OPERATIVE TECHNIQUE IN VAGINAL HYSTERECTOMY.[1]

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(With thirteen illustrations.)

HYSTERECTOMY and ablation of the adnexa by the vagina is indicated in cases of cancer of the uterus, uterine tumors, diseased

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conditions of the uterine appendages, periuterine suppurations and suppuration about the appendages, and for periuterine tumors. The procedure may be modified in several particulars, thus:

1. If the uterus is slightly or not at all adherent, if it is small, we have recourse to a simple hysterectomy, without morcellation or preliminary section. Hemorrhage from the ligaments can be controlled progressively from below upward, if the uterus cannot be inverted, or from above downward after inverting the organ, behind or in front.

2. If the uterus is large, slightly or not at all adherent, hysterectomy can be done by antero-posterior section.

3. If the uterus is completely adherent or very large, "morcellement" of the organ should be done.

Pre-operative measures.—It is wise, as before any grave operative procedure, to examine carefully and at different times the urinary secretion. Should it contain albumin or sugar the prognosis will always be serious, and the surgeon, unless from absolute necessity, should put off the operation and turn his attention to the renal disease.

Operation having been decided upon, vaginal injections of a weak bichloride solution should be prescribed three or four times a day for several days. A carbonate-of-soda bath should be given the night before, the vulva shaved, and the vagina scrubbed with green soap. A purgative should be given. On the morning of the operation the bowels should be moved by a simple enema.

The patient being placed upon the table, the field of operation should be scrubbed with a brush and green soap—pubes, buttocks, perineum, vulva, and vagina—then washed with sterilized water, solution of bichloride 1:1000, alcohol, ether, and lastly with fresh sterilized water. I am in the habit of enveloping the legs of patients up to the middle of the thigh in long stockings padded on the inside, and these stockings are left on for three days. During the operation the parts surrounding the field of operation are kept covered with aseptic towels.

I do all vaginal hysterectomies with the patient in the dorso-sacral position, the legs held well up over the abdomen by a holder. My assistants are thus never occupied with the legs of the patient, and do not, during the operation, soil their hands by replacing the patient in position.

Instruments.—The armamentarium is not complicated. By preference I make use of three vaginal retractors—the posterior retractor of Auvard and the lateral retractors of Engelmann. They are very short, and present in their length a concavity which adapts itself very well to the walls of the vagina; the right angle which they form with the handle presents a concavity which moulds it to the labia majora. The handle itself at its anterior third is in the shape of a ring, which, when the thumb is passed through it, permits the instrument

to be held very firmly in position. I rarely use the retractors of Péan (Figs. 1, 2, 3, 4). A pair of strong scissors curved on the flat is needed, also four to six forceps for traction, three very strong (Fig. 5); a long three-toothed dissection forceps; eight to ten

Fig. 1.

Fig. 2.

medium-sized forceps, a sound (Fig. 6), a Paquelin cautery, and, in case of accident, instruments for repairing the bladder and rectum I have had made forceps of different patterns, eighteen and

Fig. 3.

a half, twenty, and twenty-three centimetres in length (Fig. 7); The first are used in securing the uterine arteries, the second for securing the lower part of the broad ligaments, and the third for the upper part. They all have the same jaws (four centimetres); all the handles unite at the vulva without incommoding the patient. If the forceps all had the same length the rings on the handles would be found at different heights and

would take up more room. All these instruments should be most thoroughly sterilized. During the operation there should be at hand aseptic tampons to stop hemorrhage and for sponging. The dressing of the wound should be done with aseptic gauze. I powder the raw surfaces with iodoform previous to applying the dressings.

Simple Hysterectomy, Uterus Movable and not Large.—1. Having placed the vaginal retractors in position, each lip of the cervix is seized with a tenaculum forceps and the uterus is pulled down as far as possible. Grasping the tenacula in the

Fig. 4.

left hand, a circular incision is made upon the vaginal portion of the cervix by the thermocautery held in the right hand. Hemorrhage is thus avoided and there is great rapidity of execution. Further on we will see the advantages of this. This circular incision is carried only beneath the connective tissue of the cervix.

2. Laying aside the cautery, the cervix is detached from the bladder in front and the rectum behind by the finger. In this way the peritoneal cul-de-sac is reached, and the operation is continued either with the finger or the scissors.

Fig. 5.

3. Two small, medium-sized forceps then secure the uterine arteries. The forceps being locked, the cervix is freed by two cuts of the scissors. During this time, and up to the end of the operation, the tenacula are in the hands of an assistant, who makes strong traction with them.

When the cervix is freed, if the uterus be small, it can be inverted in front or behind. It is sufficient for this to introduce two fingers into the opposite cul-de-sac and push the body of the uterus toward the cervix. It is then seized with a tenaculum and drawn outside, making with the cervix a very acute angle.

