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THE DIFFERENTIATION OF PELVIC CELLULITIS.*

By JAMES R. GOFFE, M. D.

It was the almost constant remark of Dr. Emmet during my term of service at the Woman's Hospital that the next great step of progress in gynæcology lay in differentiating what was known as pelvic cellulitis, finding out the different kinds, their causes, and their treatment. This was in the winter of 1881–'82.

Much has been done in thought and in practical work in the line of inquiry Dr. Emmet so persistently marked out, although I doubt not it has taken a course quite different from what he anticipated, and may have even overstepped the bounds that our knowledge of the pathology of pelvic inflammations would then have justified. It may not be uninteresting nor unprofitable, therefore, to consider the subject of pelvic inflammation from the standpoint I have chosen, and see into what the broad term pelvic cellulitis resolves itself—if indeed it does not, as a prominent factor in gynæcological cases, resolve itself out of existence.

It was the custom at the Woman's Hospital, at the time of which I speak, as soon as a patient was found to be at all sensitive upon digital touch, to refrain from further investigation, to diagnosticate cellulitis, and to place

* Read before the Alumni Association of the Woman's Hospital at its second meeting.

her at once upon hot-water treatment, with occasional applications of tincture of iodine and tentative efforts from time to time to locate the seat of the trouble more definitely. Lacerations of the cervix and perinæum, ovarian and fibroid tumors, displacements of the uterus, and prolapsed and cystic ovaries, were the features to be kept in mind, with the bugbear cellulitis to complicate most of the cases and debar from further inquiry.

The first break in this uniformity came through Lawson Tait in his recognition of salpingitis and his radical cure by the operation which bears his name. The pathology of salpingitis, its symptoms and signs, have been so recently and so fully discussed in all quarters that I need not dwell upon the subject. The recognition of the condition was the first advance in the direction Dr. Emmet had indicated, "the first ray of light in the cloud of ignorance and uncertainty" that was cloaked by the name cellulitis. And this has the distinction not only of being the first step, but a most decided advance, and, as Dr. Thomas has said, marks a new era in the development of gynæcology.

Following this famous essay of Lawson Tait's, which appeared in July, 1882, came the last edition of Courty's work on the uterus, ovaries, and Fallopian tubes, in the summer of 1883. In this work M. Courty describes a condition which had formerly come under the broad title of cellulitis, and which he calls peri-uterine adenitis and angeioleucitis, an inflammation of the lymphatic vessels and glands in the vicinity of the uterus. The author describes this inflammation as often acute, and the prognosis very serious when it is puerperal. "More frequently it is chronic, and is then less important in itself than the ulceration of the uterine mucous membrane, of which it is the certain sign." The condition is characterized by small, rounded, indurated tumors behind and to the side of the uterus, with great sen-

sitiveness upon digital touch at the seat of the indurated glands and in the surrounding tissues, extending even to the walls and floor of the pelvis. "The mobility of the uterus is scarcely altered, but movement of the uterus gives pain." The most characteristic of the symptoms attending it are "lumbar and lumbo-sacral pain, sometimes extending to the anus, and persistence of pain upon marital intercourse, even after most of the uterine symptoms have disappeared."

Here, then, is presented a condition the recognition of which is of the greatest importance, for its relief and cure depend not upon the non-interference plan of cellulitis, but upon a most active treatment of the interior of the uterus, which is the origin and constant source of irritation of the lymphatic inflammation.

An ulcerative stomatitis is attended by enlargement of the neighboring glands; an eczema of the scalp produces an adenitis of the post-cervical ganglia. This adenitis may run on to suppuration, and, although secondary to the pus-secreting surface of mucous membrane or scalp, eventually proves the more refractory to treatment. As long as the original pathological condition exists, however, it acts as a constant irritation to the lymphatic system, and treatment is at once directed to the original lesion. Analogy certainly holds good in the pelvis; treatment should be applied to the mucous membrane from which the absorption takes place—viz., the interior of the uterus.

Dr. Mundé has reported three cases in which he diagnosticated the condition of lymphadenitis and cured it by intra-uterine applications. I recognize this condition occasionally in dispensary cases, and am able to relieve it by the same treatment.

I have the notes of two cases occurring in my private practice, and, as this condition has not been much discussed, I will report them here:

Mrs. L., aged thirty-four, married four years; children, none; miscarriages, two, artificially induced. This patient came to me in May, 1884, complaining of sickness since her last miscarriage, two years before, consisting of pain across the lumbo-sacral region and down the thighs; nausea at times, and so great soreness in the pelvis that she could neither walk nor ride; the jar of the horse-cars was unendurable, so that she was obliged to stop the car sometimes when she had ventured into it, and get out without completing her journey. Menstruation occurred every four weeks. The flow was profuse, lasting from four to five days. There was intermittent leucorrhœa; micturition was difficult and painful, and the bowels were constipated.

