

OSTROM (H. I.)

VAGINAL  
HYSTERO-OÖPHORECTOMY,

FOR OTHER THAN MALIGNANT DISEASES OF THE  
UTERUS AND ADNEXA. \*

ABDOMINAL HYSTERECTOMY. †

BY

HOMER I. OSTROM, M.D.,

NEW YORK.

*Surgeon to the Metropolitan Hospital and to the Hahnemann Hospital;  
Professor of Abdominal Surgery in the Metropolitan Post-Graduate  
School of Medicine; Member of the American Institute  
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of the State of New York; of the Homœopathic  
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# VAGINAL HYSTERO-OÖPHORECTOMY, FOR OTHER THAN MALIGNANT DISEASES OF THE UTERUS AND ADNEXA.\*

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*Mr. President and Members of this Society:--*

IN the early days of gynæcology—and these are not so remote that they cannot be remembered by even the youngest among us—the proposition to remove the ovaries and uterus, when pathology could not be demonstrated in either organ, would have been looked upon with suspicion, and rejected as unjustifiable.

In those days vaginal rings, which in shape frequently resembled nothing in nature, and in application had regard to no mechanical law, held supreme control in the treatment of uterine displacements; held control in treatment, much better than they held the uterus in position. Ovar-

\* Read before the New York State Homœopathic Medical Society, September 26, 1894.

ian and tubal pathology, as differentiated by the present generation of thinkers and workers, was classified broadly with inflammation of the uterus, or with pelvic cellulitis. Vaginal hysterectomy was only dreamed of, and oöphorectomy projected as a surgical possibility.

But with our increasing knowledge of abdominal surgery, and the perfection of *technique* that necessarily goes hand in hand with such knowledge, the aspect of diseases of the uterus and the adnexa, and their treatment, have undergone radical changes. But while such changes have in many instances been in the direction of true conservatism, in still other instances the result has been in favor of bolder treatment, and to sanction operative measures that at first were reserved for the graver forms of disease.

My confidence in vaginal hysterectomy—I have never lost a case that could be attributed to the operation itself—and the failure to cure some cases of displaced uterus with any of the mechanical means yet suggested, or by means of the ingenious abdominal operations which have for their object making taut the uterine supports, or the vaginal plastic operations that seek to give support by acting from below ; this reasonable confidence on one side, and knowledge of repeated failures on the other, has, I say, led me for some time to recommend, and practice, removal of the uterus by way of the vagina for otherwise incurable displacements ; and the same security in the issue of gaining access to the abdomen through the vagina is fast forcing upon me the conclusion that vaginal oöphorectomy possesses claims for our consideration, which we, as scientific surgeons, must not disregard.

I still further extend the application of vaginal hysterectomy—it will, of course, be understood that I am not here speaking of pathological conditions, which have no part in the present discussion—to the treatment of remote nervous conditions, that are seated in the ovaries, and are associated with the process of ovulation.

Here the adnexa are principally at fault, but my belief is that the uterus should be included in the ovarian ablation (and this for reasons which I shall adduce later) and that we should not content ourselves in the treatment of these cases, with an abdominal oöphorectomy, as at present so generally advocated.

Still further, when for any other reason it is thought best to artificially induce the menopause, as in infantile uterus, or intractable dysmenorrhœa, I prefer to do a vaginal hyster-oöphorectomy, removing the uterus if the ovaries are the offending organs; but mark you, not of necessity the ovaries, when the uterus alone is the organ that requires amputation. The uterus has no function or usefulness apart from that which is suggested by the appendages; while on the other hand, the function and activity of the ovaries are most intimately associated with the psychical and physical well-being of the woman, and are probably but slightly, if at all, affected by the removal of the child-bearing organ.

I, therefore, in my treatment of conditions of the uterus and ovaries not represented by actual disease, which in my judgment call for the radical operation of removal, am actuated by the broad generalization, that when the uterus, from its position, or contracted abnormal relations must be taken out, other things being equal, the

ovaries should not be disturbed, but should be permitted to continue their function of ovulation, and possibly of contributing their special secretion, "spermine" to the organism; while in case the ovaries are to be removed, the uterus then by becoming a perfectly useless organ, should not be spared, but should be amputated with the ovaries. Without the ovaries the uterus serves no purpose, and as a foreign body, is governed by the laws that relate to such bodies, but the ovaries are so profoundly intimate with the entire system, that they should not be removed unless they are certainly the seat of disease, or the promoters of systematic disturbance. This spirit of true conservatism, which would never sacrifice the appendages while there is a possibility that other less radical treatment will suffice, finds sympathy in the quite recent suggestion to preserve even a small portion of the Fallopian tubes and ovaries if they can be shown to be healthy. Such practice could hardly apply to vaginal oöphorectomy, and especially to the operation for the class of cases we are now considering, but it is here mentioned as typical of the reverse picture to the bold and radical treatment I advocate; both of which are outgrowths of a better knowledge of physiology and pathology, and greater skill in abdominal surgery.

