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SURGICAL TREATMENT OF SUPPURATIVE DISEASE OF THE APPENDAGES.*

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When I accepted your invitation to speak upon this subject I knew I was thrusting my head into the jaws of the lion, but I reflected that good to our branch of surgery might come from the mangling; therefore, with something akin to the spirit which leads our guild to brave even the terrors of war and pestilence that light may be thrown upon the questions which vex us, I came and am here.

With due deference to your invitation, it seems absurd that any one should come here to talk upon a subject with which each and all of you are more than familiar, especially when, as in this case, the speaker has nothing new to offer. I can only imagine that your president wished the subject discussed in order that the chaff which it contains might be separated, cast out, winnowed, as it were, in the hot and searching blasts characteristic of this august body. Therefore, committing myself to kind Providence, I launch upon the stormy question.

By suppurative disease I suppose you mean pyosalpinx and ovarian abscesses, with their accompanying pockets of pus when such exist. Granting this, let me broaden the question a little to include certain inflammations of the uterus, which are characterized by endometric reactions and results which bring them close to if not within the strict meaning of the word "suppuration"—namely, gonorrhœal, tubercular, and septic endometritis and metritis. I believe at least one of these lies back of every collection of pus in tube or ovary.

Assuming that the gonorrhœal or septic manifestation in the uterus is active, there is small doubt as to the ultimate implication of the appendages, and in the case of sepsis, if it be in a recently pregnant uterus, of more or less of the peritonæum as well. If resolution in these conditions could be relied upon there would be little if any

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need for interference ; but it can not be relied upon, and as we know that its failure means a practical destruction of the appendages, one or both, with all that is implied in this, or perhaps death to the patient from peritonitis or sepsis, shall we stand idly by and await the unfavorable issue?

I think not. We can not interfere too soon in all such cases. Prompt provision for the escape of the products of such inflammation, from the uterus outward, must be made ; and in the recently pregnant uterus measures must be taken to remove decidual tissue and clots, if such be present. We will not affront you by suggesting how this can be done ; but let me say that, while you freely pack the uterus with sterile cheese cloth, doing this daily if free drainage demands it, be chary of the curette. Never employ it in acute gonorrhœal infection, and in septic infections use it only when the finger fails to clear the wall of adherent decidual tissue. But it may be, before such care can be given appendages and peritonæum have been involved. If it be gonorrhœal, one can rely upon the disorder remaining within the pelvis, or if it extend, that the extension will be upon the face of the peritonæum (peritonitis). If it be septic, particularly if it be sepsis in a recently pregnant uterus, it may have similar limitations; but, again, it may give us general infection by way of the lymphatic and blood-vessels.

Permit me to exclude all cases in which the general infection of sepsis masters the case, such, for instance, as examples of sapræmia, septicæmia, or pyæmia. For, I take it, if we are to make progress in our discussion to-night, we must keep to the lines which lead to localized or encysted suppuration. It is true that even these conditions may be the forerunners of a general infection ; but if such be the result, it is through a slower sepsis or through a general peritonitis. Let us, then, look carefully upon these local or pelvic results.

Assuming that the appendages and peritonæum have become involved, we get speedy information through the physical evidences, and then comes the question of appropriate treatment. Shall the affected area be left unmolested by surgical interference, or shall we attempt something more than hot douches, catharsis, and rest? The answer depends somewhat upon the extent and degree of implication, as indicated by signs and general symptoms. Let us omit slight implication, as shown by lack of symptoms and of signs.

The possibilities of the situation turn upon the probability of permanent loss of function to the appendages, even should the disease go no further, and loss of life should it involve the general peritoneal

surface. Evidently the latter danger is the more pressing, but both are serious enough to warrant something more than general or surface measures. If the uterus has been already cleansed and drainage provided for, it remains for us to get nearer to the new focus of inflammation. Analogy teaches that the quicker we get to a suppurating center, and, by giving vent, free the tissues from the destructive influence of the pathogenic germs and fluids there at work, the better for the involved area. Now it appears that in the vast majority of these cases the affected area includes the *cul-de-sac* of Douglas, toward which the process generally gravitates; therefore if we enter this *cul-de-sac* and make a free opening thence outward into the vagina, we will best meet the immediate danger. By "immediate" is meant the danger of an inflammation thus pent up in a serous sac, extending to the whole of this sac before Nature can muster strength and by incapsulation keep it within narrow limits. Relieve the pressure in the direction of the general cavity, and Nature's barrier, lymph exudate, even though scant, can best perform its part of this duty.