Examination disclosed the uterus in the normal position, but large and exquisitely sensitive to touch and movement. On the posterior surface of the uterus, and reaching out on either side, were small, nodular, sensitive masses of the size of a pea, with great sensitiveness in the deep tissues on all sides of the pelvis, even down to its floor. I recognized the condition as that of lymphadenitis, and proceeded to dilate the cervix with a steel dilator and make a thorough application of pure carbolic acid to the endometrium. This treatment was repeated five or six times, at intervals varying from three days at first to a week at the last. The patient then declared herself so well that she would not come again, although the indurated glands had not entirely disappeared. I have seen her repeatedly since, and find her walking and doing her work with perfect comfort. I neglected to state that upon my first dilatation an abundant milky discharge came pouring out of the uterus, showing that the secretions had been retained, were acting as an irritant, and required opening of the canal to give them proper escape.

The second case is similar to this in all its main features, and the patient was relieved by the same treatment, but I have never been able to induce her to come for treatment continuously at any time long enough to cure her. Her husband has had syphilis, and, although the patient has escaped it, she has had two syphilitic children and as many miscarriages. She is in constant fear and dread of becoming pregnant, and

I mistrust is constantly interfering with herself. From this cause there is established the pathological condition I have described, which is clearly susceptible of diagnosisand, as I believe, of cure.

Thus far, then, we are able to differentiate two varieties, so to speak, of cellulitis—viz., salpingitis and lymphadenitis —not theoretically or pathologically simply, for that had been done long ago—but clinically and practically, and in a manner that implies its treatment and cure.

The small indurations and thickenings that are felt about the uterus upon digital touch, Dr. Welch believes, are due, in the vast majority of cases, to peritonitis, although he does not deny that there may be cases in which they are in the cellular tissue. Dr. Coe, in his carefully conducted investigations, found that they could not in any case be ascribed to the areolar tissue, while a number of prominent laparotomists of the city, who have had an eye to the settlement of this question by careful examinations after the abdominal cavity has been opened, likewise find the cellular tissue an innocent victim of most foul accusations.

Large inflammatory tumors of the pelvis—that fill the cavity or extend even above it—if they come to autopsy, are found to be due to plastic inflammation of the peritonæum, agglutinating together the uterus, its appendages, and large masses of intestines—involving sometimes even the omentum. If the inflammations clear up, there has simply been a plastic peritonitis with or without bands of adhesion following in its train. If the inflammation runs on to suppuration, an abscess forms.

And this brings us to the subject of pelvic abscess. A pelvic abscess is an accumulation of pus in the pelvis; but the more exact location of the pus—whether it is confined to the areolar tissue, being thus without the peritoneal cavity, or whether it is entirely within the peritoneal cavity,

being confined by adhesions between the peritoneal surfaces —has divided students of the subject into two factions. The original idea of inflammatory tumors of the pelvis, especially when they run on to suppuration, seems to have been that they were confined to the areolar tissue. The principal advocates of this theory have been Nonat in France, Sir J. Y. Simpson and Graily Hewitt in England, and Dr. Emmet in our own country.

The first departure from this theory was made by the combined efforts of Bernutz and Goupil, in France. They scouted the idea of a pelvic cellulitis, maintaining there was not enough cellular tissue in the pelvis to produce a formidable tumor, and that all accumulations of pus of any magnitude were within the peritoneal cavity. They based their arguments entirely upon autopsies. Matthews Duncan, while not indorsing entirely the position of Bernutz and Goupil, advocates the theory of the intra-peritoneal accumulation of pus. But no writer of prominence in this country entertains the notion of pus being tolerated in the peritoneal cavity. The only clear statement of such a condition by any author in this country which I can find was pronounced by Professor Byford before the American Gynæcological Society in Philadelphia, although he also states that abscess may be formed in the areolar tissue. He says: "Collections of pus in the pelvis are found in the connective tissue of that cavity in many localities. Abscesses, however, are not confined to the connective tissue. They are found in the peritoneal *cul-de-sac* behind the uterus, and in the substance of the uterus and ovaries."

I was reared medically in the notion that the peritonæum was utterly intolerant of a foreign body, that the presence of pus within the peritoneal cavity meant certain death, and that of course an accumulation of pus in the pelvis could not possibly be anywhere but in the areolar tissue.

But, after standing at the elbow of Dr. Welch as he made successive autopsies on patients who had died of cellulitis and peritonitis, and looking in vain for tumors in the cellular tissue of the pelvis, I was greatly astonished by the statement of Dr. Welch that in his experience it was rare and exceptional to find such a condition. That we may have the exact opinion of Dr. Welch, I will quote from a recent letter of his upon this subject:

"I do not wish to be understood as altogether denying the occurrence of inflammatory exudations primarily into the pelvic connective tissue; I do, however, believe that the frequency of such primary exudations is greatly exaggerated, and it certainly has been my experience to find that the vast majority of cases which have been diagnosticated before death as cases of parametritis or pelvic cellulitis have proved, if they came to autopsy, to be cases of circumscribed exudations into the pelvic peritoneal cavity (pelvic peritonitis). I am led to believe that the various hardenings and tumefactions which, when felt near the uterus, are often considered evidences of pelvic cellulitis, acute or chronic, are in most cases due to acute or chronic pelvic peritonitis. Undoubtedly in many puerperal cases the inflammation starts in the connective tissue adjoining the uterus; but here the peritonæum rapidly becomes affected, and its involvement often plays the leading rôle in the subsequent pathological processes.

