VAGINAL HYSTERECTOMY*

A Study of 348 Cases

Leonard Averett, M.D., F.A.C.S., Philadelphia, Pa.

(From the Gynecology Departments of St. Agnes, St. Luke's and Children's and Northern Liberties Hospitals)

WHILE vaginal hysterectomy has not become widely popular in this country, nevertheless, it is enthusiastically praised by a small group of surgeons who have perfected themselves in the technique and have had an opportunity to observe the advantages of this procedure, when compared with hysterectomy performed through the abdominal route.

In the recent gynecologic literature, there appeared many excellent articles purporting to demonstrate the advantages of total abdominal hysterectomy over the subtotal operation.

E. H. Richardson[1] states that Von Graff collected nearly 1,200 cases of cancer of the cervical stump following subtotal hysterectomy. Two-thirds of these cases were reported within the last twelve years. It is quite probable that this does not represent the total incidence, since scattered cases must have been observed and not reported. Richardson further states that in a study just completed at the Johns Hopkins Hospital Clinic, and not yet published, Erle Henriksen found among 940 cases of cancer of the cervix an incidence of 2.3 per cent of stump cancer, and that in similar statistical reports the incidence of cervical stump cancer runs as high as 4.0 per cent. Fully two-thirds of the cases of stump cancer thus reported followed subtotal hysterectomy for fibroids.

The general belief that the coning out of mucous membrane of the cervical canal at the time of subtotal hysterectomy, or the destruction of it by cautery, as a prophylactic measure for subsequent development of stump cancer, is erroneous; this becomes evident when one recalls that more than 80 per cent of all cases of cancer of the cervix originate from the squamous cell epithelium of the portio vaginalis. Statistical studies show that of the large percentage of women who have had subtotal hysterectomies performed on account of the later consequences of uterine and tubal infection, about 20 per cent, who have never been pregnant, develop cervical stump cancer. This serves to focus our attention upon the possible rôle which chronic infections of the cervix play in the etiology of cancer.

In a recent paper J. R. Goodall[2] calls attention to the cause for the far greater incidence of postoperative complications in the subtotal over the total hysterectomy, and he enumerates them as phlebitis, pelvic cellulitis, embolism, peritonitis, and

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cystitis. He attributes these to mucosal disease of the cervix. The organism in the cervical mucosa while ordinarily attenuated may become activated and markedly pathogenic. This is further proved by the frequent incidence of secondary septic hemorrhage following trachelorrhaphy or trachelectomy which generally occurs on the eighth or twelfth day, the hemorrhage at times being severe enough to require transfusion.

The advocates of the subtotal or supravaginal hysterectomy claim a smaller mortality and a lesser morbidity as compared with the total or panhysterectomy. The advocates of the total hysterectomy claim that, in the first place, in expert hands the mortality and morbidity are not any greater, and second, the elimination of the possibility of cervical stump cancer and focal infection make this a more advantageous operation. Their claim is supported by statistics such as those of Fullerton and Faulkner,[3] who reported 1,851 abdominal hysterectomies, subtotal as well as total, with a mortality rate of 4.5 per cent. Sixty-three per cent of the 1,078 total hysterectomies were performed by five members of their visiting staff and the mortality was 3.5 per cent, while in 37 per cent performed by two members of the resident staff, the mortality was 5.2 per cent.

At a recent meeting of the Southern Medical Association in Baltimore, Q. V. Newell read a paper in which he summarized the mortalities in his cases.*

	MORTALITY
Supravaginal hysterectomy in cases complicated by pelvic infection	4.2%
Total hysterectomy in cases complicated by pelvic infection	3.2%
Supravaginal hysterectomy in cases not complicated by infection	3.5%
Total hysterectomy in cases not complicated by infection	1.3%

He reviewed the literature for a five-year period and compiled a total of 14,280 supravaginal hysterectomies with a minimum mortality of 1.2 per cent and a maximum one of 4.7 per cent. A similar summary of 5,223 total hysterectomies showed a minimum mortality of 1.0 per cent, and a maximum of 7.9 per cent.

Vaginal hysterectomy accomplishes everything claimed for the total abdominal hysterectomy, and has the following advantages over the abdominal hysterectomy:

1. Lower operative mortality and morbidity.

2. Less tendency to peritoneal infection or shock and is therefore suitable in cases that are bad operative risks and in no way a disadvantage to the robust patient.

3. In the treatment of hemorrhagic conditions of the uterus in middle-aged women, the mortality rate in vaginal hysterectomy is as low as that of radium, without the sequelae and relapses; furthermore, possible malignant conditions are, in the former procedure, readily disclosed and eliminated.

4. Convalescence is rapid, the patient is able to eat breakfast and read the daily paper the morning after operation. When hysterectomy alone is done without extensive plastic work the patient is practically devoid of complaint.

*Personal communication.