4. The fundus draws with it the broad ligaments and the appendages. Two medium-sized forceps are placed upon each side, and an incision is then made with the scissors in the long axis of the uterus. Following this, as the uterus will have been inverted in front or behind, the forceps will be placed from above downward or from below upward on the broad ligaments. The hysterectomy will be completed by the section of the ligaments. We will then have placed three medium-sized forceps on the right, three on the left, and two above on the ligaments and appendages.

5. The tubes and ovaries can then be found with the fingers;

FIG. 6.

they can be freed, if there are any adhesions, and drawn outside. The two forceps above can be easily replaced by a strong medium-sized forceps, which will hold the ligament at its base and permit the removal of the appendages. Then, after a thorough washing with sterilized water and drying with a sterilized pad, I put on the dressings without paying any further atten-

FIG. 7.

tion to the peritoneum or the old method of vagino-peritoneal sutures.

Dressings.—A pledget of sterilized gauze is placed in the wound so as to cover the jaws of the forceps. Other gauze serves to protect the vaginal walls. A thick layer of padding is placed on the external portion of the instruments, and all is held in place by a strongly tied knot. A self-retaining catheter is placed in the urethra, the patient is put to bed, and the legs kept separated and raised up by means of pillows and bandages.

The forceps are removed forty-eight hours later very carefully, the gauze dressings in the vagina are removed with equal care; the self-retaining catheter is left in place. On the third day a purgative is given, the last piece of gauze is removed. Aseptic

vaginal douches are prescribed every two or three days. My patients, as a general thing, get up in five or six days, and usually the vaginal wound is healed in about twenty-four days.

Technical details. Thermocautery.—The incision through the vaginal mucous membrane by the thermocautery knife offers not only the advantage of avoiding hemorrhage at the time of operation, but it assures also—more than an ordinary knife can do—continuous drainage afterward. In short, union of the lips of the wound by first intention being impossible, the opening remains patent and permits drainage of fluids. After the use of the knife alone one often has to regret peritonitis, due to the retention of materials brought about by union of the lips of the wound and the early closure of the vagina. Even if, after the employment of the knife, drainage could be assured, pelvo-vaginal dressings are required for several days, all of which are rendered unnecessary by this method of procedure.

Cancer of the cervix.—It is best, in case of cancer of the cervix, to curette the diseased tissue and afterward grasp it firmly with tenacula. In place of using two tenacula I employ five or

FIG. 8

six, in order to distribute the violence of traction and to avoid lacerating the tissues.

First incision.—I have said that the first incision should keep on the vaginal cervix, for there is nothing easier than penetrating the bladder or the rectum if one deviates from the vaginal portion.

Opening the cul-de-sac.—Detaching the cervix and opening the cul-de-sac is done with the finger. Before this it is often necessary to make use of the scissors. Here also it is necessary to keep as close as possible to the uterus, and not to open the peritoneum against the bladder or the rectum. The immediate inconvenience will be but little, but afterward, when the peritoneum of the cul-de-sac is reunited, the very greatest discomfort from distention of the bladder will follow.

Opening of the bladder or rectum.—If the bladder or rectum should happen to be opened, the best thing to do is to close it immediately, or, in case you cannot succeed in this, it should be done at a later operation.

Progressive "pincement" of the broad ligaments.—If the body of the uterus cannot be inverted either in front or behind, after having freed the cervix, two or three forceps should be placed on the ligaments on either side (always guiding the forceps with

two fingers passed into the peritoneal cul-de-sac) until the upper portion of the ligament is reached. Each time that a forceps is put on, the corresponding portion of the uterus should be freed by the scissors. Place a forceps alternately on the right and left, or, better, catch up all the ligament on one side, paying no attention to the ligament on the other side; in this case, as soon as the end of the ligament is reached, the fundus uteri is seized, drawn outside, and hemorrhage from the opposite ligament controlled by two or three medium-sized forceps. For the purpose of preventing hemorrhage, forceps with long jaws are sometimes used to grasp the entire ligament. I have abandoned this procedure, believing that hemorrhage can be controlled more surely with smaller or shorter-jawed instruments. Lastly, the forceps

FIG. 9.

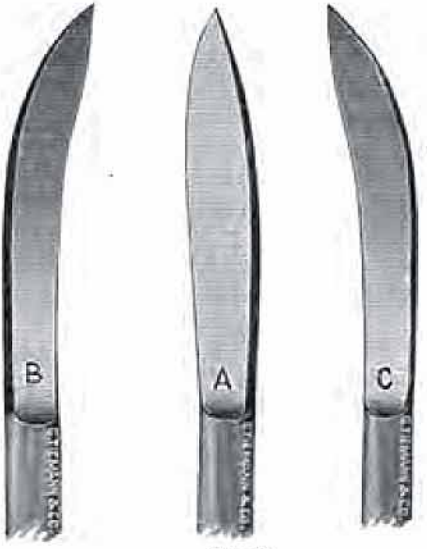

FIG. 10.

should never be closed until you are certain that the jaws do not enclose or pinch a portion of intestine or some other pelvic organ.

