ENDOMETRITIS.

CLINICAL LECTURE DELIVERED AT THE MEDICO-CHIRURGICAL HOSPITAL.

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GENTLEMEN,—The patient I bring before you this morning presented herself at the dispensary for diseases of women with the following history:

Mrs. E. S., white, aged twenty-three. She has been married two years, but has never been pregnant. She enjoyed good health up to within six months of marriage. At this time, while carrying a large bucket full of water up a flight of steps, she felt a sudden and severe pain in the lower abdomen. She was subsequently confined to her bed for several days, and has not been in good health since. Menstruation, which had previously been normal, now began to be more or less profuse, and at the present time the flow continues from eight to ten days. The great loss of blood occurring at the periods has gradually made her weak and anæmic. She also suffers with a leucorrhœal discharge, profuse in amount, and opaque white in color. There is a feeling of pain or weakness in the lumbo-sacral region, accompanied with a bearing-down sensation in the pelvis. The bowels are constipated, and there is a feeling of pressure upon the upper part of the rectum. The appetite and digestion are poor, and she is more or less nervous and irritable.

Introducing now my index-finger into the vagina, I find there is no indication of pelvic disease, but the uterus, although movable, is retro-displaced, and by examining well up in the posterior cul-de-sac, the fundus is felt resting upon the rectum. Exposing the cervix through the speculum, those of you who are near will notice that the neck of the uterus is slightly enlarged, the os patulous, and the altered uterine secretions are seen oozing from the cervical opening. Taking into consideration the evidence offered by the subjective and objective symptoms in this patient, our diagnosis is a retro-displacement of the uterus

complicated with an endometritis. We have, therefore, two conditions to deal with: first, the displacement, which is the primary disease, and, second, the endometritis, which is a secondary result.

Endometritis, as you already know, is the term applied to an inflammation of the uterine mucous membrane. In the light of modern investigations upon the pathology of pelvic disease, endometritis becomes at once a subject of vital importance, as it is the starting-point, in the majority of instances, of all inflammatory conditions affecting the pelvic organs and peritoneum. With a knowledge, therefore, of this fact before you, you will not only be better able to appreciate the necessity for holding clear and definite ideas upon the causes of this disease and its results, but you will also keep well in mind the urgency, in some of its varieties, for prompt and radical treatment. In dealing, therefore, with endometritis, we must forget the teaching of the past, and remember only the lessons taught us through the advances made in the pathology of pelvic diseases.

Inflammation of the endometrium may be conveniently divided into four varieties,—the congestive, the constitutional, the septic, and the gonorrhœal. The first two varieties are usually spoken of under the term "simple endometritis," and they are the least dangerous forms of the disease, as they seldom cause grave pelvic complications, unless improper treatment be employed for their relief. The septic and gonorrhœal varieties, on the other hand, are dangerous to life, or, if they do not end fatally, the health and future usefulness of the patient are, in many cases, forever sacrificed.

In studying the etiology of endometritis, we find that it is the result of micro-organisms infecting the mucous lining of the uterus. In the septic and gonorrhœal forms, this infection is the direct cause or primary condition, while in the congestive and constitutional varieties, the inflammation, which is also due to the development of germs, is secondary to an exciting cause. To make this clear, let me call your attention to the fact that normally the uterine cavity and cervical canal contain micro-organisms, but it is only through the result of an exciting cause that the germs develop and produce disease. Remembering, therefore, that endometritis is always caused by the development of micro-organisms, but that the germs are the secondary and not the primary condition in the simple forms, we are in a position to appreciate the pathology of this disease. The existing causes of the congestive form are, displacements of the uterus, cold, narrowing of the cervical canal, subinvolution of the uterus, lacerations of the cervix, the exanthemata, constipation, sexual excess, and pel-

