THE TECHNIQUE OF VAGINAL HYSTERECTOMY.

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The patient is prepared for three days. She is given 3 grs. of Hg. Cl. with ½ oz. Mg. $So._4$ the first day, and 2 grs. of Hg. Cl. with generally ½ oz. Mg. $So._4$ the second day of preparation. Five grains of Hg. Cl. with 1 oz. Mg. $So._4$ is generally sufficient to produce fifteen stools, with bile glistening among the last ones, showing whence they come. This method of purgation excites the gastro-intestinal glands to the maximum condition of secretion—the safest state for elimination of waste products.

Second—The urine is examined on the first and second days for albumin, sugar, and urea. Traces of albumin signify little for or against operation. Sugar is more significant, but very seldom met. Any constant or considerable quantity of sugar in the urine would contra-indicate operation. The significant and standard factor for vaginal hysterectomy is the per cent. or number of grains of urea to the ounce of urine. For several years I have had the urea tested at the various hospitals, and it varies from three to thirteen grains to the ounce. Below three or above thirteen grains of urea to the ounce I would hesitate to operate. The common findings are six grains to the ounce. Drinks, as lemonade, with a little spirits of nitre, Co., spirits of juniper, etc., materially increase the quantity of urine. But the purgation steals away much fluid and passes it off with the stools.

Third—The patient should have a daily scrub bath of salt and soap, lasting fifteen to thirty minutes, according to the patient's strength. By this natural stimulus to the gastro-intestinal mucosa, kidney, and skin we arouse the three secretory apparatus, the eliminators, the drains, to the highest function, which is the safest condition to re-

sist infection. Seventy-two hours is little time enough to prepare a patient for such an ordeal. Four days is still better. During the three days preceding the patient should be fed on liquid diet, e. g., milk, eggs, oatmeal, toast, baked apple. Avoid foods difficult to digest, as meats, beans, cheese, and uncooked fruits. Two hours before the operation introduce a high rectal enema. I start the use of strychnia sulph. at one-sixtieth of a grain hypodermically every four hours for two days previous to the operation.

She being now ready for operation and anesthetized (chloroform affects the heart; ether affects the lungs and kidneys, and selections can be made according to these defects), place her on the back and expose the cervix with Sims' specula, seize the cervix with traction forceps, pack the uterus moderately with bichloride gauze, disinfect the cervical canal with Hg. Cl_2 (1 to 1,000) or 25 per cent. carbolic acid, and close the mouth of the cervix tightly with strong silk ligatures, so as to prevent leakage of infectious matter in the field of operation. Omit no detail of antiseptic precaution, for life and death may hang on a single one. Now seize the closed cervix with double-pronged traction forceps and draw it gently outwards, where it may be further exposed with the blade of the vaginal specula by the two lateral assistants. With scalpel or scissors make a circular incision through the vagina at the cervico-vaginal junction (avoid the bladder by testing its position with a sound). With the index finger begin gradually but vigorously to separate the uterus from its surroundings, at the same time keeping up continual force on the traction forceps. As the finger gradually separates the bladder and rectum from the uterus and the uterus descends, two strong structures will appear on the sides of the uterus, viz., the sacro-uterine ligaments and the uterine arteries. The sacro- (rectal) uterine ligaments may be entirely severed with the scissors without fear of hemorrhage, when the uterus will descend to a surprising degree. The uterine arteries should be entirely isolated by first penetrating the peritoneum between the bladder and uterus with finger or scissors, after which the index fingers should separate well all tissues between the bladder and uterus as far out and some distance into the broad ligament, so that the ureters (the dangerous elements) may be well pushed to the sides of the uterus, i. e., forced laterally out of the grip of the ligature.

