THE INDICATIONS FOR VAGINAL HYSTERECTOMY

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VAGINAL hysterectomy is not a new operation, but it received scant attention until about 30 years ago. At that time Price of Philadelphia popularized it by leaving heavy clamps on the broad ligaments for 48 hours. This technique has lost favor since the advent of the Mayo operation which gives the bladder support and unites the broad ligaments in the midline by ligatures. The operation has had transient periods of popularity. Abdominal hysterectomy, on the other hand, has constantly been a dependable procedure maintaining its solid position as the operation of choice.

During the past few years the literature has contained many articles advocating more vaginal hysterectomies, increasing the indications, and giving statistics stressing the low mortality rate. Tyrone writes, "the indications . . . have gradually extended until . . . it is the accepted procedure in approximately one-half of the cases in which hysterectomy is necessary." Black recommends vaginal hysterectomy "with the full expectation that a few trials . . . will prove its merit and warrant its more general use." Heaney reports 627 vaginal hysterectomies with but 3 deaths, and states: "There has never been reported a series of hysterectomies by the abdominal route with so low a mortality rate." In a statistical study by Harris it was found that the mortality rate for vaginal hysterectomy was 2 per cent lower than for abdominal hysterectomy.

With such encouraging reports in the literature and the enthusiasm shown by advocates of vaginal hysterectomy, one is led to believe that this operation is to be chosen whenever possible. It was noted that the convalescence of patients who had undergone this operation was not as uneventful and uncomplicated as a perusal of the literature would lead one to believe. It was noted, generally, that the mortality rate was low but that the morbidity was higher than after abdominal hysterectomy. The younger patients did not have as smooth a convalescence as the older patients and had the more serious complications. It was also observed that many times technical difficulties arose which could not be foreseen and made the operation more hazardous than even a poorly performed abdominal hysterectomy.

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It was thought that a comparative study made between vaginal and abdominal hysterectomies might show the cause of the existing inconsistencies. The patients studied were operated upon by a group of 11 surgeons, with enough difference in skill and experience to give results which should be those of an average surgical service. The operative technique varied to some extent, but all the surgeons did some modification of the Mayo operation.

A total of 179 consecutive vaginal hysterectomies was compared with 200 consecutive abdominal hysterectomies. In the abdominal group there were 108 supracervical hysterectomies and 92 panhysterectomies. The series were both large enough to permit a fair comparison. No cases were omitted in either the vaginal or abdominal series as it was felt that every case should be included to get an accurate idea of the relative values of the two operations. Each patient's postoperative days of morbidity were counted and averaged. Due to the observation that the more senile patients had the less severe convalescence, the patients were placed in age groups for comparison. The standard of morbidity used was a temperature of 100.5 degrees F. or over, beginning with the first day after operation. The morbidity of patients weighing 160 pounds or over in the two groups was compared.

An attempt was made to compare the urinary complications. Those patients who received medication (urotropin, ammonium chloride, tincture of hyoscyamus, mandelic acid, sodium citrate, etc.) for the relief of genito-urinary complaints were recorded and compared. A comparative study was also made of postoperative complications. The mortality of the two groups was noted and the cause of death ascertained in each case by a postr ortem examination (Table III).

Table I shows the days of morbidity in the different age groups. There was little difference in the days of morbidity between the two types of abdominal operation, averaging 2.9 days. Vaginal hysterectomies averaged 4.7 days of morbidity. Rinsman and Sellers observed that morbidity was more prolonged in the vaginal type of hysterectomy. Witherspoon and Butler also found this true and found that these patients had the longest hospital stay. In the age group of 50 to

TABLE I.—AVERAGE POSTOPERATIVE DAYS OF MORBIDITY IN THE AGE GROUPS

Type of operation	Age, years 20–30	Age, years 30–40	Age, years 40–50	Age, years 50–70	Total average
Abdominal panhysterectomy	2.0	4.0	3.0	2.8	2.9
Supracervical hysterectomy	2.2	3.2	2.9	3.5	2.9
Total abdominal hysterectomy	2.1	3.6	2.9	3.1	2.9
Total vaginal hysterectomy	4.6	4.5	6.2	3.3	4.7

70 years it is seen that the average morbidity in the vaginal type of hysterectomy is practically the same as that of the abdominal operation, and this is the only age group the morbidity of which can compare with the abdominal series. Every patient in this group was operated upon for the cure of procidentia.

Postoperative urinary complications were most common in the patients who were operated upon by the vaginal procedure, 45 per cent of whom received urinary medication as compared to 25 per cent in the abdominal cases. Harris reported similar findings in his series.

A list of the postoperative complications is shown in Table II. It is difficult to evaluate a comparison such as this, but it is obvious that the complications in the one group are balanced by similar complications in the other group. The abdominal operations, however, were done on the most difficult and complicated cases while the vaginal hysterectomies were all done on carefully selected patients. It is logical to assume that due to the moribund condition of some of the patients who were operated upon by the abdominal procedure, the complications in this group should be expected to be more numerous and severe. Since the two series do balance so evenly it is strong evidence that an abdominal hysterectomy is the safer and is fraught with fewer postoperative complications than a vaginal hysterectomy, excluding cases of procidentia.

