CHAPTER X.

PELVIC CELLULITIS AND PELVIC PERITONITIS.

Recognized from the Earliest Times.—From the earliest times the occurrence after parturition of severe forms of inflammatory disease in and about the pelvis, frequently ending in suppuration, has been well known. It is only of late years, however, that these diseases have been made the subject of accurate clinical and pathological investigation, and that their true nature has begun to be understood. Nor is our knowledge of them as yet by any means complete. They merit careful study on the part of the accoucheur, for they give rise to some of the most severe and protracted illnesses from which puerperal patients suffer. They are often obscure in their origin and apt to be overlooked, and they not rarely leave behind them lasting mischief.

These diseases are not limited to the puerperal state. On the contrary, many of the severest cases arise from causes altogether unconnected with childbearing. These will not be now considered, and this chapter deals solely with such forms as may be directly traced to childbirth.

Modern researches have demonstrated that there are two distinct varieties of inflammatory disease met with after labor which differ materially from each other in many respects. In one of these the inflammation affects chiefly the connective tissue surrounding the generative organs contained within the pelvis, or extends up from beneath the peritoneum and into the iliac fossæ. In the other it attacks that portion of the peritoneum which covers the pelvic viscera, and is limited to it.

Variety of Nomenclature.—So much is admitted by all writers; but great obscurity in description, and consequent difficulty in understanding satisfactorily the nature of these affections, have resulted from the variety of nomenclature which different authors have adopted.

Thus the former disease has been variously described as pelvic cellulitis, peri-uterine phlegmon, para-metritis, or pelvic abscess; while the latter is not unfrequently called peri-metritis, as contradistinguished from para-metritis. The use of the prefix *para* or *peri*, to distinguish the cellular or peritoneal variety of inflammation, originally suggested by Virchow, has been pretty generally adopted in Germany, and has been strongly advocated in Great Britain by Matthews Duncan. It has never, however, found much favor with English writers, and the similarity of the two names is so great as to lead to confusion. I have, therefore, selected the terms *pelvic peritonitis* and *pelvic cellulitis*, as conveying in themselves a fairly accurate notion of the tissues mainly involved.

Importance of Distinguishing the Two Classes of Cases.—The important fact to remember is that there exist two distinct varieties of inflammatory disease presenting many similarities in their course, symptoms, and results, often occurring simultaneously, but in the main distinct in their pathology and capable of being differentiated. Thomas compares them—and, as serving to fix the facts on the memory, the illustration is a good one—to pleurisy and pneumonia. "Like them," he says, "they are separate and distinct, like them affect different kinds of structure, and like them they generally complicate each other." It might, therefore, be advisable, as most writers on the disease occurring in the non-puerperal state have done, to treat of them in two separate chapters. There is, however, more difficulty in distinguishing them as puerperal than as non-puerperal affections, for which reason, as well as for the sake of brevity, I think it better to consider them together, pointing out as I proceed the distinctive peculiarities of each.

Seat of Disease.—When attention was first directed to this class of diseases the pelvic cellular tissue was believed to be the only structure affected. This was the view maintained by Nonat, Simpson, and many modern writers. Attention was first prominently directed to the importance of localized inflammation of the peritoneum, and to the fact that many of the supposed cases of cellulitis were really peritonitic, by Bernutz. There can be no doubt that he here made an enormous step in advance. Like many authors, however, he rode his hobby a little too hard, and he erred in denying the occurrence of cellulitis in many cases in which it undoubtedly exists.

Etiology.—The great influence of childbirth in producing these diseases has long been fully recognized. Courty estimates that about two-thirds of all the cases met with occur in connection with delivery or abortion, and Duncan found that out of 40 carefully selected cases 25 were associated with the puerperal state.

It is pretty generally admitted by most modern writers that both varieties of the disease are produced by the extension of inflammation from either the uterus, the Fallopian tubes, or the ovaries. This point has been especially insisted on by Duncan, who maintains that the disease is never idiopathic, and is "invariably secondary either to mechanical injury, or to the extension of inflammation of some of the pelvic viscera, or to the irritation of noxious discharges through or from the tubes or ovaries."

Their intimate connection with puerperal septicæmia is also a prominent fact in the natural history of the diseases. Barker mentions a curious observation illustrative of this, that when puerperal fever is endemic in the Bellevue Hospital, in New York, cases of pelvic peritonitis and cellulitis are also invariably met with. Olshausen has also remarked that in the Lying-in Hospital at Halle, during the autumn vacation, when the patients are not attended by practitioners, and when, therefore, the chance of septic infection being conveyed to them is less, these inflammations are almost always absent. As inflammation of the lining membrane of the uterus, of the vaginal mucous membrane, and of the pelvic connective tissue are of very constant occurrence as local phenomena of septic absorption, the connection between the two classes

of cases is readily susceptible of explanation. Schroeder, indeed, goes further, and includes his description of these diseases under the head of puerperal fever. They do not, however, necessarily depend upon it; for, although it must be admitted that cases of this kind form a large proportion of those met with, others unquestionably occur which cannot be traced to such sources, but are the direct result of causes altogether unconnected with the inflammation attending on septic absorption, such as undue exertion shortly after delivery, or premature coition. Mechanical causes may beyond doubt excite the disease in a woman predisposed by the puerperal process, but they cannot fairly be included under the head of puerperal fever.