The proposition likewise holds good against the danger threatening the integrity of the appendages. To leave them surrounded by an active inflammatory process is to court their disablement, if not destruction. Incision, therefore, best meets the double danger. To be effective, this incision must be free, a wide opening must be made in the *cul-de-sac*, extending from the uterus to the bottom of the sac, and in certain cases even increased by lateral cuts. This opening not only gives free vent to peritoneal fluids, but it permits us to palpate the under surface of the affected appendage or appendages, so that, if best, they too may be incised or aspirated.

The tube, under the circumstances portrayed, is the organ which contains the encysted pus, or rather muco-pus; and while incision or aspiration may not in all these cases prevent its destruction, yet, aided by peritoneal drainage, it will certainly tend in that direction far more than any other process at our command.

It need not be argued that such openings into the *cul-de-sac* would be infected from the uterus, because prior to such openings the uterus will have been cleansed and properly packed; then, with a loose gauze drain in the *cul-de-sac* and one similar in the vagina, and these placed in contact with a fitting dressing, one can feel that a logical piece of surgery has been well completed.

So far we have dealt with conditions leading up to suppuration rather than with suppuration itself. Now let us consider this latter. The disease, whatever its origin, has passed through its acute stage,

or, as in the case of tuberculosis, has run its primary subacute or chronic course, and is within the suppurative stage. A variety of conditions may present themselves in consequence, but two types will answer the purpose of this gathering. The first presents to us a tube with walls more or less thickened, having an ampulla closed and more or less distended with a fluid to all intents and purposes pus. The adjacent ovary is infiltrated, enlarged, softened, and may or may not contain pus. The peritonæum contains only solid exudate lymph. We will assume that the physical evidences point to unilateral rather than double implication. The uterus being in a state of infiltration, as a rule, and endometritis and more or less metritis being generally associated, curettage with subsequent packing should be the first step. This prepares the way for the preservation of the sound appendage, should such exist, and if not, does no harm beyond some slight delay in passing to the second step.

This step comprises vertical posterior vaginal section, with digital examination of the supposed sound appendage. Finding it sound, the next step relates to the removal of the diseased appendage. This can be done through the opening already obtained, or, if preferred, through one between the uterus and bladder, after the method of Dührssen—anterior colpotomy. What must our course be, however, when we fail to find a sound appendage—when, spite of the seemingly favorable evidences of careful physical examination, each is found too much diseased to permit retention? Or what shall we do, even though one appendage be perfect in all particulars, and yet we find tubercle bacilli in the scrapings from the uterus, obtained for diagnostic purposes by the preliminary use of the curette? Removal of the uterus and appendages by vaginal hysterotomy must be the answer. It is the only logical course, the patient's general condition permitting—a proviso common to major operations in general, including salpingotomy and oöphorectomy by means of abdominal section.

The second type of suppurative disease of the appendages is that in which the pus is found mainly in the ovary (ovarian abscess) and perhaps in peritoneal pockets; not that the tube is free, for it too contains pus and is markedly infiltrated; but the order of prominence seems to be—ovary, peritonæum, tube, the condition being, no doubt, the successor of the first type, with an apparent reversal of conditions so far as purulent foci go.

The condition is more pronounced on one side than the other; in fact, one side may be practically free from suppuration, and yet in-

flammation may have been so intense and so widespread, in one way or another, both are effectually destroyed.

Like type No. 1, this one will have occasionally its chief manifestation (as after labor at term) at the pelvic brim, or well up in the pelvis, and will then tend to evacuation through the abdominal wall (iliac region, usually); but with both types the usual direction is downward into the vagina or rectum.

Patients who are the victims of this last type come before us in two general classes: First class with the suppuration in aggressive progress locally, and marked by decided constitutional symptoms; the tissues and organs round about the pus foci are infiltrated and softened; condition of patient unfavorable for major operation. Second class, the suppuration quiescent, the pus encysted, constitutional reaction slight, perhaps almost nil; now and then exacerbations marked by local constitutional reaction more or less aggressive; the tissues and organs adjacent to the foci are thickened and indurated in pro portion to the duration of the process; new organized tissue is a striking feature of the periphery, particularly in the direction of the free peritoneal cavity. The condition of the patient is favorable for major operation.

The two classes must be dealt with on different lines. The first calls primarily for nothing beyond free evacuation of the pus, the direction and manner of this evacuation depending upon the direction the pus appears to be taking. If downward, then through the vagina; if upward, then through the abdominal wall. When pus works its way downward in these cases, a free opening can be made from the vagina without fear of the free peritoneal cavity, because a good wall of adherent viscera above the collection of pus can be relied upon. The device discussed in the American Gynæcological Society in 1887 is helpful but hardly necessary.