The class of uterine displacements which I consider legitimate for vaginal hysterectomy, includes the severer forms, and those that have proved most intractable to treatment. Generally they have passed through all the experiences of local and mechanical treatment, of minor and conservative operations, without avail. Still the uterus remains out of place, and life becomes un-

bearable because of the local and remote suffering attendant thereon. With the present slight mortality of vaginal hysterectomy, and the excellent results that we can record, I look upon this operation as not only justifiable, but as a procedure that should be recognized, in the treatment of the cases I have mentioned.

My method of operating is rapid, and so simple as to almost remove it from the category of major operations. As it differs in some particulars, so far as I am aware, from the *technique* of other surgeons, you will pardon a detailed description.

I consider that all my abdominal operations begin with the preparation of the patient. This, my assistants and nurses are trained to institute at least forty-eight hours before the time set for the operation.

Pulse and temperature are recorded, and examinations of the chest made. The urine is most carefully examined, and the quantity secreted in twenty-four hours, recorded. This record is submitted to me before the operation, and aids me in deciding the anæsthetic to be administered. All the eliminating organs are functionally assisted. The kidneys are washed out with Poland water. The liver is assisted by small doses of *merc. dul.*, and the intestines with some saline cathartic, or preferably with compound liquorice powder. The action of the skin, also, is promoted by warm baths. To prevent intestinal fermentation, the patient is placed on an exclusively animal diet.

Following this scheme of ante-operative treatment, I think I have, after abdominal operations, less trouble from deficient kidney action—and I look upon uric acid poisoning as one of the principal renal complications incident to administer-

ing ether, or of opening the abdomen—and less gastric and intestinal disturbance, than I find recorded by many other abdominal surgeons.

Vaginal antiseptis, in the form of bichloride douches, is at the same time begun. After etherization, and before the patient is removed to the operating room, the vagina is thoroughly cleansed with soap, bicarbonate of soda and bichloride of mercury, and, as a final step, packed with iodoform gauze. If the os is not markedly degenerated, I consider curettage quite unnecessary, the cleansing being sufficient to insure asepsis.

Unless the vulva and vagina are much contracted, and usually the cases that justify this operation are accompanied with a torn perineum and enlarged vagina, I dispense with the use of a speculum, finding the instrument unnecessary and cumbersome during the operation. The vagina will open itself, if the patient's thighs are not too strongly flexed upon the abdomen, and this will be aided if an assistant, standing on either side, draws apart the labia with his hands. To gain room, I have sometimes been obliged to destroy the perineum, but this can be restored as a final step of the operation, and in no respect complicates or retards recovery.

The uterus being well dislocated by means of a strong, double tenaculum held in my left hand, with a straight bladed knife I separate the vaginal covering of the cervix down to cervical tissue. I then lay the knife aside, and with a pair of short, sharp pointed curved scissors, clip the uterus out of the broad ligament, and do not enter the peritoneal cavity until I open the posterior *cul de sac*, and separate the bladder from its uterine attachments.

If the clipping is done close to the uterus, no ligatures will be required on the uterine arteries, for up to this point there need be no hemorrhage to speak of, save, possibly, from the posterior vaginal artery, and that can be controlled by a running catgut suture, holding together the parietal peritoneum, and vaginal wall.

My dissection has now reached the ovarian arteries and the Fallopian tubes as they lie between the folds of the broad ligaments, and the uterus hangs suspended in the pelvis by these structures.

While it is perfectly possible to remove the entire uterus by continuing this same separation of peritoneal covering and vascular network, making the operation practically a bloodless one, I prefer, at this stage, to lay aside the scissors and to ligate both pedicles, for such we may now regard the parts that hold the uterus, with strong catgut encircling ligatures, leaving one end of each ligature hanging from the vagina. The uterus is then cut out with scissors.

The next step will illustrate my reason for tying the ovarian arteries and Fallopian tubes, and for not continuing the process of dissection with which I began the operation.

After assuring myself that there is no hernia of pelvic viscera in the vagina, I draw together and tie the two ligatures already placed, and by so doing approximate and unite the severed broad ligaments, each fragment of which contains what remains of its Fallopian tube, the ovary and ovarian artery.

