Am Gyn Obs J 1891 V-1

STERILITY IN THE NULLIPARA

PATHOLOGICALLY AND ETHICALLY CONSIDERED.[1]

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The subject of this paper, *Sterility in the Nullipara*, easily divides itself under four heads. Under the first of these, we find those cases where the uterus or ovaries, or both, are absent or have not developed at puberty and where menstruation has never appeared.

I have had but one case in my own practice where this diagnosis was verified by laparotomy. The case is a curious one, because it presents a complication so unusual that it threw a doubt upon the diagnosis of sterility, to which all other symptoms pointed. The patient, about thirty-three years old, came to me to be relieved of backache and consequent inability to do her work. Her appearance was not remarkable except that she seemed anæmic, and her breasts were small and flat. She had never married, but, recognizing that contingency, she wished an opinion as to the possibility of conception, in view of the absence of the menstrual function. I found the vagina normal in size, the cervix disproportionately long, the uterus retroverted, with its fundus so firmly glued to the rectum that the posterior *cul-de-sac* was obliterated. After trying unsuccessfully for some months to raise and replace the uterus by means of "packing" behind and against the organ, and by manipulation bi-manually, I determined upon hysterorrhaphy. On opening the abdomen I detached the fundus with some difficulty but without hemorrhage, only to find that the broad ligaments were so shortened by some previous peritonitis that it was impossible to raise the fundus above the bladder. The upper edge of the ligaments felt like knotted cords and were without elasticity; of one ovary I could find no trace, while the other resembled a small hazel nut in size. As I had used considerable force in detaching the uterus, I

[1] Read before the Alumni Association of the Woman's Hospital in the State of New York, January 19, 1891.

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did not venture (and this I now regret) to insert a pessary in the vagina at that time, but having anteverted and drawn up the organ as far as I could, I allowed the intestines to fall behind it and closed the abdomen. The patient reacted well and was up in a few weeks, but the fundus returned to its old position, and except that the diagnosis of sterility had been confirmed, the patient derived no benefit from the operation. This case is, I think, instructive from its presenting the results of an extensive local inflammation in connection with undeveloped uterus and ovaries; for, judging from this latter fact, the local blood supply must have always been inadequate, even for nutrition. I may add, incidentally, that neither the patient herself, nor any of her family could give any history of a fall or other injury or even any illness to which peritonitis could be referred.

The *second division* of my subject embraces those cases in which there is partial or complete destruction of the parenchyma of the ovaries or of the tubes due to repeated attacks of peritonitis, either gonorrhœal or simple, or from some other cause. If the disease of the tubes has caused complete destruction of the villi and epithelium on both sides, or if the whole parenchyma of both ovaries has disappeared, the case may be relegated to the first division already discussed. But if but one tube or the parenchyma of one or both ovaries be but partially destroyed, a very nice and, consequently, much-vexed question as to treatment arises. And here the ethical side of our subject obtrudes itself. As physicians, we are avowedly the servants of Nature and should desire, above all, to conserve her forces; when inadequate, to strengthen them; when scattered, to gather them into line and to direct them to the accomplishment of her purpose. To destroy the channels through which these forces must work—in other words, and dropping metaphor, to remove any organ in the human system merely because it is ill, not as a last resource, nor as a necessary defence against the advancement of disease to neighboring parts—this is surely not the principle to guide us. And it is just here that I would refer to the mode of treatment called Tait's operation.

I do not care to discuss the work of Tait's self-styled followers, whose name is legion and who have caused sterility in innumerable women for backache, for headache, for nervousness, for hysteria, for epilepsy, for painful menstruation, for retroversion, for anteflexion, for prolapsed ovary and for *medical students.* This tidal-wave which has swept the country is, happily, receding, and the profession at large looks askance at him who very frequently removes the uterine appendages as at one intent upon a record.

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We cannot hold Tait responsible for this wholesale overthrow of the chief and noblest aim, physically speaking, of woman's existence, for that eminent operator never claimed his procedure a panacea for diagnostic difficulties. And yet, two principles which he advocates for guidance of himself and others in this operation are, I believe, deserving of equally severe criticism.

