

VAGINAL HYSTERECTOMY—ITS INDICATIONS AND TECHNIQUE*

N. SPROAT HEANEY, M.D., F.A.C.S.

Professor of Obstetrics and Gynecology, Rush Medical College, University of Chicago

CHICAGO, ILLINOIS

VAGINAL hysterectomy is not a new procedure. Our grandfathers in gynecology, the founders of our special societies, were thoroughly familiar with its technique and indications. When, however, "perityphlitis" was found to be appendicitis and operation promised much in its cure, then the surgeons began to invade the abdomen for "chronic" appendicitis. While inside they discovered Jackson's membrane, cecum mobile, and a number of other anatomic deviations, and placed much stress upon their correction. Then gynecologists became enthused over this new surgery and departed from their vaginal technique in order to combine their indicated pelvic work with these new operative wrinkles. In consequence, vaginal surgery became neglected and recently one could find busy clinics where not a single vaginal hysterectomy had ever been performed either by the present staff or by their predecessors. Since the prophylactic surgery described above is known now to be meddlesome and frequently harmful and since the vaginal approach to pelvic disease is associated with less mortality, a smaller morbidity rate and a much more rapid convalescence, it is high time that present day gynecologists learned to appreciate the value of vaginal hysterectomy, acquire its technique, and extended its use.

In vaginal surgery, because of the restricted field, more delicate instruments are necessary than in abdominal work. A retractor a little too wide may make difficult an otherwise easy operation. The operating table should be such that when the patient is in the lithotomy position the pelvis is in the proper plane, tipped neither

too far upward or backward. A good spotlight thoroughly to illuminate the operative field is indispensable.

The beginner in vaginal surgery would do well to select his first cases for vaginal hysterectomy with considerable care, picking out easy cases until, as his skill increases, he may elect to do more difficult ones. The vagina should be roomy enough to allow the necessary manipulations. A narrow introitus can be overcome by a small episiotomy incision. A vaginal vault which is poorly developed or constricted will cause great difficulty. On the other hand, it may be easier to operate upon a nullipara than upon a multipara with too roomy a vagina, where the walls may fall together laterally and obscure visibility.

The uterus should not be too big. The first cases should allow the uterus to be delivered intact so as to allow prompt recognition of its upper attachments. When more experience has been obtained a uterus a little too large may be divested of its cervix to allow its removal. Later when one has learned to recognize the round ligaments and the attachments of the tubes and ovaries under all conditions, tumors of large size may be tackled for morcellation. The larger the tumor, however, the greater the chance of running into unexpected pathology in the appendages or the uterus itself.

The uterus should be freely movable. Fixation may be due to previous pelvic infection, so that the uterus may be surrounded by adhesions, and the appendages may be fixed and inaccessible, or it may be due to malignancy and the uterus be irremovable. A vaginal hysterectomy may

* From the Obstetrical and Gynecological Departments, Rush Medical College, University of Chicago, and Presbyterian Hospital.

be safely done in spite of this contraindication but it may call for much dexterity and caution on the part of the operator.

The operation should not be attempted if the patient has had previous pelvic surgery, especially by laparotomy. Adhesions of the intestine to the uterine body or appendages commonly form even after attention by experts. If these are encountered, sharp dissection with care to leave a bit of the uterine tissue on the intestine instead of the reverse, is usually easy, though one must be prepared to suture quite promptly any injury made to the intestine. Before transgressing this contraindication, one should rule out by careful history-taking, the probability of a previous intestinal obstruction, because there may be loops of intestine adherent to the old abdominal incision which cannot be loosened by the vaginal route, and which may precipitate an obstruction during convalescence due to overdilatation of the guts. Particular attention should be paid as to whether there has been a previous uterine fixation or such an operation as might result in fixation. If this is encountered anyway, careful boldness may solve the difficulty. One should not work blindly; if reasonable headway is not made, then the cervix should be cut off, bleeding points sutured, a large pack introduced into the pelvis to press against the uterine body, the vaginal vault closed carefully, the abdomen opened and the operation completed. I have had to desert the vaginal route and proceed abdominally only twice and in both instances the necessity arose because of a previous fixation of the uterus. In either case was the recovery any different than would be expected after the usual laparotomy.

If vaginal hysterectomy has been decided upon, the patient, after the usual preparations, is anesthetized with ethylene gas and when asleep is placed in the lithotomy position. After thorough cleansing of the vagina and vulva with soap and water, the vagina is well but gently swabbed with

Lugol's solution and the bladder emptied by the use of a catheter.