How is it when the direction of advance is upward? Forbidding an attack through the vagina in the large majority of such cases, the focus of pus hugs one or the other side of the pelvic wall and advances along the parietal peritonæum into one or the other iliac fossa. Such being the condition, the line of the evacuation should be through an opening which, beginning just above and parallel to Poupart's ligament, extends thence beneath the peritonæum, upon the face of the psoas and iliacus muscles, to a point within the area of attachment of the focus of pus. But sometimes this focus pushes directly for the abdominal wall through the hypogastric region, aiming apparently for some point not distant from the median line. Its advance is usually

covered by enough peritonitis to give abundant adhesions quite up to the abdominal wall. If this be so, direct evacuation is an easy and safe process. It is only necessary to cut down upon the most prominent point, carefully separate the adherent viscera up to the foci of the pus sac, empty it by aspiration, then open it freely, cleanse the cavity, and pack it with gauze.

Let us suppose, however, that the pus sac has no such extensive outlying system of adhesions, but, on the contrary, has an inch or more of free peritoneal cavity between it and the abdominal wall. Shall we endeavor to drag it up to face the wall, or shall we endeavor to create a system of adhesions between the sac and the wall, thus imitating Nature? Most surely, the latter is the proper course; therefore, open down to the sac, expose its surface freely, then pack gauze from this surface to and through the abdominal incision; leave it forty-eight hours, then remove. At this sitting empty the sac, open it freely, cleanse and drain it along the safe-walled passage your gauze has made for you.

This precaution presupposes the patient's state will warrant a delay of from twenty-four to forty-eight hours. Should it not, then the case must take the chances of enucleation—enucleation of the sacculated tube and ovary; and should peritoneal loculi exist, evacuation of them with subsequent open drainage.

To recapitulate the rule in this case: Tax your patient no more than is necessary to give free and safe vent to the pus. Postpone radical operation.

How shall we deal with the second class, to which, as you have just seen, the first may in time be added?

I presume that most operators at this date accept the proposition that hysterotomy with enucleation of the purulent tubes and ovaries (pus sacs) must be done. They may differ as to the propriety of hysterotomy in lesser lesions, but not as to its propriety here. And yet there is a difference: it relates to the direction of operation. Shall it be by vaginal or abdominal section?

After no small experience in both, my preference is for the vaginal route. Since my first case at Bellevue Hospital, February 11, 1892, this partiality has grown. Operating first one way and then the other, the partiality has ended in conviction, so that now I rarely use the abdominal route, even including cases requiring the double approach.

My conviction also, speaking of the subject generally, is that vaginal section and hysterotomy is in the interests of the patient, while

abdominal section is in the interest of the operator. The operator has an easier route, a better opportunity for demonstration, and, where such things are considered, a better field for theatric display, while with the vaginal route the patient has a smoother and more perfect result. It demands deep conviction to forego the delights of the Trendelenburg posture in such cases; and, on the other hand, it demands a patience and a degree of physical endurance to perfect ourselves in vaginal work which many will find it hard to give.

Let us consider the difficulties. The use of the cautery removes the annoying hæmorrhage of the vaginal wall. The close hugging of the uterus with the knife or cautery which is permissible (unlike the similar operation in uterine cancer) makes it easy to control the uterine vessels, and that, too, without fear of the ureters or bladder, so different from the operation in cancer. The opening secured by the removal of the uterus makes easy the withdrawal of the appendages when they are free or moderately adherent; and even when they are widely and firmly fixed, if we have a roomy, shallow pelvis, with wide inferior strait, the task, while serious, is not very difficult. But there is a condition, especially when associated with a male pelvis in a stout woman, which is more trying than any I have ever encountered. An old suppurative process, such, for instance, as we may find in ovarian abscess just considered; both sets of appendages involved; the mass —which is composed of uterus and appendages, the enlargement being in the latter—nearly, if not quite, fills the pelvis; the rectum, sigmoid, perhaps cæcum and appendix, are a part of the mass, being, together with the omentum and perhaps a coil or two of the small intestine, attached to it by adhesions so well formed, so strong, as to require close inspection to determine which is the viscus and which the new tissue. We all know such cases well, and, with the best exposure that abdominal section and the Trendelenburg can give us, we always approach them with anxiety.