It will thus be seen that at one step, without the loss of time, and without the difficulties attendant upon picking up and sewing together the perito-

neum, I am able to close the pelvic outlet, and to build a strong resisting wall against pressure from above, and prolapsus of the bladder.

You will here, very naturally, question me about drainage, and I will answer that I am becoming more and more skeptical concerning its usefulness. Unless there is something to remove from the abdomen that will prove injurious, or that the peritoneum cannot digest, drainage is not called for, and its use, in so far as it is effectual, will retard recovery.

I say in so far as drainage is effectual, for it is probable that no method of draining the abdomen, however well carried out, continues for any length of time to drain more than a very limited area. For it has been shown, experimentally, that adhesive inflammation very soon closes about the abdominal end of the drainage tube, and thus shuts off the general cavity.

If, however, I desire to establish drainage after vaginal hysterectomy, I introduce a roll of iodoform gauze *behind* the bridge of tissue which I have built by uniting the broad ligaments. This can easily be accomplished, for the posterior *cul de sac* being larger, lower, and more relaxed after the uterus is removed, than the anterior one, will readily admit of distension. On the contrary, the peritoneum here will fall together without delay, if not held apart.

Whether I use drainage or not, I pack the vagina loosely with iodoform gauze, which I remove easily and without giving the patient any pain, with the assistance of peroxide of hydrogen. This I inject in full strength, at the side of the packing, and the latter is quickly boiled out of place.

The manipulation differs but slightly when the adnexa are removed with the uterus. The ligatures are placed outside of the ovaries, nearer the pelvic reflection of the peritoneum of the broad ligament.

The convalescence from this operation is most satisfactory. No pyrexia, more than is due to mechanical causes, has been noted. The absence of suffering is a noteworthy feature; and after the first twelve hours, one not familiar with the clinical history of these cases, would be inclined to doubt that a severe operation had been so recently performed.

It goes without saying that the uterine displacement is removed with the operation, and the patients who have not for years been able to stand without intense suffering, who have been incapable of any active duties, are usually allowed to return to their homes, cured, in less than four weeks.

## ABDOMINAL HYSTERECTOMY.\*

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*Mr. President and Members of this Society:*

The honor your President conferred upon me when he invited me to read a paper before you on "Abdominal Hysterectomy," and your courtesies in listening to me, I fully appreciate, but I assure you that I feel most keenly my responsibility in endeavoring to present for your consideration in the short time allowed a single speaker, so broad a subject, and one of such vital importance to us as gynecologists.

No branch of the art and science of surgery has made such rapid strides towards perfection in the past decade as that of abdominal surgery,

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and in no department have we accomplished seemingly greater things than in that of removing, through the abdomen, the female reproductive organs.

And just because of the magnitude of the subject, not because I would willingly omit a classical survey of the steps by which we have reached our present standing place, I must limit my remarks to certain practical points, which I trust will seem worthy for your consideration, and will elicit from you a discussion embodying your own experience, which cannot fail to be of great value.

At the very outset, however, I must crave your indulgence for an apparent egotism on my part for speaking from my personal experience, and for advancing my own views and practice, to the neglect of those great men who have made our present work possible, and whose names will ever stand as synonyms for erudition, courage, and love of humanity. In our busy life, while we may silently award all honor to our masters, we do not publicly have more than enough time to add our shoulder thrust to the problems that we undertake to solve.

While we tend to classify and differentiate diseases, increasing knowledge inclines more and more to obliterate the dividing lines that in its infancy—and we are scarcely beyond that period now—gynæcology drew between its various manipulations. Thus, for example, no hard and fast line can be drawn between abdominal and vaginal hysterectomy, save in the matter of technique, and even here, a more critical examination will show the occasional advantages of a combined operation—thus making it impossible,

without assuming an arbitrary division, to discuss one method of removing the uterus without mentioning the other.

Simply stated, abdominal hysterectomy is at present reserved for those diseases of the uterus that cause such an increase in size as to preclude the possibility of effecting its partial or complete removal through the natural outlet of the pelvis, the vagina. You will perceive that the suggestion is here made, that in case the factor of size does not complicate the procedure, the operation of election would be a vaginal hysterectomy, and such an inference, I believe to be in conformity with the recent developments of surgery. I think we cannot doubt that vaginal hysterectomy is the safer, and less severe operation. But as corroborative of the close relation between these two methods of accomplishing the same object, I have concluded, after beginning the one, on the other operation—I do not recall that I have ever commenced to remove the uterus with the deliberate intention of making an abdomino-vaginal hysterectomy—that a combined manipulation offered the best chances for the patient, and though this is a secondary consideration, presented the least difficulties for the surgeon, and have finished the operation by means of both abdominal and vaginal openings. The necessity is not one, however, to be lightly decided upon, for I believe the gravity of this manipulation, and the mortality attending it, to be greater than can be proven of either one of the single operations.