Seat of the Inflammation in Pelvic Cellulitis.—Abundance of areolar tissue exists in connection with the pelvic viscera, which may be the seat of cellulitis. It forms a loose padding between the organs contained in the pelvis proper, surrounds the vagina, the rectum, and the bladder, and is found in considerable quantity between the folds of the broad ligaments. From these parts it extends upward to the iliac fossæ and the inner surface of the abdominal parietes. In any of these positions it may be the seat of the kind of inflammation we are discussing. The essential character of the inflammation is similar to that which accompanies areolar inflammation in other parts of the body. There is first an acute inflammatory œdema, followed by the infiltration of the areolæ of the connective tissue with exudation, and the consequent formation of appreciable swellings. These may form in any part of the pelvis. Thus we may meet with them—and this is a very common situation—between the folds of the broad ligaments, forming distinct hard tumors, connected with the uterus and extending to the pelvic walls, their rounded outlines being readily made out by bimanual examination. If the cellulitis be limited in extent, such a swelling may exist on one side of the uterus only, forming a rounded mass of varying size and apparently attached to it. At other times the exudation is more extensive, and may completely or partially surround the uterus, extending to the cellular tissue between the vagina and rectum or between the uterus and the bladder. In such cases the uterus is imbedded and firmly fixed in dense, hard exudation. At other times the inflammation chiefly affects the cellular tissue covering the muscles lining the iliac fossæ. There it forms a mass easily made out by palpation, but on vaginal examination little or no trace of the exudation can be felt, or only a sense of thickness at the roof of the vagina on the same side as the swelling.

Seat of the Inflammation in Pelvic Peritonitis.—In pelvic peritonitis the inflammation is limited to that portion of the peritoneum which invests the pelvic viscera. Its extent necessarily varies with the intensity and duration of the attack. In some cases there may be little more than irritation, while more often it runs on to exudation of plastic material. The result is generally complete fixation of the uterus and hardening and swelling in the roof of the vagina, and the lymph poured out may mat together the surrounding viscera, so as to form swellings, difficult, in some cases, to differentiate from those resulting from cellulitis. On post-mortem examination the pelvic viscera

are found extensively adherent, and the agglutination may involve the coils of the intestine in the vicinity, so as sometimes to form tumors of considerable size.

Relative Frequency of the Two Forms of Disease.—The relative frequency of these two forms of inflammation as puerperal affections is not easy to ascertain. In the non-puerperal state the peritonitic variety is much the more common, but in the puerperal state they very generally complicate each other, and it is rare for cellulitis to exist to any great extent without more or less peritonitis.

Symptomatology.—The earliest symptom is pain in the lower part of the abdomen, which is generally preceded by rigor or chilliness. The amount of pain varies much. Sometimes it is comparatively slight, and it is by no means rare to meet with patients who are the subjects of very considerable exudations who suffer little more than a certain sense of weight and discomfort at the lower part of the abdomen. On the other hand, the suffering may be excessive, and is characterized by paroxysmal exacerbations, the patient being comparatively free from pain for several successive hours, and then having attacks of the most acute agony. Schroeder says that pain is always a symptom of peritonitis, and that it does not exist in uncomplicated cellulitis. The swellings of cellulitis are certainly sometimes remarkably free from tenderness, and I have often seen masses of exudation in the iliac fossæ which could bear even rough handling. On the other hand, although this is certainly more often met with in non-puerperal cases, the tenderness over the abdomen is sometimes excessive, the patient shrinking from the slightest touch. The pulse is raised, generally from 100 to 120, and the thermometer shows the presence of pyrexia. During the entire course of the disease both these symptoms continue. The temperature is often very high, but more frequently it varies from 100° to 104°, and it generally shows more or less marked remissions. In some cases the temperature is said not to be elevated at all, or even to be subnormal, but this is certainly quite exceptional. Other signs of local and general irritation often exist. Among them, and most distinctly in cases of peritonitis, are nausea and vomiting, and an anxious, pinched expression of the countenance, while the local mischief often causes distressing dysuria and tenesmus. The latter is especially apt to occur when there is exudation between the rectum and vagina which presses on the bowel. The passage of feces, unless in a very liquid form, may then cause intolerable suffering.

