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GONORRHŒA AND ITS SEQUELÆ.

LESSON XXXI.

GONORRHŒA.

Nature of gonorrhœa—Its usual seat—May be transferred to the mucous membrane of the eye, and to other points, through mediate contagion—Gonorrhœal ophthalmia a very grave accident—Gonorrhœa a non-specific disease, and may be set up by a variety of causes, although usually the result of venereal contact—Cases in illustration—Gonorrhœa identical with non-specific infantile leucorrhœa—Cases in illustration—Case showing how the origin of gonorrhœa may become important in a medico-legal point of view—Gonorrhœa induced by injections—Case in illustration—Gonorrhœa induced by urethral stricture—Case in illustration—Nature and composition of mucous membrane—Manner in which its secretion is elaborated—Manner in which the normal secretions are changed to a purulent discharge—Beale's view of disease-germs in gonorrhœa—Varieties in the severity of gonorrhœa—Case in illustration.

WE enter now upon a consideration of the third, and last, in the list of venereal diseases alluded to, in the opening lecture of our course, viz.:

Gonorrhœa.—This is a vicious, non-specific, contagious, inflammatory disease of the mucous membranes, and is usually acquired through contact in the venereal act.

It is characterized by free purulent secretion, without ulceration, occurring chiefly in the mucous membrane lining the urethra in the male, and the vagina and urethra in the female; and occurring exceptionally, in the mucous membrane of the rectum.

By transference from these points, the disease may be conveyed to the mucous membrane of the eye.

The occurrence of conjunctival gonorrhœa, is by means of *mediate* contagion; that is to say, by the application of the poison through some intermediate substance, as the fingers, sponges, cloths, etc. This is one of the gravest accidents that can occur in consequence of gonorrhœal affection.

The transfer of the disease, in the same manner, to the nares and to the mouth, is alluded to by authors, but I have never seen such cases, and believe they are so rare that, practically, we need not give them much consideration.

This disease is termed *vicious*, on account of the acuteness of its onset, as compared with idiopathic or traumatic inflammation of mucous membrane, and from the greater disturbance, local and general, which marks its course.

It is termed *non-specific*, because it is capable of being originated by a variety of causes quite independent of a gonorrhœal origin, and even of the venereal act.

This is an important statement, but one which is capable of thorough substantiation by clinical proof, as will be shown hereafter. It is, however, as a matter of course, denied by those claiming a specific venereal virus as the essential, the one sole efficient agent, in the establishment of a true gonorrhœa.

The disease is called *contagious*, and *inflammatory*, because pus, the product of this variety of inflammation, when brought in contact with sound mucous membrane, sets up in it, at once, an inflammatory process of a similar character.

While usually communicated through illegitimate venereal contact, yet a similar inflammation of mucous membrane, producing pus which possesses equally the element of contagion, may arise from causes purely inflammatory. Thus, mechanical irritation, caused possibly by the introduction of a urethral sound, may set up inflammation producing a purulent secretion, which, when brought in contact with healthy mucous mem-

brane, will develop a disease, in no respect different from acute gonorrhœa, the result of venereal contagion.

Allow me to relate a case which bears upon this point. Some four years ago, a gentleman came to me, suffering from irritation at the neck of the bladder, as evidenced by discomfort in that region, and also a certain amount of irritation in the glans penis. He was a man entirely above suspicion of illegitimate venereal indulgence. He was under my direct observation, for at least four or five months, before I came to the conclusion that his difficulty was dependent upon the influence of a contracted meatus urinarius. I had already made a thorough examination with reference to the presence of stone in the bladder and prostatic enlargement, and found neither. I incised the meatus so that the contraction was completely removed, and with it immediately, to my great satisfaction, the frequency of micturition ceased, and all sense of discomfort disappeared. The only after-treatment necessary was in keeping the opening patent. An ordinary sound was introduced some four or five times. The case was doing very well. But the gentleman had a large business to look after, and, finding it exceedingly inconvenient to come to my office, begged the privilege of using the sound himself. I objected, and yet yielded to his wishes, inasmuch as I did not see why he should not be able to perform the operation, if a reasonable amount of care was exercised. I gave him a *new* instrument, a solid glass rod of proper size and shape, and directed him to pass it well through the meatus every morning, and to do it carefully.

At the end of about a week, he came to me with his penis considerably swollen and inflamed. A slight muco-purulent discharge was exuding from the meatus.