I am glad to say that the necessity for the combined operation has in my experience been rare. I think it will be less frequent as I learn to differentiate more carefully, but I am inclined to be-

lieve that occasions will be found in which the factors of time and visceral manipulation will figure so largely in our equation of cause and effect, that a hysterectomy begun as abdominal, will be completed through the vagina, by which increased facility of reaching the deeper vascular trunks is obtained, as in a very large, dense myoma, so firmly packed in the pelvis that it cannot be raised sufficiently, either to apply the temporary clamps, or to secure the uterine arteries; or again, in a case in which malignancy is not suspected, or is thought to be confined to the uterus until the vaginal vault is opened. Here, if it is thought best to proceed, it may be necessary to enter from above, for the facility thus obtained of reaching intelligently every part of the abdomen and pelvis with both fingers and instruments, may render it possible to remove all diseased structures, and convert an otherwise palliative operation into one that is radical and curative. - But I am of the opinion that cancer of the uterus that has invaded extra uterine tissue to such an extent as to render its ablation through the vagina impossible, does not fall within the limits of justifiable operations.

The practical points touching abdominal hysterectomy which now interest us, are :

*First.* Shall the entire uterus be removed, together with the disease that calls for the operation, and if not, what shall be the disposition of the portion that remains (the uterine pedicle) extra-abdominal, or intra-abdominal?

*Second.* Shall the entire uterus be removed, and if so, what shall be done with the thus opened vaginal vault?

*Third.* Shall the adnexa be removed with the uterus?

The comparatively minor details of technique will always remain open for discussion, and change, and will doubtless admit of many improvements, but I apprehend that the present vital questions relating to abdominal hysterectomy, are the three which I have raised, and to the consideration of those I will now ask your indulgent attention.

The first question, shall the entire uterus be removed, together with the disease which calls for the operation, must be decided wholly upon the nature of that disease. This, as we know, excluding the malignant and semi-malignant diseases, carcinomas and sarcomas, the radical removal of which admits of no doubt, is most frequently a tumor, partaking of the characteristics of uterine tissue, and invading more or less, the walls of the uterus. In the pedunculated form of fibroids, or the sub-peritoneal variety, the neoplasms are, as the names imply, superficial, but, applying here our knowledge of the development of pathological new formations, I think we have reason to look with suspicion upon the sanity of an entire organ, one part of which produces such a wholly incongruous and useless mass as a uterine myoma. My practice, therefore—unless it can be clearly established that the uterus as a whole is healthy, and such a diagnosis is attended with the utmost difficulty, indeed is at times quite impossible—is to disregard the question of future maternity, and looking to the welfare of the patient, to remove the entire uterus, or all of that portion that lies above the internal os. I have little patience with the spirit of modern conservatism that seeks to produce cosmetic effects, or to preserve not actively pathological structures, at the expense of thoroughness. Such work may indeed be classed

among operations, but surely it does not come under the head of the "Science and Art of Surgery." Operative surgery will ever be looked upon as the opprobrium of the healing art, but when we, as conscientious men, reach the conclusion that an organ or part must be removed, let us in the name of humanity, and of our art, do the work thoroughly, and not as children, playing with the noblest of professions.

My early hysterectomies were performed in accordance with the then prevalent practice of extra abdominal fixation of the pedicle, and hence the line of amputation of the uterus was decided by the degree of possible tension of the portion that remained. It was not at all unusual for that line to pass through small intra-mural tumors, and presumably many such remained unnoticed below the constriction, ready to develop, requiring future operations for their removal. For four years I have been free from the surgical sin of that method of operating, and in consequence have not lost a single abdominal hysterectomy.

It having been decided to remove the tumor and the uterus, that is, the usual tumor bearing portion, which lies above the cervix, it is, I think, a matter of little importance, the cervix being healthy, whether we amputate at the inner os or at the vault of the vagina. But one consideration will be of positive weight. If we decide to leave the adnexa, it will be well, other things being equal, to leave the uterine cervix also, for the reason, that we thus gain a little support for the ovaries and tubes; we do not so completely disturb their blood supply; and the manipulation is not so prolonged or extensive. But of

this, and the question of removing the adnexa, later.

