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A STUDY OF THE PATHOLOGY AND TREATMENT OF INTRA-PELVIC INFLAMMATIONS.

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Intra-pelvic inflammations, with their sequelæ, comprise the most common conditions with which the gynecologist has to deal. In the entire compass of medical science and practise no subject has been more misunderstood and none more erroneously interpreted.

Thirty years ago Bernutz and Goupil, after careful clinical and post-mortem investigations, clearly described the true pathology of pelvic inflammations, but it is only since operative surgery has opened up the peritoneal cavity to daily exploration that their researches have been appreciated and accepted. Even at this advanced period, many of our prominent teachers and authors classify intra-pelvic inflammations under two heads—*parametritis* and *perimetritis*—with treatment adapted accordingly. Modern investigation has swept this classification aside, confirmed the truth and accuracy of Bernutz's researches, and demonstrated the relation of diseased states of the ovaries and Fallopian tubes, together with puerperal, specific, and other infections, to pelvic inflammations.

It is not my purpose to review before this audience the anatomical relations and histology of the pelvic organs, a task altogether superflous; nor will I, except in the most casual way, touch upon the vast literature of pelvic inflammations. It seems to me most profitable at this time to treat the subject from the pathological and clinical standpoint.

M. Bernutz made a most happy comparison between inflammation within the pelvis, and the same process within the chest. Skene and other modern writers have utilized the same analogy to describe and illustrate the pathology of intra-pelvic inflammation. In both thoracic and pelvic inflammation we have the croupous and catarrhal

processes. We have peritonitis and parenchymatous inflammation on the one hand, while we find pleuritis and parenchymatous inflammation on the other. In pelvic inflammations we have recovery by resolution just as in pleuro-pneumonia, leaving adhesions and bands in the one cavity as in the other. When the inflammatory process so interferes with nutrition as to destroy vitality, we have pelvic abscess in the one site and pyothorax in the other. We find the bacilli of tubercle invading the pelvic serous membrane and contained organs, just as in the pleura and lungs. A mucous surface furnishes access for infection in both cavities. M. Bernutz further states that uterine pathology is as certainly subordinate to a thorough acquaintance with pelvic peritonitis, as pulmonary diseases have been to a complete knowledge of pleuritis made possible by the discovery of auscultation. In the light of knowledge recently established this last statement shows how thorough and profound were the researches of these eminent clinicians and pathologists, MM. Bernutz and Goupil.

Permit me to continue in the lines indicated by Bernutz once again. After discussing the theory of pelvic inflammation promulgated by M. Nonat—essentially that of pelvic cellulitis, which until recently held full sway in the practise of modern gynecology—he says:

"For some time I had no idea that the view propounded by M. Nonat was a mere hypothesis which rested on no post-mortem evidence. And it was not till after the unfortunately fatal termination of two cases, that I was able to prove incontestably that the peri-uterine tumor, which during life presented all the symptoms of the so-called peri-uterine phlegmons, was not situated in the cellular tissue at all. In the autopsies in question, the tumor, which even after death presented all the usual signs, was seen to be formed by the pelvic viscera being matted by peritoneal adhesion. . . . . These researches, then, have led to the conclusion that inflammation of the pelvic peritoneum, which is the cause of the visceral adhesion, is a disease which is very commonly met with. . . . . Lastly, I conclude that inflammation of the pelvic serous membrane is symptomatic, and that it is generally symptomatic of inflammation of the ovaries or Fallopian tubes. Thus, great interest attaches to the study of this affection, and it is very important to understand thoroughly the symptoms, in order to describe satisfactorily the uterine, and more especially the tubo-ovarian, diseases which occasion it. . . . . It follows from all this that unless we get fatal cases to enable us to determine anatomically where the pelvic inflammation began, we cannot state positively whether it came from inflammation of the ovary or of the Fallopian tube; nor whether it was caused by the puerperal state, by blenorrhagia, scrofula,

or any other malady. Thus we can only lay hold, as it were, of the two ends of the pathological problem, the primary disease and the serous inflammation—the intermediate gap we can only fill up after death."[1]

Herein may be found the very essence of the most advanced pathological knowledge of the day concerning intra-pelvic inflammations, and it is surpassing strange that the researches of MM. Bernutz and Goupil lay before the profession for so many years like good seed upon sterile ground. It was only when the science and art of surgery made great strides forward, as illustrated in the perfected aseptic surgery of the day, that "the intermediate gap" which Bernutz could "only fill up after death" was filled up during the life of the patient. The researches of Bernutz and Goupil in this important field of pathology are complete, and constitute the basis of the pelvic surgery of the present time; their work is the first and the greatest—a monument to the genius and patient industry of these faithful followers of science.