In reply to my inquiry, he stated that he found some difficulty in introducing the instrument, that this increased daily, until finally, "determined not to be beaten by it," he had carried it in with some degree of violence. The condition which his penis presented was the result.

Nothing could be more certain, than that this inflammation was the result of mechanical violence. The inflammatory action increased and extended, as in an ordinary gonorrhœa resulting from an impure venereal contact, and finally involved the deeper portions of the urethra. He was even threatened with prostatic abscess, but after confinement in bed, at least four or five weeks, he recovered with slight remaining discharge. This discharge continued for some time; it was exceedingly slight. Thus far the case would have been placed under the head of ordinary simple urethritis, which by many is considered as entirely different from gonorrhœal urethritis, and especially so as lacking the element of contagion.

During the summer, the discharge from the meatus disappeared almost entirely, and, under the impression that there was no danger of communicating his disease, he had a single connection with his wife.

About two weeks after, the wife came to me, suffering with a well-marked, acute *vaginitis* which had extended to the urethra. She was a lady over fifty years of age, and entirely above reproach. To my mind, there was no doubt whatever but that she acquired the disease from her husband, whose disease was of traumatic origin. The result of this intercourse was a disease which could not be distinguished from that which is acquired from a known gonorrhœa. I have, besides, seen several cases which, equally with the one now related, go to prove that a contagious secretion from mucous membrane may be present, as the result of simple causes, wholly independent of contagion.

GONORRHŒA IDENTICAL WITH INFANTILE LEUCORRHŒA.

Another cause of the inflammation of mucous membrane, which does not vary in any practical degree from gonorrhœal inflammation, is infantile leucorrhœa. This is recognized by all authorities as a contagious disease

of the mucous membrane. A similar vaginitis may be communicated from it to other children, when the same sponges or bathing-cloths are used, and an ophthalmia is not rarely set up by means of it, which cannot be distinguished from true *gonorrhœal* ophthalmia.

This form of leucorrhœa is caused, as generally believed, by irritation in a contiguous organ, the rectum. It has also been attributed to the irritation produced by teething. But, whatever the cause may be, an inflammation is set up in the vagina of the infant, which produces a discharge that cannot be distinguished from a gonorrhœal discharge, and which may communicate a similar disease.

Some time since a lady called upon me, accompanied by her little daughter (between nine and ten years old). She stated that the child was suffering from a *bad disorder*, which she believed had been communicated by a young man, intimate in the family, who had been in the habit of playing with the little girl. The visit to me was for the double purpose of obtaining relief for the child and securing some advice as to the way of punishing the young man. On examination, the vulva was seen intensely reddened, and bathed in a profuse, greenish purulent discharge. The hymen was perfect, with no sign of injury. The integument around the anus was irritated, as if by scratching, and great itchiness in vicinity was complained of. The rectum was found loaded with ascarides. The cause of the leucorrhœa was thus satisfactorily explained without implicating the young man. Suppose, however, the youth had been subjected to an examination, and had chanced to have an old gonorrhœa; the probabilities would have been greatly against his being able to establish his innocence before any jury.

Here we see that the question, as to the specific character of gonorrhœa, may become of first importance, from a *medico-legal* point of view.

In support of the practical identity of irritative infantile leucorrhœa and venereal gonorrhœa: Not very long since a case somewhat similar was reported to the Medical and Surgical Society by Dr. Robert Watts. In

a very respectable family of children, one of the little girls was afflicted with a leucorrhœa similar in its origin and characteristics to the case previously described. The physician in charge directed the use of applications by means of a bit of soft sponge. Within a few days a little son only three years old began to show signs of inflammation of the preputial orifice. It was found that the same sponge used on the little girl had been used in washing the little boy. An acute purulent discharge soon appeared, issuing from the prepuce, which, at first, was supposed to be only a balanitis. At about the third week, however, one of the testicles became tender, and swollen, and apparently passed through all the stages of an epididymitis, similar to that following ordinary gonorrhœa.

GONORRHŒA PRODUCED BY INJECTIONS.