The cervix is grasped with a bullet forceps and pulled down as far as possible. If, in spite of previous cauterizations, the cervix does not seem free of infection it is thoroughly cauterized again at this time. An injection of 2 c.c. of obstetrical pituitary extract is given into the paracervical tissue so as to make the operation as bloodless as possible. A transverse incision is made through the mucosa anteriorly, below the attachment of the bladder. If there is doubt as to how low the bladder lies on the front of the uterus a sound may be introduced into the bladder to determine this point. The anterior wall of the vagina with the attached bladder is then separated from the anterior wall of the uterus. Sometimes this proceeds easily by use of the gloved finger or with gauze, but frequently sharp dissection is necessary. At any rate, one must keep rather towards the uterus than towards the bladder. If, in spite of care, the bladder is unavoidably entered, the mucosa should be sutured with interrupted No. 0 chromic catgut and the muscularis similarly sutured over the mucosal row. After the operation a retention catheter is placed in the bladder, to be removed when the patient is allowed out of bed. If the plica vesicouterina is easily found, it is incised and a narrow bladed retractor inserted into the peritoneal cavity. If an anterior repair is to be made or a prolapse corrected, before the peritoneum is opened, the bladder is freed from its attachments to the anterior vaginal wall up to the anterior urinary meatus. If a prolapse is being operated upon or if urinary incontinence exists, the entire length of the urethra is exposed and the fascia lying to each side of it is brought together over the urethra with two or three No. 1 chromic catgut sutures. The vaginal mucosa is then closed with the same sutures over the urethra. The removal of the excess vaginal mucosa and the completion of the anterior repair is postponed until the uterus has been removed.

If the plica vesicouterina is not promptly found the search is abandoned and an approach to the posterior cul-de-sac is started. A transverse incision is made through the mucosa posterior to the cervix at the height of the posterior vaginal fornix. The mucosa is pushed backwards to expose the peritoneum which is incised and a narrow bladed retractor is inserted there. Occasionally the posterior cul-de-sac is also not easy to enter. Instead of wasting time and unduly traumatizing the tissues, one then proceeds to the loosening of the uterus from its attachments. The anterior and posterior vaginal mucosa incisions are united by a lateral incision on each side of the cervix and the mucosa pushed back about $\frac{1}{8}$ inch on each side. Whether the peritoneum has been entered or not, the sacrouterine ligaments are now clearly exposed. The left sacrouterine ligament is firmly clamped with a slender curved clamp, the ligament cut on the uterine side and the clamp replaced by a No. 2 chromic catgut fixation ligature, which suture material is used throughout the rest of the operation. In the same way the exposed portion of the lower end of the broad ligament immediately above the sacrouterine ligament is similarly clamped divided and ligated. If one was successful in entering both the anterior and posterior cul-de-sacs as in the uncomplicated technique, then if both retractors are held strongly apart and to the left side, the uterine vessels can now be seen, clamped and ligated without fear of interfering with the ureters. If neither cul-de-sac has been entered, as soon as the left sacrouterine ligament has been clamped, incised, and ligated, the right sacrouterine ligament should be similarly disposed of. Severing both sacrouterine ligaments allows the uterus to be pulled further down. If not previously possible, the posterior and anterior cul-de-sacs should now be possible of entry. When both uterine vessels have been clamped and loosened the uterus can be still further drawn out. Ordinarily at this stage, the body of the uterus presents at the posterior

opening and by the use of bullet forceps can be delivered into the vagina, the fundus down. The upper part of the broad ligament is clamped and disposed of, as was done with the lower portions of the broad ligament, except where the sacrouterines were left with a double strand of catgut to identify them; the upper portions are left with a long single strand attached. The first clamping of the upper end of the broad ligament usually includes the suspensory ligament of the ovary, the uterine end of the Fallopian tube and the round ligament. The rest of the broad ligament is freed by clamps and fixation sutures, and the opposite side is then similarly attended.

When the uterus is somewhat too large for delivery intact, the cervix may be cut off just below the ligated uterine arteries, which reduction in size usually allows easy delivery of the uterine body. If the remaining mass is still too large, as much as possible is to be excised, either by a long handled scalpel or sharp scissors, in a succession of morcellations until the entire uterus can be delivered. This should be done under full vision, and before each chunk is removed the remaining portion should be fixed in position with a bullet forceps to prevent retraction and to control bleeding. As early as possible during a morcellation the upper portion of the broad ligaments should be identified, clamped, and tied off, for with both uterine vessels already tied off there need be no fear of excessive bleeding after the ovarian vessels are securely ligated.