The line of amputation, or indeed whether the uterus shall be amputated at all, cannot be decided until the abdomen is opened. To accomplish this, the first step, I prefer, and make a free opening through the linea alba. I consider it of great advantage not to mutilate the rectus muscles in going through the abdominal walls, not because healing is necessarily thereby delayed, though if the muscles are much torn the wound is apt to suppurate and mural abscesses develop, but principally because there is liable to be troublesome bleeding from the torn or cut muscles. The opening through the peritoneum does not correspond to the muscular incision, and hence, when the walls are brought together in the final step, unnecessary violence is done to the peritoneum—a very important matter in all abdominal surgery—and sometimes considerable searching is required to bring it into place. If the abdominal wall is opened down to the muscular sheath with one long deep incision, and then the tissues cut between catch forceps, muscular tissue need not be exposed at all, and the tumor is reached quickly and safely. Let me again express my confidence in the long incision. Its length does not complicate the operation, and the facility for work that it gives, compensates for the additional mutilation, and the resulting wound is more likely to continue in the median line, than when enlarged after the tumor is brought into view. I always regard the latter necessity as evidence of a miscalculation between the size of the tumor, and the opening through which I expect to accomplish its removal.

Having decided to remove the uterus, I plunge a broad-flanged corkscrew (which I have had made for the purpose) into its presenting portion, and, with a rocking motion, drag the entire mass outside of the abdomen. Uterus and adnexa will thus be brought into view, and the future steps of the operation be determined without hesitation.

If the ovaries and tubes are to be removed with the uterus, the latter organ, being entirely controlled by means of the cork screw, is drawn to one side, usually first towards the patient's right, while I proceed to ligate with a rather blunt, handle-needle, using for the purpose, preferably, catgut, the ovarian artery, outside of the ovary. Though it consumes a little more time to ligate the uterine portion of the artery, I think the increased space for future manipulation afforded by the absence of clamping forceps more than compensates for the slight loss. I therefore usually ligate both ends of the artery.

With blunt scissors I then divide the broad ligament outside of the ovary, and continue the separation down to the uterine artery. This is then tied with double ligatures, after the method followed in the ovarian trunk, and cut between the ligatures.

My next step—and this I consider an important one both in order of sequence and in ultimate results—is to secure coaptation of the peritoneal layers of the broad ligament. For this purpose I use catgut and a curved Hagadorn needle. The advantages of so closing the peritoneum deserve more than a passing notice.

In the *first* place, troublesome oozing is controlled; in the *second* place, if we leave this step until the conclusion of the operation, the peri-

toneum will have retracted and will be difficult to pick up; and in the *third* place, it is in accordance with the broad principle which I think should underlie and govern all abdominal surgery, *viz.*: to preserve the continuity of the peritoneum.

This great serous membrane, with its lymphatic system, is, to an extent which we have been slow to recognize, possessed of remarkable powers of digestion; and I am led to believe that, as long as it remains intact, few if any agents finding their way into the abdominal cavity can enter the circulation in such form as to prove hazardous to life. For let us remember that before doing so they must pass through the chemical laboratory of the lymphatic glands, which are present in such large numbers in the peritoneum.

The case is quite different when this protecting membrane is no longer a closed sack, and its supporting cellular tissue is uncovered and exposed. Absorption then takes place directly into the blood circulation, without the antidoting or digesting action of the lymphatic glands. Our greatest successes in abdominal surgery I believe will be achieved by following the lead of physiology; by calling to our aid the friendship, not the enmity, of the peritoneum.

I trust you will pardon this digression; my object has been to emphasize what I believe to be an important factor in the success of all operations that open the abdominal cavity, and hence destroy the continuity of the peritoneum.

But to return to the operative technique. By now drawing the tumor and uterus over to the side that has been liberated by cutting the

broad ligament, the remaining ovary and Fallopian tube are dealt with as already described. The entire mass, consisting of tumor, uterus, and adnexa, can then be lifted out of the pelvis.

The advantage is now apparent of packing the vagina, which is the final step of the vaginal toilet that precedes all my abdominal operations, and is attended to by an assistant before the patient is brought to the operating room. By this packing, the pelvic organs are held up and forced more prominently into view.

But here let me note a disadvantage of this vaginal packing. If placed well, as it should be, it, by pressure, to a certain extent, controls the circulation of the cervix and upper part of the vagina, and hence it is generally wise to have it removed before closing the abdomen.

The line of amputating the uterus will now be determined. If it is thought best to leave the cervix, that is, amputate at the internal os, I throw a temporary rope clamp around the pedicle below the line of amputation, taking care to press the bladder well down in front, below the rope. If the bladder is found to grow high on the uterus, an incision of the peritoneum at the line of reflection will allow the clamp to be placed without fear of injuring that viscus.