Such symptoms may show themselves within a few days after delivery, and then they can barely fail to attract attention. On the other hand, they may not commence for some weeks after labor, and then they are often insidious in their onset and apt to be overlooked. It is far from rare to meet with cases six weeks or more after confinement in which the patient complains of little beyond a feeling of malaise and discomfort, and in which, on investigation, a considerable amount of exudation is detected which had previously entirely escaped observation.

Results of Physical Examination.—On introducing the finger into the vagina it will be found to be hot and swollen, in some cases

distinctly œdematous, and on reaching the vaginal cul-de-sac the existence of exudation may generally be made out. The amount of this varies much. Sometimes, especially in the early stage of the disease, there is little more than a diffuse sense of thickness and induration at either side of, or behind, the uterus. More generally, careful bimanual examination enables us to detect a distinct hardening and swelling, possibly a tumor of considerable size, which may apparently be attached to the sides of the uterus and rise above the pelvic brim, or may extend quite to the pelvic walls. The examination should be very carefully and systematically conducted with both hands, so as to explore the whole contour of the uterus before, behind, and on either side, as well as the iliac fossæ; otherwise a considerable exudation might readily escape detection.

When the exudation is at all great, more or less fixity of the uterus is sure to exist, and this is a very characteristic symptom. The womb, instead of being freely movable by the examining finger, is firmly fixed by the surrounding exudation, and in severe forms of the disease is quite incased in it. More or less displacement of the organ is also of common occurrence. If the swelling be limited to one side of the pelvis or to Douglas's space, the uterus is displaced in the opposite direction, so that it is no longer in its usual central position.

The differential diagnosis of pelvic cellulitis and pelvic peritonitis cannot always be made, and indeed in many cases it is impossible, since both varieties of disease coexist. The elements of differentiation generally insisted on are, the greater general disturbance, nausea, etc., in pelvic peritonitis, with an earlier commencement of the symptoms after labor. The swellings of pelvic peritonitis are also more tender, with less clearly defined outline than those of cellulitis. When the cellulitis involves the iliac fossa the diagnosis is, of course, easy, and then a continuous retraction of the thigh on the affected side (an involuntary position assumed with the view of keeping the muscles lining the iliac fossa at rest) is often observed. When the inflammation is chiefly limited to the cavity of the pelvis, the distinction between the two classes of cases cannot be made with any degree of certainty.

Terminations.—Both forms of disease may end either in resolution or in suppuration. In the former case, after the acute symptoms have existed for a variable time, it may be for a few days only, it may be for many weeks, their severity abates, the swellings become less tender and commence to contract, become harder, and are gradually absorbed, until at last the fixity of the uterus disappears and it again resumes its central position in the pelvic cavity. This process is often very gradual. It is by no means rare to find a patient, even some months after the attack, when all acute symptoms have long disappeared, who is even able to move about without inconvenience, in whom the uterus is still immovably fixed in a mass of deposit, or is at least adherent in some part of its contour. More or less permanent adhesions are of common occurrence, and give rise to symptoms of considerable obscurity, which are often not traced to their proper source.

Symptoms of Suppuration.—When the inflammation is about to terminate in suppuration, the pyrexial symptoms continue, and eventually well-marked hectic is developed, the temperature generally showing a distinct exacerbation at night. At the same time rigors, loss of appetite, a peculiar yellowish discoloration of the face, and other signs of suppuration, show themselves. The relative frequency of this termination is variously estimated by authors. Duncan quoted Simpson as calculating it to occur in half the cases of pelvic cellulitis, but stated his own belief that it is much more frequent. West observed it in 23 out of 43 cases following delivery or abortion, and McClintock in 37 out of 70. Schroeder said that he had only once seen suppuration in 92 cases of distinctly demonstrable exudation, a result which is certainly totally opposed to common experience. Barker also stated that in his experience suppuration in either pelvic peritonitic or cellulitis "is very rare, except when they are associated with pyæmia or puerperal fever." It is certain that suppuration is more likely to occur in pelvic cellulitis than in pelvic peritonitis, but it unquestionably occurs, in Great Britain at least, much more frequently than the statements of either of these authors would lead us to suppose.

Channels through which Pus may Escape.—The pus may find an exit through various channels. In pelvic cellulitis, more especially when the areolar tissue of the iliac fossa is implicated, the most common site of exit is through the abdominal wall. It may, however, open at other positions, and the pus may find its way through the cellular tissue and point at the side of the anus or in the vagina, or it may take even a more tortuous course and reach the inner surface of the thigh. Pelvic abscesses not uncommonly open into the rectum or bladder, causing very considerable distress from tenesmus or dysuria. According to Hervieux, it is chiefly the peritoneal varieties which open in this way. Not unfrequently more than one opening is formed; and when the pus has burrowed for any distance long fistulous tracts result which secrete pus for a length of time and are very slow to heal. Rupture of an abscess into the peritoneal cavity, especially of a peritonitic abscess, is a possible (but fortunately a very rare) termination, and will generally prove fatal by producing general peritonitis. In one case which I have recorded in the fifteenth volume of the *Obstetrical Transactions*, suppuration was followed by extensive necrosis of the pelvic bones. Two similar cases are related by Trousseau in his *Clinical Medicine*, but I have not been able to meet with any other examples of this rare complication, which was probably rather the result of some obscure septicæmic condition than of extension of the inflammation.

