The Journal of the American Medical Association

VOL. XXXV

CHICAGO, ILLINOIS, SEPTEMBER 29, 1900.

No. 13

Original Articles.

TECHNIQUE OF VAGINAL EXTIRPATION FOR CANCER OF THE CERVIX BY LIGATURE ONLY*

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It would hardly seem necessary before this audience to emphasize the importance of careful preparation of the patient before subjecting her to such a serious operation as the one to be considered. Yet this is a very important element in the after-management and in bringing a case of hysterectomy for cancer to a successful termination. These patients should be as carefully prepared for the operation as though they were about to be subjected to an abdominal section. It is especially desirous that the function of the kidneys be carefully investigated in every instance and every defect noted and corrected if possible. It is always advantageous in this preliminary treatment to keep the patient under observation for a few days.

The anesthetic selected should be chloroform in every instance, unless it is contraindicated from heart lesions, or, as is the case in rare instances, where the patient does not take the chloroform kindly. Then ether should be substituted.

The extreme lithotomy position should be used. The perineum should be retracted by a short, broad speculum. An instrument with a blade an inch and three-quarters long and an inch and a half to two inches broad is to be preferred, with such other retractors as the operator may deem necessary. The writer uses one or two narrow short-beaked retractors.

If the disease in the cervix is a large sloughing mass with or without severe hemorrhage, or if it is an epithelioma filling the upper half of the vagina, it is advantageous to do the operation in two stages. First, give an anesthetic and with a sharp curette cut away all of the soft tissue, and then with a thermocautery cauterize deeply all the raw surface. Postpone the radical operation for ten days or two weeks. At this time it will be found that there is an apparently healthy granulating surface, greatly contracted, and with none of that disagreeable stench which is always present in the condition just described. By this plan there will be less danger of infection. If the case is one that has recently lost much blood and still continues to bleed, this will stop the bleeding and give time to recuperate her strength somewhat. If it is proposed to do the radical operation the patient should be properly prepared and anesthetized, and then placed in the lithotomy position with the "clover crutch" applied. There should

be an assistant standing at each side of the patient to steady the limbs and assist in holding the retractors, instruments, etc. The vagina should be thoroughly cleansed, the sharp curette again used and all the soft tissue cut away. The uterus should be curetted when indicated. The raw surface should again be cauterized with the thermocautery, and the vagina again thoroughly cleansed and irrigated with a 1 to 1000 solution of bichlorid of mercury.

It has been asserted with great positiveness by Cheyne and others that in operations for cancer, where the operator is compelled to cut through the cancerous tissue, there is great danger of disseminating cancerous cells over healthy tissue in the subsequent steps of the operation. This is the probable cause of recurrence later in a great many instances. Whether we accept this view or not, the thorough curetting and subsequent cauterizing, by preventing infection, adds to the safety of the patient. This also prevents bringing the cancerous tissue in contact with the healthy tissues in the subsequent steps of the radical operation.

The cervix should be fixed with a strong vulsellum forceps. The vaginal mucous membrane should be divided clear around the cervix with a knife or scissors. It should be divided a good, safe distance from the diseased area, usually a half inch or more, as indicated by the extension of the disease, and this cuff-like piece of mucous membrane then dissected back to its attachment to the uterus. This can be readily done by blunt dissection, with an occasional nick with the scissors. The bladder is detached from the uterus and the peritoneal cavity opened in front. The right and left index fingers are placed in the wound and widely separated. This part of the operation should be carefully carried out so as to push the ureters with the adjacent tissues far aside. As soon as this has been accomplished, a gauze pad $3\frac{1}{2}$ by 5 inches, with a stout ligature attached, is passed into the peritoneal cavity and left resting on the uterus. The peritoneal cavity is again opened behind the uterus and the tissues pushed laterally as far as possible. The uterus now remains attached to the broad ligaments only. The operator places his first ligature at this stage of the operation. This should be a very heavy silk twist and the same material used for all the ligatures. The writer usually uses the Cleveland ligature-carrier for this purpose. He has a trusted assistant sitting to his left, whose duty it is to place the ligature in the carrier.

If the disease is more marked on one side of the uterus than it is on the other, which is usually true, he selects the healthy side for his first ligature. This is tied tightly, including a bite of tissue not thicker than a lead pencil. When the knot is thoroughly secured the tissue included is divided, leaving a good button of tissue to prevent slipping of the ligature, and one end cut short. If the disease is not far advanced, a ligature can be placed on the opposite side and treated likewise.

*Presented to the Section on Obstetrics and Diseases of Women, at the Fifty-first Annual Meeting of the American Medical Association, held at Atlantic City, N. J., June 5-8, 1900.