vic tumors and adhesions. The result of all these conditions is pelvic congestion, and following this the uterine secretions become more profuse. To make clear to you the process by which disease is produced under these conditions, I cannot do better than quote to you from an article by Dr. Laplace[1] upon "Endometrial Micro-Organisms." He says, "It is plain that the mere presence of the micro-organisms does not suffice to constitute disease. Disease is the reaction upon the system, local or general, or both, resulting from the developing organism. In the uterus the normal secretions are a poor culture medium for germ life, and at the same time keep the micro-organisms at a distance from the blood-vessels. If given the proper opportunity, however, if furnished with blood or serum retained any undue length of time within the uterine cavity, micro-organisms develop therein with as remarkable rapidity as they do upon artificial culture media in the laboratory. Now the conditions will have changed, and enormous hordes of bacteria soon develop from those already present, and infect the tissues. In our observation, judging from the reaction of tissues under the influence of developing bacteria elsewhere, we would say that cold is, perhaps, the most frequent cause of the initial process; the congestion which soon follows the action of cold upon the tissues being familiar to us all. Next follows the exudation of serum, which is soon contaminated by the bacteria in the neighborhood; these finding their most favorable soil develop rapidly, producing a chemical irritant or ptomaine which is the decomposition of the serum incident to their growth; this acts as a direct chemical irritant which keeps up indefinitely the irritated condition of congestion and hence hypernutrition of superficial cells,—proliferation of cells resulting, which cells naturally find their protoplasm inoculated from the first with the bacteria under whose impulse they developed."

Referring for a moment to the history of our patient, we find that she dates her troubles back to six months before marriage, when she was seized with a sudden and severe pain while carrying a heavy weight. Now, what happened at this time to cause her subsequent symptoms? The explanation is, I take it, a simple one, and bears out most strikingly the process by which congestive endometritis is produced. In all probability her bladder at the time of the accident was full of urine, and the extraordinary effort she made in lifting the bucket caused an acute retro-displacement of the uterus. This malposition

[1] The Relation of Micro-organisms to the Diseased Endometrium. The American Journal of the Medical Sciences, October, 1892.

having once occurred never properly restored itself, and she has since suffered with a backward dislocation of the womb. Now, a retro-displacement of the uterus must of a necessity interfere with the circulation of blood in the organ, and if the condition be a permanent one, chronic uterine congestion follows.

Passing now to the constitutional variety, we find that the disease occurs in scrofulous and anæmic women, and also in patients suffering from phthisis. In these cases the endometritis begins as a simple hypersecretion of the glands of the uterus, thus producing a culture medium for the development of the micro-organisms found normally within the uterine cavity and cervical canal. The causes of septic endometritis are—sepsis following labor or abortion, sloughing polypi, malignant degenerations of the uterine mucous membrane, and the use of dirty instruments or their improper application in the diagnosis and treatment of intra-uterine disease. The common practice among physicians of making applications to the interior of the uterus in their offices, and the use of the sound, are, in my judgment, dangerous both to the health and life of their patients, as septic endometritis with pelvic complications is likely to follow. The larger my experience grows the more convinced I am that a good and safe rule to follow is, *never enter the uterine cavity or the cervical canal unless it be done under an anæsthetic and with strict operative asepsis.* I cannot too strongly impress this upon you, for irreparable damage is often done through ignorance or forgetfulness of this fact on the part of the physician. It may be that I take too radical a view upon the treatment of intra-uterine disease, yet I feel it is better to err upon this side of the question than to teach you the opposite one.

The gonorrhœal or specific variety of endometritis is caused by the gonococcus of Neisser. This form of the disease is especially dangerous to life on account of the rapidity with which the specific inflammation spreads to the pelvic structures. I do not believe in the theory of a latent gonorrhœa in the male causing a specific endometritis in the female years after the original attack. The assertions of Noeggerath and also those of Tait are not borne out by facts. The histories of patients they bring forward to uphold this theory show in the majority of instances post-puerperal sepsis and not a gonorrhœal infection. And, again, if we believe in latent gonorrhœa, how are we to explain the fact that such a vast number of marriages are followed by conception?