Prognosis.—The prognosis is favorable as regards ultimate recovery, but there is great risk of a protracted illness which may seriously impair the health of the patient, especially if suppuration result. Hence it is necessary to be guarded in an expression of opinion as to the consequences of the disease. Secondary mischief is also far from unlikely to follow, from the physical changes produced by the exudation, such as permanent adhesions or malpositions of the uterus, or organic alterations in the ovaries or Fallopian tubes.

Treatment.—In the treatment of both forms of disease the important points to bear in mind are the relief of pain and the necessity of absolute rest; and to these objects all our measures must be subordinate, since it is quite hopeless to attempt to cut short the inflammation by any active medication.

If the disease be recognized at a very early stage, the local abstraction of blood by the application of a few leeches to the groin or to the hemorrhoidal veins may give relief; but the influence of this remedy has been greatly exaggerated, and when the disease is of any standing it is quite useless. Leeches to the uterus, often recommended, are, I believe, likely to do more harm than good (unless in very skilful hands), from the irritation produced by passing the speculum. Opiates in large doses may be said to be our sheet-anchor in treatment whenever the pain is at all severe, either by the mouth, in the form of morphia suppositories, or injected subcutaneously. In the not uncommon cases in which pain comes on severely in paroxysms, the opiates should be administered in sufficient quantity to lull the pain; and it is a good plan to give the nurse a supply of morphia suppositories (which often act better than any other form of administering the drug), with directions to use them immediately the pain threatens to come on. When there is much pyrexia large doses of quinine may be given with great advantage along with the opiates. The state of the bowels requires careful attention. The opiates are apt to produce constipation, and the passage of hardened feces causes much suffering. Hence it is desirable to keep the bowels freely open. Nothing answers this purpose so well as small doses of castor oil, such as half a teaspoonful given every morning. Warmth and moisture constantly applied to the lower part of the abdomen give great relief, either in the form of large poultices of linseed-meal, or, if these prove too heavy, of spongio-piline soaked in boiling water. The poultices may be advantageously sprinkled with laudanum or belladonna liniment. I say nothing of the use of mercurials, iodide of potassium, and other so-called absorbent remedies, since I believe them to be quite valueless and apt to divert attention from more useful plans of treatment.

The most absolute rest in the recumbent position is essential, and it should be persevered in for some time after the intensity of the symptoms is lessened. The beneficial effect of rest in alleviating pain is often seen in neglected cases, the nature of which has been overlooked, instant relief following the laying up of the patient.

When the acute symptoms have lessened, absorption of the exudation may be favored and considerable relief obtained from counter-irritation, which should be gentle and long-continued. The daily use of tincture of iodine until the skin peels, perhaps best meets this indication, but frequently repeated blisters are often very serviceable. This I believe to be a better plan than keeping up an open sore with savine ointment or similar irritating applications.

When suppuration is established, the question of opening the abscess arises. When this points in the groin and the matter is superficial, a free incision may be made, and here, as in mammary abscess, the antiseptic treatment is likely to prove very serviceable. The abscess

should, however, not be opened too soon, and it is better to wait until the pus is near the surface. The importance of not being in too great a hurry to open pelvic abscesses has been insisted on by West, Duncan, and other writers, and I have no doubt the rule is a good one. It is more especially applicable when the abscess is pointing in the vagina or rectum, where exploratory incisions are apt to be dangerous, and when the presence of pus should be positively ascertained before operating. We have in the aspirator a most useful instrument in the treatment of such cases, which enables us to remove the greater part of the pus without any risk, and the use of which is not attended with danger, even if employed prematurely. If it does not sufficiently evacuate the abscess, a free opening can afterward be safely made and a suitable drainage-tube inserted into the abscess cavity. The surgical treatment of pelvic abscess is, however, too wide a subject to admit of being satisfactorily treated here.

The diet should be abundant, but simple and nutritious. In the early stages of the disease, milk, beef-tea, eggs, and the like will be sufficient. After suppuration a large quantity of animal food is necessary, and a sufficient amount of stimulants. The drain on the system is then often very great, and the amount of nourishment patients will require and assimilate, when a copious purulent discharge is going on, is often quite remarkable. A general tonic plan of medication is also indicated, and such drugs as iron, quinine, and cod-liver oil will prove useful.