During my term of service as Resident Physician on Blackwell's Island, over 30 years ago, several experiments were made, with reference to the question of the causation of gonorrhœa by other means than by contact with gonorrhœal discharge. At the instance of Dr. William Kelly, then Physician-in-Chief, various irritating materials, including pus from various sources; were injected into the urethra of healthy individuals, but without satisfactory results, so far as producing gonorrhœa was concerned. Finally, the experiment was made with pus, taken from the eye of a child, suffering from acute ophthalmia, and a virulent gonorrhœa was established, which continued for four or five weeks, and was attended by the ordinary complications of gonorrhœa, œdema, chordee, etc. Here the disease was produced by causes entirely independent of gonorrhœal contact. As far as could be ascertained, the trouble with the child was free from suspicion of gonorrhœal origin. It is shown by the above mentioned experiments, that pus of an unusually high grade of activity, is necessary to set up a true gonorrhœa.

GONORRHŒA PRODUCED BY THE DISCHARGE ACCOMPANYING STRICTURE.

There is still another cause of gonorrhœa that must be mentioned, in order to make this part of our subject complete.

It is a very important fact, that a discharge, which does not at all differ from true gonorrhœa, may arise through contact with the discharge produced by mechanical irritation incident to *stricture of the urethra*.

A man who has a stricture, but has had no discharge whatever from the urethra for several years, is suddenly placed in circumstances under which an unusual amount of excitement is present in the circulation of that locality; for example, he gets married. A few days after marriage—and I am not now drawing upon general experience or imagination, for I am relating the history of a real case—the man discovers that he has a discharge from the urethra, precisely similar to one of his early gonorrhœas. Naturally enough, he does not associate the presence of the discharge, with the fact that he had disreputable connection, followed by disease, some years previously. The only explanation which seems possible is, that it has been contracted from his bride. He becomes greatly excited, but before openly disgracing the apparent criminal, he goes to his physician to secure a trustworthy witness of her guilt. The physician, however, knowing of certain wild oats sown in earlier life, tells him to pause before he concludes that his wife has been unvirtuous. An examination is made, and unmistakable evidence of *stricture* is found. The conclusion is readily reached that it had been in existence for some time. This becoming appreciated as sufficient cause of the trouble, the man at once gives up all suspicion regarding the impurity of his wife.

Within a few days, however, the *wife* begins to complain, and very soon has a sharp attack of vaginitis, and then comes her turn to enter complaint. The discord, however, is finally harmonized through an understanding that the original difficulty with the husband had

been acquired several years before. The fact which I wish to make clear is this: that by excess of drinking, sexual intercourse, mechanical irritation, etc., a simple purulent discharge may be elevated to the point of contagiousness; that when raised up to that point it is no longer simple, and will communicate gonorrhœa when brought in contact with healthy mucous membrane.

INFLAMMATION OF MUCOUS MEMBRANE.

Before proceeding further with our subject, it will perhaps be interesting to study the subject of inflammation of mucous membranes somewhat in detail.

Mucous membrane is made up of several layers: the uppermost or epithelial, the basement membrane, and the areolar tissue layer. In the mucous membrane of the urethra, the epithelium is chiefly in the form of laminated scales, and the secretion which is associated with it, is the result of the gradual development of this scaly layer. Formative germinal cells come up through the basement membrane, laden with germinal juices, which, as the cell develops into the epithelial scale, exude and lubricate the canal, thus protecting it from the action of the acrid secretions that pass over its surface. This is the natural process by which the fluid, that is necessary for lubrication, is obtained, and the quantity, in health, is never sufficient to constitute a discharge. Any *discharge* from the urethral mucous membrane is pathological, with a single exception, and this is the slight transparent exudation from the mucous glands which comes on through venereal excitement. In the normal development of the epithelial layers, there is just enough material furnished, for the gradual development of the germinal cell into the complete epithelial scale. But set up an irritation, and nature responds to such irritation, by sending up an excessive supply of "pabulum." The upper layers of cells are detached with greater rapidity than in health, an increased quantity of mucoid or lubricating material is thrown out, and we then have the first signal that a pathological process is coming on. This process

continues, and within a short time the undeveloped germinal cells appear upon the surface of the mucous membrane as a discharge. If you examine a urethral secretion when inflammation is present, you will find it to consist largely of cells, which, to all appearances, are the same as the white blood-corpuscles. They are not normal white blood-corpuscles, however, but cells which have been emasculated by too rapid development. They retain the power of proliferation and movement, but they are incapable of elevation into useful tissue, and finally emerge from the urethra as a discharge that is called pus. These cells may appear in such quantities that we see them as a profuse discharge, and, in the highest stage of the inflammation, this discharge has a greenish color, which indicates the additional presence of red blood-corpuscles.