The points relating to the pathology of pelvic inflammations which have been established, the correctness of which I am fully convinced by my own clinical observations and experience, may be grouped in this manner:

1. Intra-pelvic inflammations cannot be properly classified as parametritis and perimetritis, inasmuch as inflammations of serous and cellular tissues cannot be separated clinically or histologically.

2. Peri-uterine phlegmon of Nonat (pelvic cellulitis of Emmet) is as rare as inflammation of the cellular tissue in other parts of the body.

3. Intra-pelvic inflammation is, as a rule, *peritonitis*, resulting from disease of the ovaries and Fallopian tubes, arising in puerperal or gonorrhœal infection, or the miscellaneous infections carried to the endometrium by unclean instruments, tents, or medicinal agents, or from traumatism.

4. Pelvic peritonitis is symptomatic, never idiopathic.

Pelvic peritonitis presents every grade of severity. In some instances there is a mere inflammatory spot, giving rise to but little discomfort at the time and passing away without treatment, leaving a bare trace behind, often found post-mortem. A higher grade is illustrated by those instances wherein the peritoneum exhibits sub-

[1] Clinical Memoirs on the Diseases of Women. New Sydenham Society, London, 1867. Vol. ii. p. 5.

serous congestion, transudation of serum, and exudation of plastic material. In a more severe grade there is immense transudation of serum, which accumulates in the pouch of Douglas, corresponding to pleurisy with effusion. In a very high grade the entire pelvic peritoneum is involved, the several stages of the process—congestion and exudation—are followed by suppuration, an affection of fearful proportions, and, unless treated surgically, going often to a fatal issue. The sequelæ of pelvic peritonitis depend upon the vitality of the individual, the grade of the inflammatory process, and the area involved. Where the surface is limited, or may be quite extensive, recovery may take place by resolution and leave only slight adhesions behind. When the inflammation is higher and the exudate more extensive, layers and bands of false membrane remain, forming organized adhesions. The products of inflammation may be deposited over the uterus, ovaries, and broad ligaments, leaving these organs imbedded or entangled in a mass of adhesions. As time goes on, the exudate passes through repeated stages of congestion into organized tissue with constant tendency to contraction. Pressure upon the ovaries is followed by inflammation, degeneration, and atrophy of these organs. The fimbriated extremities of the Fallopian tubes are imprisoned and destroyed. At each recurring menstrual flux, these bands are made tense by congestion, increased in thickness, and more thoroughly organized. In addition to the lesions entailed by pressure, the secretions are retained, and ovarian abscess and pyosalpinx are common results. When the inflammation is very intense, involving sub-serous structures, the vitality of tissues is destroyed, and one form of pelvic abscess is the result.

Although it is not contemplated to discuss the diagnosis and symptomatology of intra-pelvic inflammation in this paper, I must be permitted to dwell for a moment upon the clinical picture which corresponds to the lesions I have just described. A woman suffers an attack of gonorrhea, often contracted innocently, and has a severe attack of pelvic peritonitis; or she has an abortion, or labor at full term, and has the misfortune to become infected and peritonitis results. After a severe and protracted illness, the acute symptoms pass away; in time, she gets up and is congratulated by her friends upon her convalescence and recovery from so severe an illness. Time wears on with improvement in her general condition, but she maintains that she is not well. The menstrual periods are

seasons of intense pain and distress, and usually opium is administered. By and by, the family physician makes an examination, and my observation has been that he usually decides a malposition of the uterus to be the principal trouble, and inserts a pessary. The trouble persists, and pain is intensified by the pessary, which after a varying period has to be abandoned. The woman is an invalid. If well-to-do, she spends the greater portion of her time in bed, drives out occasionally, and craves morphine, chloral, or other anodynes. She walks with a peculiar halting gait, has a pinched expression, and suffers from reflex nervous disturbances. She is treated with the hot vaginal douche, local applications to the cervix and vaginal vault, but is improved by none of them. About this time, massage, rest in bed, milk diet, with varying and unsatisfactory results, will be invoked in her behalf, but nothing in the way of permanent relief results. She is a helpless invalid, and a great sufferer. The ultimate issue of the case may be one of three alternatives: either to hold out until the menopause, when physiological repose and atrophy may bring relief; to remain an invalid for years with opium and all the accompanying misery, ending probably in abscess; or to have the diseased and imprisoned organs with their consequent histological changes removed. I submit that the picture is a familiar one to those who see much of pelvic disorders. In connection with such a pathological state, we must not overlook the persistent influence of the menstrual congestion upon the growth and density of the organized exudate, to which I have previously referred.