The method selected of covering the pedicle, of rendering it extra-peritoneal, will decide the shape given the cervix at the time of removing the uterus. If it is wished to excavate the pedicle, closing its sides with buried sutures, and covering the whole with peritoneum, this may be accomplished by giving a wedge shape to the portion that is removed.

For myself, I see no advantage in the additional

manipulation that this method involves, and look upon the sewing up of the excavation in the pedicle as a waste of time in an operation where every minute saved is of value to a successful issue.

I regard the uterine pedicle much in the light of the stump that remains after amputation of a limb, and treat it according to the method of a circular amputation. A cuff is made by incising the peritoneum above the line of amputation. This cuff is stripped back, and the uterus cut off. If open vessels are seen, they are ligated with catgut.

Unless some disease is present in the cervical canal, I do not use the cautery; but when necessary, I prefer the Paquiline cautery, which I pass through the entire length of the canal, with the double object of disinfecting, and of keeping the passage open for drainage, outside of the peritoneal covering.

I bring the peritoneum together with a double row of catgut sutures, observing great care to invert its edges, so that the serous surfaces are everywhere in contact, and the underlying uterine tissue is in no spot uncovered.

There will now arise the question of drainage, and this is among the most difficult ones to pass upon in abdominal surgery.

As one of the chief advantages of the intra-abdominal treatment of the pedicle is to entirely close the abdominal wound, of course, unless under exceptional conditions requiring combined drainage, the *operative* opening should be excluded as a possible site for establishing drainage. There therefore remains the vagina, which appeals to us as the mechanical and anatomical drain for the pelvis, and this canal I make use of

when I desire to watch more closely the processes that are going on at the seat of operation.

My method of establishing vaginal drainage in abdominal hysterectomy, is to force a pair of long forceps through the posterior *cul-de-sac* by way of the vagina, into the pelvis, being guided in its course by my finger placed in the abdominal cavity. A roll of iodoform gauze, varying in thickness with the degree of drainage it is desired to establish, is caught in the jaws of the forceps and drawn into the vagina, enough of the *cut* end of the roll remaining in the pelvis to loosely occupy the cavity behind the pedicle. The vagina is then lightly packed with strips of iodoform gauze. I formerly used tubes for vaginal drainage, the cross rubber tube, and various forms of glass tubes, but have abandoned all such instruments as untrustworthy and ineffectual, in favor of iodoform gauze. This material remains perfectly aseptic, is non-irritating, drains well and can be removed and replaced at pleasure.

As I have already said, it may become a difficult matter to decide when to drain in hysterectomy, and when not, for while I hold that drainage has contributed to the success of many hysterectomies, conversely we cannot deny that it is not called for in every case, and that in a certain proportion of the cases in which drainage has been carried out, the results have not been satisfactory, even death being directly traceable to its use.

Formerly, I relied upon drainage in all classes of abdominal operations, much more than in my present practice. The change has been brought about largely, I apprehend, by my increased con-

fidence in the physiology of the peritoneum ; in my willingness to rely upon its power to digest, and to render inert, deleterious substances with which it is brought in contact ; but also, and necessarily, because of greater manipulative skill and certainty of the exclusion of septic germs, or the pabulum upon which they thrive.

We should to-day be able to dismiss the factor of septic poisoning from abdominal surgery, for unless it is already present at the time of operating, we must, before the tribunal of our inner selves, acknowledge that we, the operators, are responsible for its presence. The fear that possibly something post-operative may happen, or that we have neglected to avail ourselves of one of the means of achieving success, has doubtless done much to perpetuate the routine practice of draining after laparotomies ; but save in case of pronounced inflammation, when I think keeping the peritoneum dry, mechanically assists in relieving the surcharged capillaries, and, by removing excess of fluid, prevents a paralysis of the lymphatics which might follow forced activity ; or in case of unusual capillary oozing, where undoubtedly by maintaining dryness of the peritoneum, contraction of the small vessels is favored, or when pus-pockets exist, and it has been impossible to perform the toilet of the peritoneum to the entire satisfaction of aseptic requirements, I do not now use drainage in abdominal surgery. Under the latter conditions, my object is not so much to drain the entire peritoneum as it is to shut off the infected cavity. With this in view, I pack the pelvis with iodoform gauze, taking advantage of nature's kindly disposition to form adhesive inflammation, as a protective envelope.