He maintains the presence of pus in a tube to be an indication for immediate removal; secondly, that, if the appendages of one side are to be removed, those of the other side should at the same time be excised, even though healthy. Dr. Emmet was the first in this country, so far as I can discover, to protest publicly against the use of Tait's operation, except as an acknowledgement of inability to cure; as he was also the first to call attention here to the value of the operation, exhibiting at the same time before the New York Obstetrical Society several specimens removed by Mr. Tait himself. Since this protest, in which its author asserted his ability to cure in many cases the symptoms arising from purulent tubes and diseased ovaries without a radical operation, it has come within the experience of most of us here and of many others to do the same thing. Only one case has come under my own observation in which an enlarged tube of undoubted gonorrhœal origin, after vaginal treatment with iodine and glycerine for several months, emptied itself through the uterus and disappeared to the touch. This woman, nearly three years later, is now pregnant. But this experience is by no means singular and has occurred to many.

How often enlarged, tender and prolapsed ovaries, which formerly presented a *prima-facie* case for immediate operation are now, by patient, faithful treatment with wool-pads judiciously placed, lifted to a plane in the pelvis at which, normal circulation asserting itself, the enlarged vessels contract and leave the ovaries small enough to retain their normal position.

A typical case came to me about a year ago, revealing a prolapsed ovary apparently as large as a walnut and lying directly behind and above the cervix. After three or four months of the treatment I have described, neither I nor two other gynæcologists who had positively felt the ovary formerly, were then able to find any trace of it, though examining her thoroughly under ether.

Again, when the Tait craze was at its height, it was no uncommon thing for an operator to remove the appendages first and to examine the character and extent of the lesion afterwards. That this is no exaggeration all of us who have had opportunity to see much of this work done in hospitals and elsewhere can testify.

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Now, the honest surgeon, if he find one, still more both, ovaries but partially diseased, will puncture the follicular cysts, or even remove a large portion of hopeless tissue and leave the remaining healthy portion of the organ to heal and do its work. If he find but little pus in a tube, he will pass a filiform probe through the fimbriated extremity into the uterus, knowing that by thus emptying it he can often restore its function.

Mr. Tait's second principle mentioned above: ***That the appendages of both sides, though healthy on one, should simultaneously suffer extirpation, because his experience has taught him that when this is not done the healthy tube, after a time, becomes similarly affected,*** has even less excuse.

If Mr. Tait were a practical gynæcologist, as well as a brilliant operator, he would find means of curing the pelvic inflammation which always accompanies a purulent state of the tubes and which still remains after the latter's removal. He would do this before the inflammation became, by mishap, again acute, to the involvement of the other tube. And should the lesion be of gonorrhœal origin, if he would also see that the husband in each case was quite cured of an old and perhaps forgotten stricture, Mr. Tait might always leave the healthy tube *in situ* with the certainty of no return of pus—at least, while the husband refrained from going afield. These facts are so well understood by many, perhaps by most, of the gynæcologists here that I need merely recall them to your memory as refutatory evidence against an operation which, though of immense value within a limited scope, has caused much unnecessary sterility and great misery among women.

My third division of sterile nullipara presents, on vaginal examination, the results of some former pelvic inflammation, or else what I shall term, for want of a more comprehensive word, a present sub-acute inflammation of one or both broad ligaments, or of the utero-sacral folds, but without involvement of either ovaries or tubes. With this inflammatory condition we find, of course, its consequent displacements and mal-positions of the uterus.

All these varied conditions, *save one*, present no particular difficulty in the curing of sterility. Indeed, the married patient often becomes pregnant soon after we have succeeded in anteverting the uterus and before we have entirely cured the inflammatory condition.

The one obstinate exception referred to presents, as its accompaniments, inflammation in either or both lateral ligaments, and especially in the utero-sacral ligaments. Again we find all the liga-

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ments normal and the uterus perfectly free. But in either case, there is one unvarying feature of this class and that is ***ante-flexion of the uterus, just above the internal os.*** That anteflexion in an otherwise normal uterus is always the result of inflammation with consequent congestion of the blood-vessels in the peri-uterine tissues, I firmly believe.