Beale says, that, when this inflammatory process has gone on for a little time, a kind of proliferation of cells takes place upon the surface, in addition to those which come up from the tissues beneath, and that the rapid disintegration of material produced in this manner, gives rise to the infective element of the discharge. Cells thus proliferated, constitute what he terms *disease germs*, and he claims that they may be produced in this way: that they retain life with great tenacity, and may be carried for a long distance, and yet when brought in contact with a healthy mucous membrane, will set up an inflammation, of like character as that from which it originated. Whether this view is correct or not, we have sufficient knowledge to state that pus, under certain circumstances, becomes highly irritant and contagious; that a mild form of inflammatory product, may become changed to that which is contagious. The theory above advanced would certainly explain the contagious character of the gonorrhœa, and also the different varieties of the disease with which we meet.

You will remember, that last week, a man came before us, who had a profuse purulent discharge from the urethra. That discharge was acquired, through venereal contact, about five or six days before his visit here.

On questioning him, it was found that he did not suf-

fer from pain at all, and that except for the discharge, he was not able to say there was anything the matter with him. At the time, I called your attention to the fact, that it was one of the milder varieties of gonorrhœa. There was, perhaps, no question regarding the origin of the disease, and yet I doubt very much whether that discharge would, if placed in contact with healthy mucous membrane, have communicated gonorrhœa. The grade of inflammation was low, and so low, that it is a question whether its products were capable of establishing an inflammation of like character. But let such a man go on a drunken spree, or have excessive sexual intercourse, you would find that his discharge would become painful. If, then, it was brought in contact with healthy mucous membrane, you would see developed a corresponding discharge, and an active contagious property would be present. There are, therefore, two varieties of the affection: 1. That in which there is a slight, painless, purulent secretion. 2. That in which a higher degree of inflammatory action is present, which gives rise to pain and a greenish purulent discharge.

A man may come to you, complaining of an almost white purulent discharge, and at the same time saying that the connection had been with a woman whom he knew to be free from gonorrhœa. Perhaps the additional statement will be made, that she was suffering from the "whites," or that she had just completed her menstrual period. If you do not interfere with the discharge, it will disappear within four or five days, as a rule, and the man will be well. But the trouble is that, as soon as a man sees a drop of pus at the meatus urinarius, he goes to a doctor, who attempts, in very many cases at least, to abort the gonorrhœa. A solution of nitrate of silver is employed as an injection, and if that is kept up for four or five days, a sharp urethritis is usually established. I do not believe there is any such thing as aborting true gonorrhœa. Gonorrhœa runs its course, and lasts about four weeks, and any urethral discharge that exists for a less period, I should be willing to say was not gonorrhœa.

LESSON XXXII.

Specific origin of gonorrhœa still claimed—This claim opposed by both early and recent accepted authorities—Arguments advanced in favor of its non-specific origin—Necessity of the understanding of physiological processes to settle the question—Claims of a specific origin of gonorrhœa through a micrococcus—Arguments to prove this a fallacy—Differential diagnosis—Urethral stricture a cause of discharge which may be mistaken for a gonorrhœa—Abortive treatment of gonorrhœa not warranted by experience—No well-authenticated case of the success of such treatment yet produced—Gonorrhœa acquired from a well-authenticated gonorrhœa not susceptible of speedy cure.

The importance of a clear appreciation of the nature of gonorrhœa, warrants me in again calling your attention to this subject. Is it, as I have positively claimed, a non-specific disease—that is to say, one capable of being originated, in typical form, through a variety of causes, or must it always and invariably be referred to contact with the secretion of a pre-existing gonorrhœa? I need not assure you that I have no doubt, personally, *that this is a fact.* The reasons for believing the disease a non-specific one, and some of the cases proving it, have been laid before you in a previous lesson. But, I gave you simply the results of my own thought and experience. I did not say to you that a contrary view is still held and taught. This is so prominent a fact, that it appears to me desirable, to present to you some of the reasons given, for belief in the specific origin of gonorrhœa, and also to support my own views by citations from eminent contemporary authorities.

In the year 1877, a prominent English surgeon issued a book, confined to the subject of gonorrhœa alone, and containing about 400 pages. Its author is a gentleman who has been identified with the study and treatment of genito-urinary diseases in England for many years, and I can commend this book to you as the most valuable and comprehensive work on this subject in our language. But, in it, Mr. Milton has raised some issues which I