Now, as to closing the abdominal wound. I think I have used every method that has been proposed, and am not free from the charge of having devised others for myself, but I believe I get the best results from the simple method of a single row of silkworm gut sutures, introduced through the entire thickness of the abdominal wound, by means of a slender, slightly curved handle-needle.

I am, however, in this step, again fastidious concerning my treatment of the peritoneum. The needle is made to penetrate this membrane further from its cut edge than the corresponding penetration of the skin. You will readily perceive the object of this, for when all the sutures are in place, and before they are tied, by drawing them *en masse*, away from the underlying omentum, the serous *surfaces* of the peritoneum are brought together and held in contact; thus applying the rule of intestinal surgery which insures adhesion between structures invested with peritoneum. Only in very thick, fat abdominal walls do I consider it necessary to sew the peritoneum separately.

I have thus far said nothing about irrigation, but an account of abdominal hysterectomy would be incomplete without such mention.

The less manipulation to which we subject the peritoneum, and the intestinal canal, the better will be the chances for the patient; hence the necessity for washing out the abdominal cavity must be regarded as unfortunate, for with it comes a greater or less degree of the very handling we wish to avoid. When, however, suspected fluid or hemorrhage call for irrigation, I use a sterilized salt solution, which I pour into the

cavity, from jars ; the force and quantity of the fluid can thus be regulated at will. But let me mention one very important advantage from flushing the abdominal cavity with a sterilized saline solution. I refer to cases of severe hemorrhage and shock, incident thereto. This fluid corresponds in specific gravity very closely to the normal blood-serum, and when absorbed into the circulation, is capable of taking its place, not only as a promotor of blood formation, but as a mechanical substitute to stimulate the heart to action. I have on several occasions flushed the abdomen with only this in view, and think that by so doing, I have saved my patient's life.

As a natural outcome of such experiences, I have been led to think that cases requiring irrigation, are benefited by favoring a *continued* absorption of the salt solution; I am therefore not careful to dry the abdomen before closing the wound, but am in the habit of leaving fluid in its cavity. Not only is this absorbed, but its presence permits the abdominal viscera to move freely on each other, and possibly prevents adhesions between their peritoneal surfaces, and intestinal irritation.

This brief description will serve to outline the essential features of my method of performing abdominal hysterectomy. The principal variations that I have not touched upon, will relate to the treatment of the vaginal opening in case the entire uterus is removed; and thus my *second* question is reached.

I very strongly incline to the latter operation. *First*, because of the probability that the cervix and cervical canal are not free from disease, the latter especially being prone to cell degeneration. *Second*. Because the operation is more quickly

performed, and is better surgery, removing as it does, a part that is not only useless, but that may become the seat of disease.

The frequently urged objection against removing the cervical pedicle, that the adnexa and floor of the pelvis are thereby deprived of a certain support. I do not think is well founded. The cicatricial tissue that forms after removing the cervix, and that constitutes the roof of the vagina, is quite as strong, and able to resist pressure from above, as the portion of uterine tissue that remains after the higher amputation. Moreover, should that nodule become diseased, or hypertrophied, which actually occurred in one of my own cases, requiring a second operation, the increased weight will cause prolapsus of the vagina, with all its troublesome features.

When I remove the entire uterus, the steps are the same as those already described, until the application of the temporary clamp. If the uterine and ovarian arteries have been well secured, and the peritoneal layers of the broad ligament brought together, this will be unnecessary.

After incising the peritoneal covering of the uterus, posteriorly and anteriorly, at a point corresponding to the reflection of the bladder, and terminating latterly at the ligation of the uterine arteries, the cervix can, by means of the finger, or with blunt curved scizzors, be stripped down to the vagina. This is then opened—and here I prefer the scizzors, for the vault of the vagina is very tough—and the uterus clipped away from its attachments. One will at first be surprised to see how quickly the peritoneum falls together, and closes the opening thus formed.

As there is usually more or less oozing from

the cut vagina and peritoneum, I insert a roll of iodoform gauze until the discharge ceases, which is generally in about twenty-four hours.

After removing the drainage, and this I accomplish by injecting peroxide of hydrogen, the vagina is cleansed frequently with boracic acid solution, and later with bichloride solution. I have no fear of using the vaginal douche thoroughly, because the stopping of discharge is to me an indication that the abdominal cavity is closed by adhesive inflammation.