I never remember to have seen a case of anteflexion, either at the Woman's Hospital or in my private practice where, given a perfectly mobile and well-developed uterus entirely free from inflammation or new growth, there has not been also so marked a prolapse of that organ that the back of the cervix rested on the posterior wall of the vagina while the patient lay on her back. This would certainly argue some interference with the return circulation of the body of the uterus.

As I have said, we often find an anteflexion in a fully-developed uterus existing without any other evidence of a previous inflammation in the surrounding parts to explain its origin. I have also stated that I believe such an anteflexed uterus to be always prolapsed from congestion of the fundus. My explanation of this phenomenon is as follows: It is mechanically demonstrable that if the utero-sacral ligaments become shortened by an acute inflammation at that place, the fundus uteri becomes sharply anteverted and swollen by the consequent interference with its circulation through those ligaments. As the organ becomes heavier, its tendency is to sag in the pelvis, which it can only do by bending forward at a point just above their insertion, the cervix itself being held forward by its attachment to the bladder. Thus anteflexion is produced. Let the acute stage of this inflammation now give way and with the decrease of the arterial determination to the part, the veins will empty themselves more slowly, causing increase in weight of the uterus and increase of flexure. This flexure itself now acts as an added interference to the circulation by mechanical pressure upon the veins leaving the womb at that part. After a time, the inflammatory process begins to resolve and the utero-sacral ligaments to relax, whereupon the heavy uterus begins to prolapse, dragging thereby upon, and so shortening, the diameter of its veins coming from the broad ligaments, as well as those in front and behind. The posterior ligaments may now go on to health and recover completely their normal elasticity, but the congested uterus cannot rise high enough in the pelvis to empty its dilated veins, and thus failing to straighten itself, the anteflexion remains. My theory as to the origin of this condition—a subject so much in dispute—is fur-

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ther supported by two clinical facts. I have observed that, while menstruating, the uterus straightens itself and loses its flexure, which must be explained, it seems to me, by the fact that the increased determination of the arterial blood causes the veins to empty themselves rapidly, thus permitting the fundus to rise in the pelvis, while the flow lasts. The other clinical observation is that, if an anteflexed uterus be raised upon a retroversion pessary that is not much curved at the back, it will after a time become less anteverted and the flexure will disappear. I know it is stated that the uterus has been found flexed even in utero, but judging by analogy, I cannot believe that such a primal deformity could have ever developed into a fully formed uterus.

I now come to the method of treatment which I pursue practically in all such cases of sterility.

If I can detect any inflammation or congestion in the uterine ligaments, I treat that first until I have recovered for the uterus its normal mobility. When the anteflexion alone remains, I usually insert first a small, soft rubber ring that I may raise the uterus from the floor of the pelvis. Treatment with iodine and glycerine is still continued that it may assist in the contracting and emptying of the uterine veins. At the same time, I restore to a healthy condition the glands of the cervical canal, which, in every case of long-standing anteflexion, exude a thick, glairy and tenacious mucus—another evidence of the congested state of the uterus. This mucus forms a plug to the canal and, being acid, is itself a bar to pregnancy. In some cases, where this discharge is very profuse, I begin by the thorough use of the dull curette up to but not beyond the internal os. When the discharge is moderate in quantity, I pass Hanks' graduated dilators, which I use as sounds, quite up to the internal os. I do this slowly making pressure at the same time against the sides of the canal. After a time, the secretion becomes normal in character and quantity. I then insert, if I have not already done so, an Emmet's hard-rubber pessary, which draws the os externum backward towards the posterior fornix vaginæ. I use an Emmet's pessary because its slight posterior curve does not put the utero-sacral ligaments upon the stretch and thereby increase the anteversion.

The patient is now in a fair way to become pregnant, but as most patients are impatient to see immediate results from their treatment, I generally direct them at this time to come to me as soon after menstruation as possible. I thereupon clean out the vagina and the cervical canal very thoroughly and place pledgets of cotton soaked in an alkaline solution both in the vagina and in

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the cervix. The pessary is, of course, left *in situ*. After this I direct the patient to go home, to remove the cotton pads by their strings, to take a hot alkaline douche, and then to have immediate sexual intercourse with her husband, who has previously been requested to hold himself in waiting. This intercourse, preceded by alkaline douches, is repeated for several days thereafter. This is, I think, the least objectionable of the several *one-two-three-go* methods of obtaining this laudable end which have been presented to the profession.