The treatment of intra-pelvic inflammations must depend upon the structures involved. The cardinal fact that pelvic peritonitis is always symptomatic, always the sequel and result of infection, must never be lost sight of in formulating any plan of treatment. Catarrhal inflammation of the endometrium may, by the ordinary process of continuity of surface, extend to the tubes and ovaries. Prolonged congestion with thickening of the mucous lining and retained secretions, results in localized peritonitis. Treatment by depletion, cleanliness, antisepsis, and drainage may arrest and limit the inflammatory process and induce a cure by resolution. The peritoneum is an immense lymph-sac, quick to open the avenues of microbic invasion. An untidy exploration with the uterine sound

often conveys the infectious spark which spreads from the endometrium like fire on the prairie. Gonorrhea is a disease leaving in woman the formidable sequelæ of salpingitis, peritonitis, pyosalpinx, ovarian abscess, and often general suppurative peritonitis. Labor and abortion are processes especially prone to admit infection, and, unless rigid cleanliness is observed, are usually followed by varying grades of pelvic inflammation. Rest; the clean, hot douche facilitating drainage; saline cathartics favoring revulsive drainage and depletion, are means of treatment which often arrest or limit the inflammatory process and lead to cure by resolution. To recount the various pathological states of the uterus, ovaries, and Fallopian tubes, with which general or localized pelvic peritonitis is associated would, of course, greatly exceed the limits of this paper.

In consequence of the matting together of the pelvic organs by adhesive inflammation, the exact seat and starting-point of the inflammatory process cannot be decided by the ordinary means of pelvic exploration. Fortunately, the indications for operative interference are so unmistakable that such exactitude in diagnosis is not essential for proper treatment. The localized pain, the fixation of movable organs, the exudation, and, when pus has formed, the rigors, fever, and emaciation are signs too positive to be overlooked by the experienced attendant. When the means that I have indicated fail to secure resolution, and septic symptoms present themselves, we may know that the only treatment is to open the abdomen, evacuate the pus, remove the inflammatory mass (usually Fallopian tube and ovary), cleanse the peritoneum, and establish drainage. Where the disease has gone on to suppuration, the surgeon has no option. Here the only course worthy of consideration is total removal of inflamed, suppurating, and degenerated ovaries and tubes, of which pelvic peritonitis is the result. Equally is it the surgeon's duty to operate in those cases in which the diseased tubes and ovaries—one or both—can be made out by the touch upon the side of the uterus, accompanied with pain and the familiar functional derangement incident to diseased states of the tubes and ovaries. I am presuming of course, upon discriminating knowledge on the part of the surgeon. To operate early, before adhesions become organized and the inflammatory area extends, and before pus forms and the system is infected, simplifies the operation,

enhances the patient's chances of recovery, and abbreviates suffering.[1] In illustration I may mention hydrosalpinx and hematosalpinx, so prone to purulent change.

When bands of false membrane have imprisoned the Fallopian tubes and ovaries, with the consequent alterations of structure already described; when the tubes are in a state of constantly recurring inflammation, with functions destroyed and secretions retained; when the ovary has become cirrhotic or with the tube has undergone caseous degeneration; when the patient is a miserable invalid and an opium *habitué*, then these organs should be removed and the patient restored to health, home, and society. In cases of limited pelvic inflammation, careful discrimination is necessary in deciding upon operative treatment.

For accurate diagnosis an experienced tactile sense and repeated examinations are required. Many cases of intra-pelvic inflammation of lesser grade are improved and some few cases cured by the hot douche, the application of iodine and glycerine, the supporting tampon, and rest; but by far the greatest number, in which the inflammatory process has been more active and extensive, are incurable without operative interference. Moreover, women dependent upon their own labor for a livelihood, and those of meagre pecuniary resources, are unable to indulge in months of palliative treatment for temporary relief. To those of us who have dealt with cases of long-standing pelvic inflammation at the operating table, and shelled out diseased tubes and ovaries from a mass of organized exudate, the cures claimed for electricity in such cases are difficult to accept. When treated upon sound surgical principles by abdominal section the results are good, the cures permanent, and restoration is complete.

[1] Operation by abdominal section should invariably be adopted in preference to puncture of Douglas's space through the vagina.