Duration of the operation.—This simple hysterectomy embraces five steps or stages; each step takes one to two minutes for its completion, yet the operation can easily be done in six minutes. Putting on the dressings after the operation usually takes more time than the operation itself.

VAGINAL HYSTERECTOMY BY SINGLE OR MULTIPLE SECTION.—Uterine fibromata which do not extend above the umbilicus can be taken out through the vagina. It is not my intention to review here all the advantages which this method has in its favor. Suffice it to say once for all that it merits preference for interstitial fibrous tumors, whatever the place of their development. Abdominal section is best for subperitoneal fibromata, provided their ablation can be accomplished without having recourse to

hysterectomy. It is the same for submucous fibromata, which can more often be removed by or from the uterine cavity without primary or secondary hysterectomy.

According to the location of the fibroma or fibromata, we will find the cervix uteri in its normal place or turned to the right or to the left, in front or behind. In the first case the fibromata are situated or developed in the upper part of the uterine walls; in the other cases they are situated either between the layers of the broad ligaments or in the lower part of the uterine walls.

When the fibromata are developed between the layers of the broad ligaments we should always remove the tumor piecemeal before we can do a hysterectomy; when they are developed in the walls of the uterus, ablation of the tumor and its matrix are done simultaneously.

For this operation we shall have to add several instruments to our previous armamentarium—several tenacula of different styles, and twenty medium sized forceps of all dimensions (Figs. 8 and 9).

Operation.—First and second steps: The first two steps in the

FIG. 11.

operation—that is to say, the incision into the vaginal mucosa of the cervix and the detaching of the cervix—are done precisely as in the preceding description. The cervix having been disengaged up to the internal os, we place our two small forceps on the uterine arteries and free the cervix with scissors.

Third: If the tumor is not too large there is an advantage in proceeding according to the method of Doyen, as follows:

After opening the peritoneal cul-de-sac a retractor is introduced into the cul-de sac anteriorly for the purpose of protecting the bladder. Then placing two tenacula on the lips of the cervix laterally, a section of the cervix and anterior wall is made by the scissors from before backward, up to the fundus of the organ. As soon as this section is completed each lip of the incision is strongly pulled out by means of tenacula placed successively higher and higher, for the purpose of producing a veritable ectropion of the whole organ by an antero-posterior section.

Fourth: The uterus and the tumor or tumors coming down into the vagina, several forceps are rapidly placed upon the ligaments and appendages, and a section is made with the scissors close to the uterine walls.

Fifth: If the tumor is too large, in place of only making a single section of the anterior wall it is bifurcated, the uterine

tissue forming a V-shape, which is drawn out *en bloc* or piecemeal before the fundus of the organ is reached.

In these procedures forcipressure is *consecutive* to the operation proper. This operation takes from ten to twenty minutes. The dressings and after-treatment are the same as for the operation previously described.

HYSTERECTOMY "PAR MORCELLEMENT" IN CASES OF FIBROMATA.—If the tumor is very large the proceedings we have just described are futile, and we must have recourse to removing the tumor piecemeal.

Péan's method.—Removal piecemeal will be done by small incisions, after disengaging the cervix and securing the uterine arteries with forceps. The anterior and posterior culs-de-sac being opened, the cervix is cut transversely for the purpose of making two flaps, an anterior and a posterior. This last is done at once by scissors.

A forceps is placed on the most accessible portion of the ligaments as high up as possible on each side, and the section is made as near the uterus as possible. A part, large or small, of

FIG. 12.

the uterus is freed in this way, and is taken out either in pieces or *en bloc*, according to its size; each section is preceded by placing a tenaculum on that part of the organ next to the part that is to be cut. Morcellement is done either by scissors or knife (Figs. 10 and 11). By continuing thus, whether on the anterior or posterior surface, the fundus is gradually reached. This is removed, and the appendages also in the manner I have already described.

The fibromatous nuclei are taken out as soon as met with, and it is worthy of remark that the débris of tumors or of the uterus grows larger and larger as the operation proceeds. According to the case, certain modifications in the method of procedure can be utilized.

