, giving it a characteristic scaly appearance.

(3) The chancrous abrasion occurs upon an indurated papule, which by peripheral cell-growth has come to involve the circulation of the cutaneous or epithelial structures to the extent of rendering them friable and easily abraded. Imperfect evolution of the underlying cell elements results in a free shedding of the superficial layers from the moist surface of the lesion. Under the microscope these are seen to be like laminated epithelial scales, and constitute a significant mark of *chancrous abrasion.*

(4) The saucer-shaped non-suppurating chancre, with indurated base and edge. In this form a characteristic loss of tissue has taken place (almost entirely at the expense of the adventitious cell-growth), through the continuance and extension of the causes which produce the *chancrous abrasion;* loss of tissue, as in that case, also occurring, not through the suppurative or ulcerative process, but by that which Virchow has termed a *necrobiosis* (death from altered life), that is, from a gradual obstruction to the processes of nutrition of the affected part. The secretion of this form of initial lesion is scanty, free from pus, and presents under the microscope the squamous epithelial elements found in the secretion of the chancrous abrasion.

(5) The elevated, moist, velvety papule, is neither more nor less than the previously described lesion, "*The saucer-shaped non-suppurating chancre, with indurated base and edge,*" upon which the *granulation tissue* of Billroth has been developed. This tissue is described in Billroth's "Pathology," Am. ed., p. 93, under the head of "*Proliferating fungus granulations.*" He says, "The most frequent cause of the development of such granulations is *any local impediment to healing, such as rigidity of the surrounding skin,* so that the contraction of the cicatrix is difficult." This rigidity in the case of the moist velvety papule is caused by the characteristic induration of syphilis, always associated with this form of initial lesion.

We shall consider next the *modifications* to which the different forms of initial lesions are subject.

(1) The mucoid chancre, is that modification of the *moist velvety papule,* which arises from the occurrence of a diphtheritic membrane, or deposit, upon its surface, giving it the appearance of that secondary or constitutional manifestation of syphilis known as the *mucous papule.* This modification usually takes place coincidently with the appearance of mucous papules or patches in other localities. The *induration* associated with the *initial lesion,* thus modified, and its entire absence in the *mucous papule,* will constitute the distinguishing difference between these lesions.

(2) The inflamed or suppurating chancre. In any of the open initial lesions subjected to persistent irritation from friction of clothes, repeated coition, application of caustics, alcoholic excess (especially in the scrofulous and debilitated), an inflammatory action may be set up. This soon results in pus formation, and a more or less active necrosis, so like in character to

that occurring in chancroid, that errors in diagnosis are easy. The, now purulent, secretion of the chancre is found to be contagious, producing by auto-inoculation a sore, identical with true chancroid, thus further obscuring the differential diagnosis. Previous history, and the induration more or less distinctly marked, will usually be sufficient to indicate the true character of this lesion.

(3) The phagedenic or gangrenous chancre. In certain cases of the inflamed or suppurating initial lesion the indurated tissue becomes livid in color quite suddenly, and exhales a peculiar sickening odor, announcing the occurrence of gangrene. This results from arrest of the vascular supply to the induration, through an aggravation of the causes which led to the antecedent *necrobiosis*. This view is sustained by the known influence of mercury in arresting the destructive process thus set up in the initial lesion, while in any other form of gangrene the influence of this drug is known to be pernicious, and also from the fact that the loss of tissue is usually limited to the induration. When the death of tissue occurs by molecular continuity, the lesion is said to be PHAGEDENIC; when the induration sloughs out *en masse* it is called GANGRENOUS. The influences which tend to convert the inflamed or suppurating initial lesion into the phagedenic or gangrenous are *predisposition to suppuration from any cause*, constitutional dyscrasia, alcoholic excess, low, irregular life, etc.

All forms of the initial lesion in syphilis may be modified and more or less obscured by the occurrence of ulceration from any cause upon the site of syphilitic inoculation.

No surface changes at the point of entry of the syphilitic virus or principle can affect the course of the syphilitic infection after the disease germ has passed into lymph channels (spaces or vessels) below that surface. The characteristic local evidences of syphilitic infection may, however, be modified and more or less completely obscured by accidental lesions, such as herpes, resulting from contact with vicious vaginal and

uterine secretions, or other causes, or by contact of the lesion of syphilitic inoculation with the virus of chancroid.

Such lesions pursue their course uninfluenced by the syphilitic cell-proliferation previously inaugurated, and may thus obscure diagnosis until evidences of constitutional infection are manifest.

Hence, wherever the *possibility* of a syphilitic infection is present, any breach of tissue, whether a simple abrasion or fracture of mucous membrane or integument, or any vesicle or pustule, whether from general or venereal causes, whether healing as if simple or pursuing the characteristic course of the chancroid, then in such case, opinions in regard to the *presence* or *absence* of the *contagium of syphilis* must be reserved until such time, from the date of latest exposure, *as will equal the longest period known to obtain between inoculation and syphilitic infection*, as indicated by induration of the local lesion and enlargement and induration of the adjacent lymphatic glands. This is not less than forty days.