Now pass the finger behind between the rectum and uterus, penetrating the peritoneum, Douglas' pouch, and gradually separating and isolating the uterus. As the pouch of Douglas becomes open a sponge with a string on it may be passed in to prevent the intestines from prolapsing. By this time the broad ligaments will be so thin that the index finger can easily be brought from behind forward above the uterine artery. With the index finger around the uterine artery, by the aid of an aneurism needle armed with strong silk one can easily tie the isolated artery in sight. Now place on the artery a hemostatic forceps, with a good catch or lock on it, on the distal side of the ligature, and with a pair of scissors sever the artery between the hemostatic forceps and uterus. Treat the other uterine artery similarly, always forcing the index finger through the broad ligament and above the artery from behind forward. Isolate the uterine artery well, for then there will be less nerves and tissue crushed and hence less pain and sloughing. The uterus can by this time be well drawn down, whence one can enucleate the appendages by following the lines of cleavage. After sufficient enucleation and cleaving of the appendages is done, one can rotate the fundus forward or backward, and by seizing it with strong traction forceps pull it out of the vagina, or one can gradually pull the uterus down without rotation. Now carefully and gradually draw out one appendage at a time and put a ligature on the broad ligament just about the ovary and tube. Place a hemostatic forceps with reliable catch on the distal side of the ligature, severing the tissue between the forceps and the uterus with scissors. Treat the other appendage similarly, never attempting to isolate completely the ovarian artery, for we wish to utilize the broad ligament to grow into and hold up the upper end of the vagina.

The uterus and appendages are now removed; we have applied four ligatures and four hemostatic forceps. Sterilized gauze is pushed into the peritoneal cavity for drainage and the vagina is also packed and the forceps well wrapped with gauze to protect them from vaginal secretions (acid) and to prevent them from galling (necrosing) the patient's vagina. The patient is then placed in bed. She is allowed, say three hours after, to sip a teaspoonful of hot water every eight to ten minutes if she does not vomit. If she vomits keep everything out of the stomach. On the second day allow the patient one and one-half to two ounces of fluid per hour. Allow the patient, as soon as she is out of the anesthesia, to have a small pillow. Catheterize the bladder every five hours. Allow the woman to turn on her side after ten hours.

In thirty-six hours remove the hemostatic forceps, and on the fifth day remove the gauze, giving a quart douche just inside of the vulva. The gauze in the vagina will emit odor for three days, but that is only superficial decomposition. In forty-eight hours begin with Hg. Cl. one grain every two hours until three grains are taken, when a rectal enema will produce a stool. Fifteen hours after the operation gas should begin to pass, and if it does not a rectal enema, medicated or not, every three hours, will aid in expelling gas. Give one-sixtieth of a grain of strychnia sulph. every three hours after the operation for two or three days. After the vaginal gauze is removed administer a vaginal douche morning and evening. At-

tempt to pull the ligatures away after the twelfth day. Allow the patient to get out of bed after three weeks.

CONCLUSIONS.

1. The clamps or ligature is used for safety and for the purpose of allowing the broad ligament to grow and become fixed in the upper end of the vagina, so that when the broad ligaments contract they will draw the vagina upward, elongate it, which will avoid vaginal hernia.

2. No ligatures are finally left in the peritoneal cavity.

3. It is a comparatively safe surgical procedure. In the last series of one hundred consecutive vaginal hysterectomies, without selection, Dr. Lucy Waite and myself lost three cases.

4. Vaginal hysterectomy is in the interest of the patient, while abdominal hysterectomy is in the interest of the operator.

5. Vaginal hysterectomy creates little shock, slight soiling of the peritoneum, perfect drainage, and rapid recovery.

6. The technique of vaginal hysterectomy requires generally thirty minutes to complete it.

7. Vaginal hysterectomy removes the whole uterus (tubes and ovaries if thought necessary), which insures prevention against pain, hemorrhage, disease, or discharge.

8. Vaginal hysterectomy is a surgical procedure of immense value, because it cures such a vast majority of patients.

9. It is followed by far less hernia than abdominal hysterectomy. However, in our last series of one hundred cases, one vaginal hernia occurred, and two cases occurred in which the upper end of the vagina sagged some, but did not come within one inch of the vulva. The cases (about seventy-five) in which we utilized the broad ligaments to hold up the vagina so far show no symptoms of vaginal (sacro-pubic) hernia.