5. The risk of ventral hernia and postoperative adhesions is eliminated.
6. Adequate drainage more easily secured.
7. Less risk of injury to bladder and ureters, providing the bladder is properly freed and elevated at the beginning of the operation.

W. Wayne Babcock[4] reported 300 vaginal hysterectomies without a death. N. Sproat Heaney[5] reported a series of 627 vaginal hysterectomies with a mortality of 0.47 per cent. Kennedy reports a mortality of one-fifth of 1 per cent in several thousand cases.

Our own series consists of 348 cases without a death.

TABLE I. AGE INCIDENCE

9 between ages of	20 to 29
84 between ages of	30 to 39
174 between ages of	40 to 49
60 between ages of	50 to 59
18 between ages of	60 to 69
2 between ages of	70 to 79
1 between ages of	80 to 84

The two oldest patients in this series deserve special mention.

One patient seventy-eight years of age was admitted, suffering from profuse uterine hemorrhage and intermittent uterine contractions. Upon vaginal examination, the vagina was found to be filled with clots, the cervical canal was patulous, the uterine cavity measured 12 cm., and a submucous fibroid, the size of a hen's egg, was attached to the fundus.

Another patient eighty-four years of age was admitted with a complete procidentia and hemorrhage from an ulcerated cervix requiring packing to control the bleeding.

TABLE II. INDICATIONS

Fibromyoma of the uterus	193
Fibromyoma of the uterus fixed to anterior abdominal wall by previous operation	5
Fibromyoma of the uterus and bilateral chocolate cysts of ovaries	2
Fibromyoma of the uterus and ovarian tumors	8
Fibromyoma of the uterus and chronic bilateral tuboovarian disease	12
Hyperplastic or fibrotic uteri with excessive bleeding about the menopause	68
Prolapsus of uterus	51
Prolapsus of uterus with advanced carcinoma of cervix	1
Prolapsus of uterus after an interposition operation	1
Badly lacerated, diseased cervix	6
Adenomyoma of the uterus	1

Vaginal hysterectomy was performed sixty-eight times, in our series, for functional uterine bleeding in middle-aged women.

G. I. Strachan[6] reports two cases of functional uterine bleeding, proved to be benign by curettage, and the patients later developed cancer of the body of the uterus, seven years and two years, respectively, after the use of radium.

Vaginal hysterectomy was performed in five cases of fibromyoma where the uterus was fixed to the anterior abdominal wall by previous operation.

TABLE III. ADDITIONAL OPERATIVE PROCEDURES

Removal of one or both tubes	62
Removal of one or both ovaries	42
Plastic on urethra for incontinence	23
Posterior colpoperineorrhaphy	296
Repair of complete perineal tear	1
Preliminary episiotomy	26
Removal of Bartholin cyst	2
Repair of inguinal hernia	3
Repair of umbilical hernia	3
Appendectomy	2

With a virginal, nulliparous or atrophic vagina, a simple median episiotomy was performed. We have found no necessity for the extensive lateral incision of Schuchardt.

TABLE IV. PREOPERATIVE COMPLICATIONS

Secondary anemia, hemoglobin below 60% 16 required transfusion	42
Hypertension (systolic pressure above 150)	61
Chronic nephritis	18
Pulmonary tuberculosis (arrested)	3
Diabetes	5
Valvular heart disease	4
Chronic myocarditis	16

Among the sixteen patients requiring preoperative transfusions, one had a hemoglobin of 27 per cent with 1,218,000 red blood cells per cubic centimeter. This patient and three others required three transfusions each. Five patients required two transfusions each.

The metabolist was called in to treat the diabetic patients.

TABLE V. POSTOPERATIVE COMPLICATIONS

Temperature over 100.6° for one or more days due to:	
Femoral thrombophlebitis	8
Cystitis	19
Probably due to wound infection, low grade	32
Tonsillitis	2
Bronchitis	3
Deaths	0

TABLE VI. OPERATION

Type:		
Ligature		172
Clamp and ligature		62
Mayo modification		76
Kennedy clamp method		38
Anesthesia		HOSPITAL DAYS
Spinal	312	14.6
Gas and ether	36	

The indications for vaginal hysterectomy increase and the contraindications diminish with the increased skill and experience of the operator. Thus far we have not had to abandon the vaginal route and complete the operation abdominally. In difficult cases, the abdomen is prepared for just such an emergency. Following Dr. Babcock's description on morcellation of large fibroids, we were able to remove fibroids reaching above the umbilicus through the vaginal route.

A skillfully executed vaginal hysterectomy is a decidedly less formidable procedure as determined by its demonstrable effects upon the patient than is the same operation performed with equal skill by the abdominal route.