I find in my note-book a typical case treated successfully in this way. She was nullipara, twenty-three years of age, married at twenty and menstruated at eleven years. Had always been irregular as to time of period until her marriage, after which it came regularly every twenty-eight days, lasting four. She had had constant backache, headache in temples, on top and in back of head for about four years, while previously to this she had felt pains at times, for many years, in the left side. All these symptoms had been much increased by lifting a heavy weight recently. Examination showed an anteflexed and prolapsed uterus and inflammation in both broad ligaments. After treating her several months, I was able to prepare her for conception in the way already described. After the second trial, she became pregnant and carried to full term. Without this preparation I do not think this woman could have conceived, for so flexed was the cervix that I doubt if the semen of her husband, thrown into the posterior *cul-de-sac*, ever touched the os externum; and hardy indeed must have been that spermatozoön who could have passed unscathed through that acrid mass to its haven of rest.

As to the several operations upon the cervix for the cure of anteflexion and *so-called obstructive dysmenorrhœa*, and, incidentally, for sterility, the only one I consider not positively dangerous to the patient on account of the peritonitis apt to follow a rude and forcible straightening of the uterus, or on account of the artificial laçeration of the cervix and the possible sequelæ of that condition, among them epithelioma, is that lately devised by Dr. Dudley, of Chicago. This has the great merit of leaving no raw surface for septic absorption. But the principle underlying all operations devised for the cure of anteflexion and other concomitant symptoms, seems to me so false and so unnecessary, even when in its expression not dangerous to life, and my own success in curing these conditions by what appears to me the natural and, therefore, rational method has been so satisfactory that I never employ them. Nevertheless, should I ever have a case of sterility of this class which resisted

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treatment, I would not hesitate to use Dr. Dudley's ingenious operation as the one which offered the best chance of success and the least risk.

My *fourth and last division* of sterile cases embraces those which sometimes with, and sometimes without, anteflexion exhibit marked irregularity of menstruation, accompanied by a tendency to rapid corpulence. Although I believe these cases very often represent a prolonged stage of the lesion just described in the third division of this subject, this is not always the case. We find just as many cases without anteflexion as with it. But, clinically and therapeutically, all these are so similar, whatever their origin, that they form one distinct category. The special features of this class, then, are irregularity in, or entire stoppage of, menstruation followed, after a time, by a rapid taking on of flesh. All the cases of this kind that I have seen have been young women, not over twenty-five years, and many of them have shown symptoms of anæmia with marked dyspepsia and constipation. The following is the history of many: They had been in perfect health until puberty, which brought menstruation with difficulty, though this continued fairly regular for several years. After this, a month or two was skipped and so on, until in one case which came to me at twenty-seven years of age, the period had been entirely absent for two years. She had become in the meanwhile exceedingly fat. Many, on the other hand, declare themselves perfectly well, except that their waists are larger, and only seek treatment because they "are not like other women."

As to the causation of this condition, I consider it various. A certain number can, I think, from their history, be referred with certainty to a long standing venous congestion of the uterus, described above under the head of anteflexions. A long-continued obstruction to the arterial supply of an organ must, in time, produce atrophy of that organ and subsequently of those other organs which share in its nutrition. Where this occurs, then, in the ovaries, the degenerative process begins here and afterwards extends to the rest of the body, as evidenced by general fat. In certain other cases, a fairly clear history is given of long-continuing general anæmia, beginning before or at puberty. Menstruation has been irregular and scanty from the first, while the increase in fat has been neither so marked nor so rapid as in those in whom menstruation came on regularly at first. Here the functional inactivity of the generative organs was secondary to that of the general system.

Still another number of women give us much more difficulty in our search for causation. They state that puberty brought normal

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menstruation, that they have always felt strong and well, but that a few years ago menstruation began to be irregular, both in time and in quantity, and that lately they have begun to grow stout. Nearly all of these will say that they have been very fond of athletic sports—could do anything a boy could do—before puberty, and at that time they went to school, where they studied very hard and satisfied their ambition by standing high in their classes. The period, they generally say, became irregular while they were at boarding-school. And perhaps in this we may find the clue we are seeking.