Wishard and Megenhardt made a study of the residual urinary symptoms and cystoscopic findings in these same patients. They found that the highest incidence of persistent symptoms is present in those patients who have had vaginal hysterectomies. This is consistent with the complaints registered by the patients examined in the postoperative gynecological clinic. In general, the younger patients had the greatest number of residual symptoms. Next to bladder discomfort these patients complained of pain in the lower quadrants which was interpreted as being due to tension on the supporting pelvic ligaments. It was observed that patients who had been operated upon by the vaginal route for procidentia had the fewest residual symptoms and were the more consistently relieved of their pre-operative complaints.

Table III gives the mortality rate and cause of death as confirmed by autopsy. The abdominal group had a mortality of 1.5 per cent compared to 0.5 per cent for the vaginal group. Vaginal hysterectomies, as stated, were performed on selected and uncomplicated cases. If abdominal hysterectomies had been done in place of vaginal operations on these patients, it is most probable that the mortality rate would have been just as low. The 3 patients upon whom the abdominal operation was performed who died had peritonitis, 2 of them presented difficult conditions in which the bowel was unknowingly opened and 1, upon whom a total hysterectomy was performed, had a pre-existing cellulitis of the vagina. All of these patients presented technical difficulties which made a vaginal hysterectomy impossible. Two patients had old pelvic infections which caused adherence of the pelvic viscera to the intestine and the remaining patient presented an impacted fibroid.

Seventy-eight patients with procidentia were treated by vaginal excision of the uterus and repair of the rectocele and cystocele when present. There were 49 patients in the age group of 50 to 70 years who were operated upon for procidentia, and 29 patients in the age group from 31 to 49 years. In the older group the morbidity was 3.3 days and in the younger 3.6 days. The average morbidity of patients with procidentia was 3.45 days, and this group of patients had the most uneventful convalescence, fewest complications, and the greatest amount of relief when examined 3 months after operation. With the good results obtained in these patients it is evident that a vaginal hysterectomy is a safe, curative treatment in cases of uterine prolapse with the associated cystocele and rectocele, irrespective of the patient's age. Richardson (9) states, "vaginal hysterectomy possesses distinct advantages over . . . the abdominal route in properly selected cases" and further adds (10), "an attempt to broaden the scope of the vaginal operation beyond reasonable

TABLE II.—NUMBER OF PATIENTS IN EACH GROUP WITH POSTOPERATIVE COMPLICATIONS

Complications	Abdominal panhysterectomy	Supracervical hysterectomy	Abdominal hysterectomy, total	Vaginal hysterectomy, total	Per cent	
					Vaginal	Abdominal
Wound infection	9	7	16	17*	0.9	0.8
Circulatory collapse	0	1	1	0	0.0	0.05
Pyelitis	1	5	6	5	0.28	0.3
Peritonitis	3	1	4	1	0.05	0.2
Rectovaginal fistula	0	0	0	1	0.05	0.0
Eventration of the wound	0	1	1	0	0.0	0.05
Postoperative hemorrhage	2	1	3	3	0.16	0.15
Pelvic abscess	3	0	3	6	0.33	0.15
Thyroid crisis	1	0	1	0	0.0	0.05
Vesicovaginal fistula	2	0	2	2	0.11	0.1
Parotitis	1	0	1	0	0.0	0.05
Toxic encephalitis	1	0	1	0	0.0	0.05
Phlebitis	0	0	0	1	0.05	0.0
Pulmonary embolism	0	0	0	1	0.05	0.0
Fecal impaction	0	0	0	2	0.11	0.0

*Abscess in roof of vagina.

limits makes it a mutilating procedure which serves only to discredit it and denotes neither sound judgment nor safe surgery."

The most common indications given by different writers for performing a vaginal hysterectomy were noted and were used in this series in an attempt to prove or disprove their justification. They are: (1) elderly patients who are bad risks, (2) malignancies of the cervix, (3) laceration and infection of the cervix, (4) fibroids and fibrosis of the uterus, (5) procidentia, (6) obesity. In the series studied all the elderly patients were operated upon by the vaginal route for the same condition, procidentia. Since the only other common need for pelvic surgery in the senile is pelvic tumors, which certainly should be removed by the abdominal route, it was thought that the first indication could be omitted. Malignancies of the cervix were formerly treated by total hysterectomy, but recent reports (13) reveal that the prognosis is much brighter when radiation is substituted for surgery. This is consistent with the results obtained in this clinic. Lacerations and infections of the cervix can be cured much mor conservatively (2, 3) than by a vaginal hysterectomy, and there is no indication for such radical treatment. The hackneyed argument of carcinoma originating in the remaining cervical stump is still moot, but recent papers show this possibility to be negligible (5, 12).