The symptoms of endometritis depend upon the form of the disease and the cause which produces it. In the simple varieties the

inflammation in the majority of instances comes on slowly and is chronic in character. The subjective symptoms complained of are caused, as a rule, by the various conditions producing the disease. Thus uterine displacements, lacerations of the cervix, pelvic tumors and adhesions, etc., are responsible for the symptoms, and not the endometritis, which is a secondary condition. On the other hand, however, the profuse uterine discharge, the digestive symptoms, and the tendency, in some cases, to sterility and abortion are due primarily to the disease of the mucous membrane. In the gonorrhœal and septic forms the inflammation begins acutely, and there are present constitutional symptoms, as indicated by a chill, elevated temperature, and increased pulse-rate. If the disease extends to the pelvic organs, there are also present the evidences of a local or general peritonitis. In cases of chronic endometritis, septic in origin and following labor or abortion, we find that uterine hemorrhage is occasionally a symptom of the disease. This is due either to the uterus being incompletely emptied of its contents or to pathological changes taking place in the decidual membranes.

The physical signs in chronic cases of endometritis are practically the same in all forms of the disease. With the speculum we see the characteristic discharge coming from the os uteri. The uterus upon palpation is not, as a rule, tender to the touch nor is it enlarged unless the disease be associated with a metritis or the uterus occupied by a foreign growth. If the pelvic organs have become infected, an examination of these structures will reveal their condition. Again, the uterus may be found displaced or the cervix lacerated, but these as well as other conditions are complications or causes, not the disease itself.

In acute inflammations of the endometrium, on the other hand, the uterus is enlarged and tender to the touch. The uterine secretions are profuse and the cervix is swollen and congested. These conditions are not only present in the septic and gonorrhœal forms but also in the congestive variety, if the disease be sudden in its outset.

The prognosis of endometritis depends upon, first, its cause, and, second, as to whether or not the disease has extended to the pelvic organs. The gonorrhœal and septic forms are actively dangerous to life, while the other varieties seldom of themselves tend towards a fatal issue. Again, the prognosis is influenced, in some cases, by the promptness and thoroughness with which local treatment is instituted. Of course in the constitutional forms we cannot hope to materially influence the disease while the cause is actively present. In a general way we may safely state that there is no natural tendency towards a cure

in cases of chronic endometritis and that the simple forms are not of themselves necessarily dangerous to life; on the other hand, however, the septic and gonorrhœal varieties frequently result in death or at best produce chronic invalids.

The treatment of endometritis, based upon the germ theory of disease, is directed first to the cause and second to the removal of the results of the inflammation upon the uterine mucous membrane. In the constitutional varieties of the disease we must not lose sight of the fact that the general condition of the patient is primarily responsible for the pathological changes taking place within the cavity of the uterus. Hence our first effort must be to correct those vices of the constitution to which I have referred in discussing the etiology of endometritis. It would be useless, therefore, in these cases to attempt a cure by means of local treatment. If, however, after the patient's general health has been restored, the uterine secretions still continue to be profuse, it is an indication that the micro-organisms have infected the deeper structures of the mucous membrane, and hence the local inflammatory condition can only be relieved by direct treatment to the endometrium. Again, these principles of treatment hold good also in the congestive forms of the disease when the outset is sudden,—as, for example, exposure to cold and the like. Here the acute congestion increases the uterine secretions, thus favoring the rapid development of germs. If, under these circumstances, the congestion is relieved by treatment, no damage is done, and the endometritis subsides. On the other hand, should the congestion become permanent, the endometrial inflammation assumes a chronic condition, and we must, therefore, restore the status of the pelvic circulation before directing our attention to the local uterine disease.

In those cases of endometritis congestive in form and coming on slowly and running a chronic course, there is always a definite cause to be found. For example, if the uterine congestion be due to a retrodisplacement of the uterus, to a lacerated cervix, or to a pelvic tumor, the indication is to remove the cause, and at the same time, or subsequently, treat the local disease within the uterine cavity.