Dr. Emmet, in the Preface to the first edition of his "Principles and Practice of Gynæcology," made a strong protest against over-stimulation of the mental faculties at a time when Nature is engaged in preparing for the proper ordering of the generative life of the woman. And although our knowledge on this subject will probably always remain empirical, many facts of daily experience testify to the truth of his warning.

Considering all these cases, therefore, of whatever origin, as exhibiting as their chief factor fatty degeneration of the ovaries more or less advanced—the forerunner of atrophy—I have directed my treatment towards the stimulation of these organs, with the hope of restoring their function and thereby arresting the degenerative process. A frequently-applied faradic current with one pole in the posterior *cul-de-sac*, first on one and afterwards on the other side of the cervix, the negative pole being placed on the abdomen over the site of the ovary on each side; applications of iodine and glycerine; hot water douches in the supine position; hot foot baths and hot flaxseed poultices for several nights preceding the date of the hoped-for flow; with proper attention to diet and to the general health; these have usually, in my hands, accomplished the result I sought. Naturally, the larger number of these patients are unmarried, their condition making them hesitate to take upon themselves the obligations of that state. Hence, I could only judge of their recovery from the sterile condition by the restored regularity of the menstrual flow. The permanency of this restoration is, however, very uncertain unless the patient marries at once or remains for a long time under monthly treatment after the flow becomes regular, because the temptation to forget or neglect the doctor's advice and to return to the old mode of life is too strong for most women after they have ceased medical treatment.

One typical case, however, that of a married woman, gave results both remarkable and complete. She was about twenty-two years

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of age, of fine physique, apparently in perfect general health, though grown somewhat stout within the year past. She took a great deal of outdoor exercise and only sought my advice because she wanted children.

Married three years, she had been growing more and more irregular, her last period at the time of her first visit to me being two months past and the only one in five months. She menstruated under treatment about three weeks subsequent to this visit, though scantily, and never missed another. She had a marked anteflexion and heavy uterus, though without any inflammatory condition in the pelvis. She came frequently to my office for the first two or three months; after which I saw her daily for a few days before and after each period for several months more, when she became pregnant, was delivered by me of a healthy child, which she nursed for a year with abundance of milk. There were three curious things in connection with her labor which may or may not have been connected with her former condition. The uterus refused to contract firmly after the secundines came away, remained large and flabby, with a tendency to dilate even after a large dose of ergot. The placenta came away complete, but on the fifth day, under the continued use of small doses of ergot, the uterus contracted violently and expelled an organized blood-clot as large as a hen's egg. After this the womb remained firmly contracted. The breasts, though large and firm, secreted no milk until the fifth day as well. And finally, the baby, though well-nourished and apparently at ease, had persistent hæmatemesis with frequent hiccough for more than a week after birth.

It will be noted that I have not referred to those cases of female sterility, whose main complication is *impotence,* because when the sterility is organic, it is of course referable to the first division of this paper; and when it is secondary to impotence in the relation of effect to cause, it properly belongs to the consideration of that disease. Nor have I touched upon those conditions which depend for existence upon some wholly extraneous cause and are without local lesion, as that which occurs in general anæmia as a part of the general systemic condition, and that other class which depends upon local disturbances of the sympathetic system, such as over-excitation at the time of copulation, with excessive flow of vaginal mucus and other conditions of this character. These suggest their own cure.

I have endeavored thus to cover the whole ground of all that properly belongs to my subject, and I shall be satisfied if I have

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said enough that is suggestive to call forth from others some new facts and principles upon this theme, of which our knowledge, when all is said and done, is but scanty and incomplete.

And yet no subject should possess a greater interest for us, nor provide a deeper study. For as sterility is the end of Nature's hopes, the absence of LIFE, so is FECUNDITY the foundation of all things; the promise of the FUTURE, the fulfilment of the PAST. Reproduction, indeed, is the unchanging theme of all Nature's songs, the groundwork of all her plans, the deepest of her mysteries, the most wondrous of her works. And to us the Baby is the type of her bounty. The Baby who precedes, the Baby who follows us; in whose tiny image we must all enter the portals of Life. The Baby in whom lives the germ of all that we are and what we may become—for we ourselves are "but children of a larger growth."

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