When the tumor is posterior the whole anterior wall can be taken away up to the fundus uteri, and the posterior wall can be taken out piecemeal from above downward from the base to the cervix, after the modification of Richelot. When the fibroma is developed in the layers of the ligaments, or if by traction on the cervix the uterus does not come down, traction forceps should be placed on the right and left, and enucleation done by vertical or oblique section in the median line. This

is the conoidal method of Ségond. I have been compelled to enucleate the organ in one case by taking out "coins" or wedge-shaped pieces having a central base. Müller, after the uterus is detached, cuts it into two symmetrical parts from below upward and places forceps on the end of each half or part. Quénu divides the cervix into two lateral halves; then, by progressive traction, he draws down one part, upon which he continues to make antero-posterior sections, and so on.

Last step: The removal of the appendages, the dressings and after-treatment, differ in no respect from that given in the previous description.

It is thought that this operation cannot be done with the same rapidity described in the previous operations. This all depends

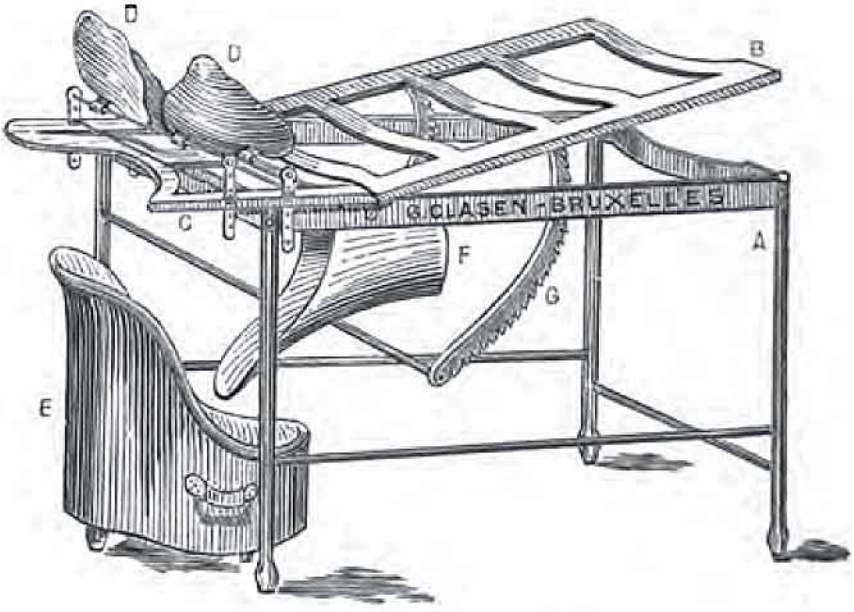

FIG. 18.—Jacobs' operating table for vaginal hysterectomy.

on the size of the tumor; thus it may last from fifteen minutes to an hour and a half.

HYSTERECTOMY "PAR MORCELLEMENT" IN PELVIC SUPPURATION.—Assume the small pelvis to be occupied by a mass made up of the appendages and the adjacent organs, in which the uterus is enclosed. The question then is to get the uterus out, and, if possible, the appendages, in order to open the pus pockets and permit of drainage. As the uterus cannot be brought down because of adhesions, the incision into the vaginal mucous membrane, done as I have before described, presents more difficulties. Releasing the cervix and securing the uterine arteries is done the same as before. These preliminaries over, the removal of the cervix is immediately accomplished, and tenacula grasp the body of the uterus. The operation is then continued by successive steps or stages, done with great care. Each step compre-

hends the liberation, by means of the finger, of the anterior and posterior walls of the uterus, the pinching up of a portion (large or small) of the broad ligaments, *la section équivalente* of these ligaments, the excision by fragments of the corresponding portion of uterine tissue. It is important never to lose sight of the cavity of the uterus, and for its position to be determined by the uterine sound. When the fundus uteri is reached two medium-sized forceps grasp the appendages; section is made internally by the forceps. It often happens, at the beginning of the operation, that pus pockets are opened near the uterus. The finger, which is the guide to the whole operation, will easily find the position of these pockets and will open them as soon as possible. Some pockets may communicate with the intestines or bladder, but this is very rare. The surgeon need not bother himself about these, for the fistulæ should close up quite rapidly after the operation (fifteen to twenty days). As soon as the uterus is removed it becomes necessary to attempt the removal of the appendages. Here the operation becomes delicate, difficult, and demands the greatest patience. I have often been able to demonstrate that here, as in the case of abdominal section, these adherent appendages can be freed by doing *clivage*. Coils of intestine can be drawn down into the vagina (with the appendages), and the adhesions can be broken up without danger by scissors or thermocautery, after which the intestines are returned to the abdominal cavity. If, however, all the efforts of the surgeon cannot free them, he should decide to leave them, after having incised them in order to permit of drainage. Likewise, if the fundus of the uterus be very adherent to the intestines and there is danger in continuing the extirpation, it will be necessary to abandon it—a procedure that presents few inconveniences if all the neighboring pus cavities are opened. However, it has happened that these residues thus abandoned have by degrees brought on new complications. Dressings and after-treatment are the same as for the preceding operations.