From the operation I have described, and which I now make my model in all cases of abdominal hysterectomy, the recoveries are quite as rapid and satisfactory as from an ordinary ovariectomy. Theoretically, they cannot be otherwise. All disease is removed, and no intra pelvic tissue remains to degenerate, or to pass through the various stages towards healing. Of course complications will arise which influence convalescence, and the prognosis, but ordinarily my abdominal hysterectomies are dismissed from my care within four weeks. Quite different this from the old mortality, and a painful and fœtid convalescence of eight to ten weeks, that follows the extra abdominal method of treating the pedicle.

This paper has already exceeded the time-limit I had set for myself, and I fear the justifiable limits of your patience, but my *third* question, shall the adnexa, when not the seat of disease, be removed together with the uterus, remains for discussion.

Until we know the exact function which the ovaries and Fallopian tubes perform in the female economy, our answer cannot be rationally given, and the deeper we penetrate the sense world, and

the further we investigate human physiology the broader becomes our horizon, the more do we perceive the close functional intra-relation between all the organs of the body.

We formerly looked upon the ovaries as essentially reproductive organs, and considered that their function began and ended with the evolution and involution of the child bearing period in females. Recent investigations, and the results of clinical experience, oblige us to reverse this opinion, for while beyond doubt the primary object and function of the uterine adnexa is reproduction, the physiological and psychological phenomena which follow their removal, cannot be accounted for upon the theory that *only* the possibility of child bearing is withdrawn from the system, when the appendages are removed.

There is here opened a vast field for speculation, but speculation is not what we want, we must have facts, and until we acquire them we must give each case the benefit of a doubt. Apart from the mental effect that we can readily conceive might follow the consciousness of reproductive incapacity, recent investigations tend to show that the ovaries are in the strictest sense glands, secreting, differentiating, and contributing their quota to the general well-being of the organism. This secretion has been named "spermine," and is found in varying quantities in the thyroid gland, in the thymus, the ovaries, the testicles, and in pancreatic tissue.

Experiments have thus far been conducted mainly with "spermine phosphate," derived from the testicle of the sheep. The substance injected hypodermically, seems to act as a pow-

erful intra-organic restorative of the oxidizing properties of the blood, shown most markedly in its power to resuscitate after chloroform poisoning.

The results obtained from experiments with "spermine" derived from the ovaries of rabbits, though more recent and less extensive, are none the less suggestive of the important part this element plays in the female economy. In all instances renewed vigor followed its use.

Now, what are we to conclude from this fragment of knowledge? I think we may say, without hesitation, that we are investigating a physiological action that promises to have a most important bearing on operations which consider the removal of the ovaries. For while other glands are shown to secrete "spermine," and may possibly, because of the compensating action that exists throughout nature, be able to supply in time the loss of this "oxidizing restorative," which must follow removal of the ovaries, so exquisite have we found to be the balance between the several parts of the reproductive system, that we have reason to believe that an element bearing so important a relation to nutrition as "spermine," cannot be suddenly and violently withdrawn without disturbing the nice adjustment that exists throughout the organism. May we not therefore suspect, that many of the symptoms, psychical and physical, which attend natural and induced change of life, are in a measure the result of the withdrawal from the system of the secretion of the ovaries. In the induced menopause, where both ovaries are removed, the supply is suddenly cut off, and every gynæcologist can cite instances of the tornado, of

the nervous explosion, with which the system frequently responds to this violent act.

I do not wish to be understood as favoring the opinion that all the disturbances that follow double oöphorectomy, or even the greater part of them, are dependent upon the reduction of the quantity of "spermine" in the system. I merely wish to suggest that this may be a contributing cause, one of the many factors that go to make the picture of what we recognize as the change of life, the folding up of the reproductive system.

We now perhaps, in view of the possibly complex function of the ovaries which recent study seems to favor, have correspondingly complex problems to meet before deciding to remove the uterine adnexa, when the operation is for ablation of the uterus. Of course it will be understood that I speak of healthy appendages.

My custom has heretofore been to perform the complete operation, actuated as I always am by the desire to remove all organs that may in any measure sympathize with the primary disease, but I must confess that since I have become familiar with the line of investigation that I have touched upon concerning the glandular action of the ovaries, I hesitate before including the adnexa in the uterine amputation.

I have never seen any unfavorable results from the continuance of ovulation after removal of the uterus; indeed, after one or two menstrual crises, immediately following hysterectomy, the system seems in no way to be affected by the operation. There appears, therefore, to be no adequate reason for removing the otherwise healthy ovaries in hysterectomy.

A final thought suggests itself in this connec-

tion: What would be the effect of combating the morbid symptoms that follow removal of the ovaries, with injections of "spermine phosphate?" Why have we not in this treatment a legitimate continuation and extension of preventative medicine, or more broadly, of the art of healing?