This can be repeated, going from one side to the other alternately, the uterus gradually descending, until the operator is able to pass a ligature over the top of the broad ligament on one side. For this maneuver the Rickett's ligature-carrier is the best I have seen. Every ligature must be tied as carefully as though the operator expected to secure one of the main arteries in its bite. This is the only way to insure perfect hemostasis. It is important not to secure too large a bite of tissue in any one ligature. As soon as one broad ligament has been divided, the uterus can be turned aside and brought out of the vagina. Then the remaining broad ligament can be ligated from above and the ligature placed outside of the ovary and tube. This is important from the fact that the tubes are favorite channels for the extension of malignant disease. Therefore the tubes and ovaries should always be removed in cancer of the uterus. It is not always possible to place the ligature outside of the ovary and tube before the first broad ligament is divided, but after the uterus has been removed, as indicated, the operator can readily place a second ligature beyond the ovary and tube of the first broad ligament divided, and remove them. In this operation there will frequently, in fact, usually, be from six to ten ligatures on either side. The operation is almost a bloodless one. It is very unusual indeed for a patient to lose more than an ounce or two of blood.

The gauze pads placed early in the operation come into view now. They serve to protect the intestines and omentum and to prevent them from coming into the field of operation. They also absorb any blood that is lost during the operation. The bunch of ligatures on either side are now secured by tying one of the ligatures around the rest on that side, and are given into the care of the assistant. The peritoneal edges of the wound are united at the pelvic brim above the ligatures in the following manner:

A Hagedorn needle is threaded with catgut and passed through the anterior flap of the peritoneum near the angle. It then catches up the peritoneum on the broad ligament half an inch beyond the last ligature, then again catches up the peritoneum on the posterior wall near the angle. The ligature is then knotted. This brings peritoneum to peritoneum beyond the topmost ligature. This stitch is continued from one peritoneal flap to another in a running suture until the middle line is reached, then it is drawn taut. This ligature is given into the hands of an assistant. A like maneuver is carried out on the opposite side, except that the ligature is not drawn taut until after the gauze pads are removed. The gauze sponges are removed from the peritoneal cavity, and with a bit of gauze in the bite of a forceps the blood, if any, is removed from the pelvic cavity. By pulling on the ends of the catgut ligatures the peritoneum is nicely adjusted throughout from one pelvic brim to the other, but not so tightly that the blood can not escape from the pelvis for the first few hours. The two ends of the catgut are in apposition in the middle line, and are knotted and cut short. The vagina is packed snugly with iodoform gauze resting against the peritoneum. This is not disturbed for four days, during which time the patient is catheterized as occasion may require. The gauze is removed on the fourth day and not replaced, and the patient is given a hot vaginal douche. This is repeated at short intervals and she is permitted to void her urine.

The use of the ligature in this operation in place of the clamp is a distinct advance in surgery and should always be preferred. There is less suffering and an

easier convalescence. In the operation with the ligature, if the disease is far advanced on one side, the operator can place the ligatures on the healthy side until he divides the broad ligament and turns the uterus out of the vagina. He can then work from above downward and enucleate the indurated cancerous tissue far out into the broad ligament. This maneuver would be totally impossible by the clamp method. The writer has performed this feat on a number of occasions and has been surprised at the ease with which it was accomplished on cases that would have to be refused operation by the clamp method, or the operator would be compelled to leave the cancerous tissue in the broad ligament.

The danger of dividing the ureters is always present, but the writer does not believe that it is always necessary to pass a bougie into the ureter. By opening the peritoneal cavity freely in front and pressing the tissues and ureters far from the middle line, with ordinary care, it would be rare indeed that a ureter would be ligated or divided in a case that should legitimately be operated on for cancer.

One of the great advantages in operating with the ligature is the fact that the peritoneum can be closed as accurately after the operation as in a median section. This is thoroughly closed by plastic exudation long before pus is formed, thus closing the cavity from danger of infection. If the gauze packing is allowed to remain three or four days, the peritoneum will be thoroughly united and the danger of infection and subsequent intestinal obstruction will be very small. Not a single case of infection or obstruction has occurred in something over 100 operations made by the writer.

ABDOMINAL VS. VAGINAL HYSTERECTOMY FOR UTERINE CARCINOMA.*

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The choice of route for hysterectomy must be selected for each case. It is my desire to present a concise résumé of the reasons for each, and the advantages they offer in the cases to which they are applicable.

The views laid down are those of the general surgeon, and are based on an experience in this work that justifies, I think, an opinion. It has been claimed that vaginal hysterectomy is an operation that requires special training and attention to detail and technique which can only be acquired by the specialist. I can not, however, allow this statement to go unchallenged, for I believe that the general surgeon, with his larger field and constant application to detailed technique, is equally well, if not better, equipped to perform every operation of gynecology than is the specialist himself.

Who to-day, but in exceptional instances, would dream of amputating a carcinomatous mammary gland and leave *in situ* the axillary chains of lymphatics whether they be macroscopically infected or not, and yet how many of the leaders of gynecology recommend or perform themselves the complete operation for carcinoma of the uterus? Carcinoma of the uterus is a very common disease, not more so to-day than formerly, but with increased knowledge and diagnostic skill we are able to discover and remove, in good time, uteri that otherwise would soon end in the destruction of the patient.

*Presented to the Section on Obstetrics and Diseases of Women, at the Fifty-first Annual Meeting of the American Medical Association, held at Atlantic City, N. J., June 5-8, 1900.