REFERENCES

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2106 Spruce Street

DISCUSSION

DR. W. WAYNE BABCOCK.—By using clamps one may remove the uterus in the quickest time and in the simplest manner. Clamps, however, limit the field of vaginal hysterectomy. When they are used it is difficult to take out a large uterus or a complicating ovarian tumor, and they interfere with an associated vaginoplastic operation. If a clamp rests against the soft tissues during the conventional forty-eight hours that it should be left on, it will cause a slough. Therefore, one should always carefully protect the vaginal wall by gauze packing. Occasionally a secondary hemorrhage follows the removal of the clamps.

After several alarming hemorrhages I turned from clamps to mass ligatures on the broad ligaments. Experience proved these to be insecure, a uterine artery or other vessel occasionally escaping from constriction during the extrication of the uterus. An associated closure of the vaginal vault also proved to be unwise probably because the pedicles were not anchored extraperitoneally, and not infrequently led to a pelvic abscess about the time the patient should have been ready to leave the hospital.

I therefore found it wise to expose and ligate the uterine and ovarian vessels individually on the sides of the uterus. This enabled me to open the anterior and posterior culdesac without any special effort, for the peritoneum is incidentally penetrated at the side of the uterus while exposing, ligating, and dividing the vessels. Thus there was little danger of injuring the bladder or rectum, and by proper retraction with a small trowel, the ureters are not endangered. The vaginal vault was also left open and a Mikulicz drain carried into the pelvis. This did away with the secondary pelvic abscesses, but in three instances, intestinal adhesions to the gauze or some adjacent part led to an obstruction requiring secondary operation. We, therefore, then brought the pedicles through the peritoneum to the vaginal wall where they were anchored, the peritoneum being closed, and the vaginal margins lightly approximated over the pedicles. Thus far this method has worked well.

With large fibroid tumors, for we remove fibroid uteri up to the size of a seven months' gestation, much of the blood supply is controlled before the morcellation is started and therefore there is less loss of blood. With the abdominal walls relaxed and the patient in a high Trendelenburg position, the interior of the pelvis and

lower abdomen may be inspected after the uterus has been removed. While as yet we have not been able to see the gallbladder, we have removed the appendix through the vagina, in about eighty such cases. Without clamps one or both ovaries may be resected or removed, and an anterior colporrhaphy and perineorrhaphy conveniently done after removal of the uterus.

To one experienced vaginal hysterectomy is the safest method of complete removal of the uterus, although not always the easiest for the operator. How else can one maintain a mortality under 0.5 of 1 per cent? It also has the lowest morbidity. If no vaginal plastic is done, the patient may be out of bed on the sixth day, and leave the hospital, without the cares of complications of an abdominal incision, on the eighth or tenth day. In the vaginal repair, we have found buried fine rustless steel wire of advantage. It is tieable, much stronger than silver wire, and need not be removed.

DR. HILLEL (Docent of the Mackenrodt Clinic, Berlin).—The first vaginal operations I saw were performed by Mackenrodt and Dührssen. If they could see the field which vaginal operations have attained in America, they would be astonished. In former times America could learn from Europe, but the surgery I have seen here in the United States has reached such a high standard that I believe Europe has nothing to offer any more.

DR. J. W. KENNEDY.—Thirty-odd years ago in the Joseph Price Hospital 50 per cent of the hysterectomies performed were done by the abdominal route. Today 5 per cent are performed through the abdomen against 95 by vaginal hysterectomy.

The indications for the operation are: All fibroid tumors that can be removed by the vaginal route and, if morcellation is resorted to, large growths may be removed through the vagina; all dysfunctions of the uterus in the suspicious and sterile uterus; all degrees of prolapse of the uterus in the sterile organ; all conditions of the abused cervix in patients over forty-five; in all patients where malignancy comes within the first and second groups; in all polypoid growths of the cervix in patients over forty-five, as over sixty per cent of these patients will show similar growths of the fundus, and in practically all patients with excessive weight with cardiorenal symptoms.

We feel that the slough incident to the clamps is a very important factor in the recommendation of the procedure in malignancy of the uterus.

The clamp method in removing the uterus is most important in any degree of prolapse of the organ, for after the clamps are removed the broad ligaments contract and pull the vaginal fornix high up and thus relieve the prolapse which takes care of the cystocele in most conditions. In the extensive prolapsed conditions, such as complete procidentia, we immediately do a repair of the cystocele by the use of silkworm-gut sutures.

The slough incident to the clamp method of removing the uterus causes an infectious discharge and buried absorbable sutures must not be used.

The mortality of vaginal hysterectomy is the lowest of any major operation of which I have knowledge. I have never seen a death from operative infection, operative or postoperative hemorrhage, nor from an embolus or postoperative pneumonia.

The clamp method of removing the uterus lengthens the vagina, the ligature method shortens it. The use of the clamps gives a large percentage of operability. The operative time is the shortest of any major operation of which I have knowledge. Very often the anesthesia may be stopped when the operator begins the procedure. There is little shock in vaginal hysterectomy.