In the septic and gonorrhœal varieties the disease begins acutely as a primary local condition. Therefore we at once direct our treatment to the endometrium, and by thus removing the cause we at the same time cure the disease. The local treatment of endometritis is of great importance, and you must have clear and well-defined ideas upon the subject if you hope to cure your patients. You will recall what I have already told you in reference to the danger and uselessness of

routine intra-uterine medications. This method of treatment is dangerous, because it cannot be carried out under strict asepsis, and it is useless in chronic cases, because the deeper structures of the mucous membrane are infected, and we are unable to exert any influence upon them with applications made directly to the surface of the endometrium. Therefore to cure the disease we must remove the infected tissues, and this is best accomplished by means of the curette. The operation of curetting consists in (1) dilatation of the uterus with the heavy dilators of Goodell; (2) thorough removal of the mucous membrane with the curette; (3) flushing the uterine cavity with an "acid" solution of corrosive sublimate (1 to 2000); (4) the application of Churchill's iodine to the interior of the uterus; (5) introducing into the cavity of the womb a narrow strip of iodoform gauze and leaving it in position for twenty-four hours.

I shall not have the time during my clinic this morning to enter into a discussion of the antiseptic and operative details of this method of local treatment, therefore we will pass at once and briefly to a consideration of the contra-indications for the operation. Curetting of the uterus should never be performed if an inflammation exists of the ovaries, tubes, or peritoneum. Therefore, in all cases where curetting is indicated we must first carefully examine the pelvis for the presence of disease before undertaking the operation. A neglect of this precaution will not only bring discredit upon you, but in many instances will be the direct cause of a fatal peritonitis resulting.

Before dismissing you I will refer for a moment to some special points in the treatment of acute septic and gonorrhœal endometritis. Grave pelvic complications can only be prevented in the gonorrhœal form by prompt and effective treatment. If, therefore, during the course of a specific inflammation, the uterine cavity becomes infected, you must dilate and curette the uterus. This operation will at once remove the diseased mucous membrane and at the same time destroy the germs of infection, thus reducing to a minimum the chances of pelvic disease resulting.

In septic cases following abortion or labor the uterine cavity is irrigated three times during twenty-four hours with an "acid" solution of corrosive sublimate (1 to 4000). If at the end of that time the symptoms have abated, the irrigation is kept up twice daily for two or three days. Should, however, the symptoms at the end of the first twenty-four hours show no signs of improvement, the uterus must be then thoroughly curetted.

PROLAPSUS OF THE OVARIES, CHRONIC OÖPHORITIS, AND PELVIC PERITONITIS; ABDOMINAL SECTION.

CLINICAL LECTURE DELIVERED AT THE LONG ISLAND COLLEGE HOSPITAL.

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THIS patient is twenty-nine years of age, and has been married five years. She has suffered more or less from dysmenorrhœa, and is sterile. The pain, which is severe, begins some time before the menstrual flow, continues during the flow, but in a much modified degree, and persists in a severe form for about three days after the flow. In the interval she has continual pelvic tenesmus. She has been treated for a year before coming to us. For several months she has been treated here as an outpatient for diseased ovaries and tubes, but without getting much relief. It is the opinion of my associates (and I agree with them) that we can do little to relieve her except by removing the offending organs. I believe I have often enough said to you that we should not hastily open the human abdomen, or attempt to remove any of the pelvic organs for any degree of suffering without first giving general treatment a fair trial. That has been done here, and without success. We have given her some relief, it is true, but it was only temporary, and she has come back again. I will now operate on her.

You will observe that we arranged the patient and performed the operation in the method which has already been described to you on previous occasions. The operation was a double ovariotomy. You will notice the difference in size between these ovaries; one is nearly twice as large as the other. The rule is that the ovary becomes very much enlarged, and finally undergoes a kind of atrophic degeneration and hardening. One of these has advanced further in this process than the other. In the large one there is considerable swelling and œdema; the other is small and atrophied, so that it is in the condition resembling that of a contracted kidney after a long-existing interstitial nephritis. Still, both of these ovaries look as though they hardly ought

to have been removed. I am always very critical about ovaries that have been removed. Had this woman been differently circumstanced and had not so much been dependent upon her, we might still have waited and tried other means. If we had waited until both the ovaries became atrophied, then this patient would have been in the same position as a woman of fifty-five or sixty, who has passed the menopause and the final atrophic changes in the ovaries. But this takes a long time, and, as she is a poor woman dependent on her own exertions for a livelihood, we decided that it was better to operate.