If a vaginal hysterectomy could be done with ease in an obese individual, it would certainly be preferred to an abdominal operation. Surgery through a fat abdominal wall with a thick, bulky omentum always makes any operative procedure more difficult and is attended by a greater danger of postoperative hernia, but it is often impossible to determine the presence of masses or fixation of the pelvic viscera when examining a fat individual The morbidity in the obese was higher in the vaginal series than in the abdominal. There was no death in either group (Table IV).

The perils encountered in a difficult laparotomy on an obese individual cannot compare with those present in a poorly selected vaginal hysterectomy. If it can be definitely determined before the op-

TABLE III.—MORTALITY RATES IN SERIES

Type of operation	Number of deaths	Autopsy findings
Panhysterectomy	2	Peritonitis
Supracervical hysterectomy	1	Peritonitis
Vaginal hysterectomy	1	Pulmonary embolism
Abdominal	1.5%	
Vaginal	0.5%	

TABLE IV.—MORBIDITY OF PATIENTS WEIGHING 160 POUNDS OR MORE

	Abdominal hysterectomy	Vaginal hysterectomy
Number of patients	34	17
Average weight	182	174.8
Average morbidity	4.3	0.05
Mortality	0	0

eration that there are no abdominal tumors and that the uterus and adnexa are not fixed so that the uterus can be prolapsed with some traction, the indications for a vaginal hysterectomy may be present. Two cases were encountered in which, at the time the vaginal hysterectomy was performed, pelvic disease which had not been suspected was found, and could not be dealt with because of its inaccessibility. Three patients, or 8 per cent, in the obese abdominal group developed hernias after operation. In every patient in whom a hernia occurred contra-indications for a vaginal hysterectomy were present. It would seem that an abdominal hysterectomy on a corpulent individual is still safer than the average vaginal operation, except in cases of procidentia.

Morcellation may be required in order to remove a fibroid of the uterus by the vaginal route. This procedure has been advocated by several writers. Larkin seems to have a sane and conservative view on this practice when he states: "Morcellation which is advocated is a dangerous procedure. One never knows when a benign appearing fibroid or supposedly benign cyst is harboring a malignant cancer." One vesicovaginal fistula in this series was due to delivering a fibroid uterus of such large dimensions through the vagina that a portion of the bladder was torn away. There can be no argument that an abdominal operation is to be chosen by the average surgeon in removing a uterine myoma unless it is so small that its diagnosis is difficult. Vaginal hysterectomy for the removal of fibroids had the highest mortality rate of any type of hysterectomy in the series reported by Harris.

CONCLUSIONS

1. Prolapse of the uterus is the only indication for a vaginal hysterectomy.

2. The morbidity is higher in vaginal hysterectomy than in abdominal hysterectomy, except in procidentia.

3. The smoother convalescence of older patients upon whom a vaginal hysterectomy was performed is explained by the fact that all the patients in this group were operated upon for procidentia.

4. Excluding cases of procidentia, the postoperative complications and complaints are more numerous in the vaginal group than in the abdominal group.

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BIBLIOGRAPHY

1. Black, S. O. Vaginal hysterectomy. South. Surg., 1934, 3: 271.
2. Danzis, M. Subtotal versus total hysterectomy. J. Med. Soc. N. Jersey, 1934, 31: 693.
3. Fine, S. G. Chronic endocervicitis and treatment by electro-coagulation. J. Med. Soc. New York, 1936, 33: 507.
4. Harris, L. J. A statistical study. J. Iowa State M. Soc., 1936, 26: 123.
5. Healy, W. P., and Arneson, A. N. A study of carcinoma of the cervical stump developing after subtotal hysterectomy. Am. J. Obst. & Gynec., 1935, 29: 370.
6. Heaney, N. S. A series of 627 vaginal hysterectomies performed for benign disease with three deaths. Am. J. Obst. & Gynec., 1935, 30: 269.
7. Larkin, C. L. Discussion of paper by O. N. Eastman: Vaginal Hysterectomy. New England J. Med., 1935, 212: 87.
8. Ottinger, R. Vaginal hysterectomy. J. Indiana State M. Ass., 1935, 28: 20.
9. Richardson, E. H. Total versus subtotal abdominal hysterectomy in benign uterine disease. Am. J. Obst. & Gynec., 1935, 30: 237.
10. Idem. Total hysterectomy by the abdominal versus the vaginal route in benign uterine disease. Am. J. Obst. & Gynec., 1936, 32: 641.
11. Rinsman, J. C., and Sellers, T. B. Morbidity and mortality in 272 hysterectomies. Am. J. Surg., 1935, 27: 282.
12. Scheffey, L. C. Carcinoma of the cervical stump. J. Am. M. Ass., 1936, 107: 837.
13. Shaw, L. F. Radium versus Wertheim's hysterectomy in the treatment of carcinoma of the cervix. Surg. Gynec. & Obst., 1937, 64: 332.
14. Tyrone, C. H. Vaginal hysterectomy—its indications, technic and end results. New Orleans M. & S. J., 1935, 88: 490.
15. Wishard, W., and Megenhardt, D. The bladder after hysterectomy. J. Urol. To be published.
16. Witherspoon, J. T., and Butler, W. Pan hysterectomy. Am. J. Surg., 1933, 22: 561.