The appendages are now to be inspected. Pull down on each of the single stranded ligatures until the knot is visible, then seize the stump with a long Allis forceps and bring down the appendages and inspect for possible pathology. Occasionally pathology is encountered which is difficult of removal, in particular, adherent inflammatory adnexa. Such appendages can be loosened by gentle manipulation with the fingers, just as is done in abdominal operation. If the uterus has not been easily removed, especially if pedunculated fibroids were present, and particularly if morcella-

tion was necessary, then after the appendages have been disposed of, all instruments should be removed from the operative field and two fingers inserted through the vaginal vault to feel for possible uterine remnants since a pedunculated fibroid may have been peeled off the uterine body and left behind. Unless an intraligamentous nodule has been left such nodules are easily removed; if intraligamentous, more exactness is required.

All ligatures should now be inspected and hemostasis perfected. The pelvis is now ready for closure. If an anterior repair is to be done, the anterior vaginal flaps are excised and any spurters found are isolated and separately ligated instead of depending upon a running suture. If the patient had a prolapse the round ligaments are caught, each with a long Allis forceps as high up as possible. A chromic or silk suture is passed through the vaginal mucosa to the left of the vaginal flap just below the last suture used in covering the urethra after the urethroplasty. It is passed through the mucosa and a good bite of the lateral vaginal fascia is included; then it is passed around the round ligament as high up as possible on the left, and a similar bite is taken through the right round ligament. The suture then passes through the right vaginal fascia close below the internal urinary meatus and out through the mucosa close to the median incision. This suture is then carefully but firmly tied. This step anchors the round ligaments under the urethra and brings the bladder to rest upon the broad ligaments. When this is done, a couple of interrupted sutures will unite the broad ligaments together in the midline. If silk is used for the anchoring of the round ligaments its removal must be delayed until three or four weeks after the operation. Whether a prolapse operation is being performed or the patient is to have an anterior repair completed, interrupted sutures close the incision from the urethral area up to the vaginal vault.

The vaginal vault is then closed. A small pack is inserted to keep the intestines back.

A suture is passed through the right edge of the anterior vaginal cuff which takes several superficial bites of the denuded surface of the bladder and then picks up the anterior fold of the peritoneum. The ligature holding the upper portion of the broad ligament is drawn down, to expose the peritoneal fold running from the bladder to the broad ligament. The suture takes bites of the peritoneum until it reaches the broad ligament, where it is passed around the tubo-ovarian stump in order doubly to ligate the ovarian vessels. The suture now picks up the peritoneum of the broad ligament in successive bites until it reaches the stump of the uterine vessels and sacrouterine ligament, around each of which it is passed that these areas may be ligated again. The suture is passed through the right edge of the posterior peritoneal flap, through the vaginal wall and out into the right side of the posterior vaginal fornix. This suture, when tied, has anchored the broad and sacrouterine ligaments to the vaginal vault, doubly ligated the ovarian and uterine vessels, has performed a peritoneal toilet and has closed the right side of the vaginal vault. The left side is now similarly treated. Before tying this suture, if a deep cul-de-sac is present or if a prolapse is being treated, a suture is taken which ties both sacrouterines together and obliterates the cul-de-sac. The rest of the vaginal vault is closed with two or three interrupted sutures.

A posterior colpoperineorrhaphy is done if indicated. If the bladder has been injured, a urethroplastic operation is performed, or, if an extensive anterior repair has been done, then a hollow tip Mallencot two-wing rubber retention catheter is inserted into the bladder to be left there until the patient sits up. When the time comes for its removal the catheter is cut close to the urethra, the edge of the catheter is held by an artery forceps and a sound pressed into the catheter to lengthen the head, so that it may be withdrawn without dilating the urethral wall. After an ordinary hysterectomy the bladder is

emptied by a glass catheter and a vaginal pack is inserted to support the vaginal vault during coughing or vomiting. This pack is removed after twenty-four hours. The same attention is given the bladder as after abdominal hysterectomy.

On the seventh postoperative day perineal sutures, if present, are removed and the patient is allowed out of bed. The average length of stay in the hospital is twelve days.

This operation can be performed with a mortality of $\frac{1}{3}$ per cent in a series of several hundreds of cases, not excluding

any as poor surgical risks but including delicate old women, a considerable portion of morcellations as well as nulliparae and virgins with intact hymens. The technique is not difficult. Anyone who can do an interposition operation nicely should have no particular difficulty in doing a vaginal hysterectomy well. A skillful gynecologist should be expected to perform every operation in his very restricted field. No operation, under certain conditions, can be more strictly indicated than a vaginal hysterectomy and frequently no other operation can be fairly substituted for it.



SINCE the various genital organs have a very limited number of responses to disease, any one symptom may represent a considerable number of pathological states, some of them very dangerous and others relatively harmless.

From—"A Textbook of Surgery" by John Homans (Thomas).