How can we master such cases through the vagina? No special difficulty occurs until we have removed the uterus and are beginning enucleation of the pus sacs (tubes and ovaries). Let me say just here that in all such cases it is a good precaution to have a guide in the rectum, such as a soft rectal bougie. This should be introduced carefully, with the patient either on the side or in the knee-chest position, and the bougie should be long enough to traverse the entire rectum. In the enucleation which is now to follow, your point of departure must be the stump of the tube and the ovarian ligament just cut from the corneæ of the uterus, working from this point first

for one side then the other, dragging down tissue with the forceps, examining it, studying it, for there is no such need for haste as prevails with abdominal section; you work your way onward until the task is complete. In many cases you will succeed in shelling out the appendages, leaving the envelope of new tissue intact; but sometimes you will tear an intestine. If the rent be small and below—that is, within—the wall of new tissue, so that there is no chance for communication with the free peritoneal cavity (this can be determined by searching over the walls of the excavation), the rent can be left to care for itself. Merely stretch the sphincter to permit intestinal gas to escape. If it be large, yet still cut off from the general cavity of the peritonæum, close it as far as you can, and observe the above precaution relating to the sphincter. But, large or small, if such a rent is not separated from the general peritoneal cavity by Nature's barrier, which may have been broken up more or less during the manipulation, it must be effectually closed If the rent intestine can be brought down to the opening in the vaginal roof, this closure can be effected from below, and, if the pelvis be roomy, one might even do it higher up. But if it can not be done from below, it must be done from above, and through-drainage with gauze packing provided for.

We admit, then, that there are conditions demanding abdominovaginal section. This raises the question, Why not adopt this as the operation in all doubtful cases? This is for discussion.

Suppuration of the appendages sometimes presents itself to us as a complication of other conditions which, taken as a whole, modify our methods.

As a complication of pregnancy, for instance, and in conjunction with fibroids and appendicitis, all of these conditions are important enough to demand a consideration distinct from that of the simpler questions presented here. I shall therefore avoid them, and end by alluding only to the few which are so closely allied to the subject of this paper as to warrant our attention.

We have two operations which, valuable as they were in their day, and perhaps even now in a limited number of cases, are yet incomplete, in that they are liable to leave foci of suppuration behind. I allude to what is known as the Tait operation, more particularly in double suppuration of the appendages, and the form of incomplete hysterectomy which leaves a good part of the organ behind—the cervix. In the former, aside from the suppurating stumps we formerly so often met with, the body of the organ is an offense, and in

all such cases should follow the appendages. The same may be said of the cervix, which, contaminating the tissues drawn over it, tends to the creation of a suppurating cavity above it.

The reasons for removing the uterus along with its appendages are familiar to you, but if you have not accepted them as a rule of action, and yet find at some future day the organ must come out, remove it by the vagina; and if under a mistaken idea that the cervix is of any special use after the body of the organ has been removed, and you have left it, when the conviction reaches you that it should be removed, the vaginal route is the proper one to employ. But, better than all, operate at the onset by the vaginal route, and the clean sweep you then make renders unnecessary further operation.

One word more and I am done. What shall we do with abscess of the broad ligament? I have had but two cases in all my experience. One I examined from above, operated upon, and reported. (See New York Obstetrical Society's *Transactions*). The other is of enough importance to report. It followed curettage of the uterus and operation upon the cervix. It had a predisposing cause in glandular induration of long standing at the outer and upper attachment of the right broad ligament. Supposing it to be due to suppuration in the right appendages, I made a vaginal section for exploration. This most excellent method quickly showed me that the appendages were free and revealed the true position of the pus. It was then entered from the vagina, the opening from the *cul-de-sac* having been closed. I entered it by dissection between the bladder and uterus by way of the paravesical space, hugging the uterus well until I had passed above the ureters. This proved a success. But there is another direction, and that is beneath the peritonæum at and below the inguinal canal. The pus in these cases tends, I believe, to advance along the *line of the round ligament.*

With this I close the presentation of the case, and sum up with the following conclusions:

1. In acute inflammation, with implication of the *cul-de-sac*, incise and drain.

2. In unilateral suppuration, tubercular inflammation excepted, treat the uterus, and remove the diseased appendages by the vagina—anterior colpotomy.

3. In double suppuration: Vaginal hysterectomy with enucleation and removal of the purulent appendages—the so-called pus sacs.

4. In suppurative disease, whether double or single, if the patient is too weak to stand the radical operation, evacuate the pus and drain, reserving the radical operation for the future. Choose the route (vaginal or abdominal) which the pus seems disposed to select.

5. In broad-ligament abscess—a matter to be determined by a vaginal exploratory section, if necessary—evacuate by approaching the pus through the utero-vesical region, or beneath the peritonæum along the route of the round ligament.

6. In suppurative disease don't do abdominal section, but, if you should, do not leave the uterus or the cervix.