"I have made post-mortem examinations upon cases of abscess in the subperitoneal connective tissue of the pelvis. These abscesses have been due to such causes as diseased bone, cancer, and inflammation of the rectum, of the bladder, and of the uterus, surgical operations, and traumatisms. In only a minority of the cases could they be considered as of any gynæcological interest."

I have seen accumulations of pus on autopsy in the pelvis within the peritoneal cavity, and even in successive locules, reaching up as far as the lower surface of the liver. And in one case, the notes of which I have, a nest of fæcal

matter as large as an English walnut was found above the brim of the true pelvis, shut in on all sides by adhesions of intestines. An opening in the wall of the small intestine showed the source of its contents, and a tortuous canal, formed by adhesions among the intestines, led down into the bladder, through which an exit was found. This condition had existed for months, and was not the immediate cause of death. I cite this case to show that foreign material, even of the most irritating character, when discharged into the peritoneal cavity, may be tolerated by that membrane.

M. Forget, of Strassburg, gives a report of the autopsy of a woman who died of cancer of the uterus. She had seven years previously been believed to have ovarian dropsy, and had been tapped four times. "On opening the abdomen post mortem there was found at the supposed site of the ovarian cyst an ovoid cavity containing a large quantity of yellow serosity. This cavity was formed anteriorly by the great omentum, thickened and adherent to the anterior wall of the abdomen; posteriorly by a mass of small intestines adhering together and covered by false membranes; inferiorly by the uterus and ovaries reduced to a putrilage." The ovary or tube was evidently the origin and center of this accumulation, and it was entirely within the peritoneal cavity. But well-established cases of pelvic abscesses in which the collections of pus were within the peritoneal cavity, as proved by autopsy, are numerous and need not be multiplied here.

Aran (quoted by Duncan) describes these tumors in the following words:

"If we set about with care the dissection of the tumor, we find, proceeding from without inward, that it is constituted of false membranes, still soft and pretty easily torn, forming a layer more or less thick, sometimes quite continuous, at others hollowed out here and there by locules full of a liquid, sometimes sero-purulent or perhaps true pus. In the center of the tumor

we find one or both appendages of the uterus—*i. e.*, ovary and tube."

Such, then, are the pelvic abscesses—acute or chronic—which we meet with from time to time, not in the cellular tissue, but within the peritoneal cavity, and the original cause of the abscess just what Aran found in the center of the cavity—viz., the ovary and tube, one or both. In this statement I confine my cases to those of strictly gynæcological interest, excluding the puerperal condition.

The pelvis in all its pathological processes bears a striking analogy to the pleural cavity, with the exception that it has the additional circumstance of having the ovary and tube as exciting causes. In the chest we have a simple serous exudation, giving us hydrothorax; in the pelvis the same process gives us serous peritonitis; in the chest the inflammatory process may go on to plastic exudation and organization into pleuritic adhesions; in the pelvis the same process gives the omnipresent peritonitic adhesions; in the chest the exudate may break down into a pyothorax and the pleura be transformed into a pus-secreting surface; in the pelvis the same process gives purulent peritonitis or abscess; and the pus-secreting surface into which the peritonæum is transformed occasions the interminable difficulty that is experienced in obliterating these cavities.

But must we conclude that all pelvic abscesses of gynæcological interest are wholly within the peritoneal cavity? Bernutz declares that undoubted post-mortem proof of phlegmon in the cellular tissue about the uterus has never yet been adduced. I do not find any descriptions of such a condition, nor have I seen it. But I can readily understand how a pathologist, with the preconceived exaggerated notion of the sensitiveness of the peritonæum and its intolerance of a foreign substance that formerly held sway, might believe, when in the course of his autopsy he reached and

went through the adventitious membranes which shut in the pus, that he had reached the bottom of the peritoneal cavity and discovered the pus in tissues beneath, and therefore describe it as in the areolar tissue.

I do not consider this question settled by any means, but the settlement of it seems to be inclining strongly to the intra-peritoneal theory.

To sum up briefly the points of my paper: Cellulitis has been dethroned from the prominent position it has held in uterine pathology and as a serious complication in gynæcological cases. In its place have come salpingitis and perisalpingitis, oophoritis and perioophoritis, lymphadenitis, and peritonitic bands and adhesions. That cellulitis does occur I am not prepared to deny. It may indeed be present in all pelvic inflammations, but, if so, it is acute in its nature and comparatively harmless in its action, for it leaves no scars in its train. These conclusions are not based upon autopsies alone; clinical experience is accredited its right to judgment. But clinical experience in this matter has been transferred from the uncertain test of digital touch and bimanual manipulation to the crucial test of laparotomy.

If, then, the pathological processes of the pelvic serous membrane found upon autopsy and laparotomy will account for all the pathological conditions formerly attributed to cellulitis, while inflammation of the areolar tissue of the pelvis has only slight confirmation upon autopsy or laparotomy, the balance certainly swings strongly to the former. And, in dealing with inflammatory affections of the pelvis, we must bear in mind that the highest probability is that the tissue involved is a serous membrane.

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