Again, both of these ovaries were prolapsed. An inflamed ovary which remains in its normal position behaves infinitely better than one in the same condition that has become prolapsed, so that when a dislocation exists in addition to the chronic inflammation, that is a strong argument for removal. In this patient we found the ovaries in the most dependent part of the sac of Douglas. So marked was the prolapse that it was a little difficult to tell which was the right and which was the left one. They were close together, the one a little behind the other, and we could find them only by pushing them between the examining finger and the sacrum through the vagina. Taking all the circumstances into consideration, I think we were justified in giving this patient the relief which I believe will follow. I see no reason why she should not get well. We kept the abdomen open a little longer than we sometimes do, but during that time it was well protected by sponges. You noticed how the patient was protected by a rubber sheet, about which I have already spoken to you. When you take that rubber sheet off, you leave her garments and everything perfectly dry and clean, and do not have to change the clothing. If pus or other animal material gets on the clothing and the patient is put to bed, you have all the conditions present that favor a rapid decomposition.

A word with reference to the use of sponges. You will remember I told you that in former times we used to operate in a very high temperature, almost as high as 100° F., which was very unpleasant, both for the operator and for the patient, but it was then deemed necessary, because the abdominal cavity was exposed. Now we protect the patient from shock with hot sponges,—just as hot as you can comfortably handle them. You should also see that your hands are warm. I have often, during large operations, crowded in a considerable number of big sponges, so that the abdomen was distended by them. Besides protecting the patient from shock, these sponges check the oozing and keep the intestines from coming down. We keep the sponges hot by putting a smaller pail inside of a larger one; the inner one is thoroughly sterilized

and filled with sponges, and the outer one is filled with hot water, and a lid is put over both. In cases where some of the septic material has got into the abdominal cavity, you can take a quantity of sterilized water at the proper temperature and flush the whole abdomen, and this will prove a good stimulant as well. I have resorted to that measure, and shall do so again in difficult cases where the whole abdominal cavity is open to possible contamination; but if you simply have a little leaking from the sac, you can do quite as well by carefully sponging it.

In the operation I did here to-day, the difficult part of it was not seen by you,—namely, the adhesions. An ovariotomy without firm adhesions is a very simple thing,—so simple, in fact, that a double ovariotomy has been done in a few minutes; by some in seven or eight minutes; I am inclined to think it has been done in this institution in less than ten minutes. When there are adhesions, it becomes much more difficult. To-day I encountered adhesions. The omentum was adherent to the abdominal wall as far down as the pubes.

With reference to breaking up adhesions, I have a rule which I have established for myself, and it may be of some use to you. We encounter sometimes both old and recent adhesions. Recent adhesions can generally be broken up with perfect safety. When I can break up an adhesion with the side pressure I am able to exert with my middle and index fingers, I consider it safe to do so, but I do not care to exert any greater force than that. I much prefer to make a little larger opening and find such adhesions, divide them, and thus work my way down to the ovaries and tubes.

This operation looked easier to you than it was, yet it was not easy. I have always been unwilling to show my class a very easy operation of this kind, because it gives them the wrong impression. Opening the abdominal cavity is an awful necessity, and I start out with the idea that every case is going to do badly. In every other relation of life women are reliable, but you cannot tell how they are going to act after such an operation, and you must do your very best.

As far as dressing the wound is concerned, I find the following very simple and efficient. I take cheese-cloth, which is cheap and clean, and saturate it in a solution of carbolic acid and glycerin (1 to 8); the glycerin takes away the caustic properties of the carbolic acid. The cloth is wrung out immediately before it is applied. It is spongy and porous, and any oozing will be mopped up and disinfected. Decomposition cannot take place, and the surface is kept moist and not at all irritated. Then, to protect it from outside influences, I apply sterilized cotton, which answers every purpose.