

MANCHESTER OPERATION OF COLPORRHAPHY IN THE TREATMENT OF UTERINE PROLAPSE*

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UTERINE prolapse is an old lesion about which much has been written. Among the writings of Hippocrates reference is made to the fact that displacements of the uterus were recognized but it was not until the time of Galen, 130 to 210 A.D., that this condition excited much interest. Galen also well described the condition of prolapsus uteri.

According to William Fletcher Shaw,¹ Marshall Hall of London seems to have been the first to suggest narrowing the vagina in the treatment of uterine prolapse but there is no record that he performed the operation himself.

In 1831 Heming operated upon the anterior vaginal wall and was followed by numerous other surgeons, including Marion Sims, Emmet, Aveling and Gaillard Thomas. Operations on the posterior vaginal wall and perineum were performed by Hegar, Simon, Emmet, Martin and others. The cervix was amputated by Huguier, Coupil, Sims and others.

The 1890 edition of Hart and Barbour contains this statement about perineorrhaphy, "These operations help, at least by enabling the patient to wear a ring pessary," and that apparently was the object for which the operation was performed.

While numerous surgeons performed single operations on the anterior vaginal wall, on the posterior vaginal wall and amputated the cervix, none combined these three operations until some members of the Staff of the Women's Hospital attached to the University of Berlin and A. Donald of Manchester started to do so in 1888. Thus in 1888 A. Donald of Manchester quite independently began to treat cases of prolapsus uteri by the combined operation of anterior and posterior colporrhaphy and amputation of the cervix. Donald's first two operations were performed on April 28 and July 18, 1888, silver wire being used as suture material as this was the most commonly used suture at that time. Hearing that a new absorbable

suture material, catgut, was being tried in general surgery in Germany, Donald obtained some of this catgut, sterilized in carbolic oil, and used it in the performance of his third operation on August 3, 1888. He did an anterior colporrhaphy and approximated the deep tissues with a buried continuous suture of catgut. Two weeks later he did a posterior colporrhaphy using the same technic. The patient was discharged on August 30th and the following discharge note was made: "The wound was healed and the outlet of the vagina only admitted two fingers with difficulty, no pessary was inserted." Originally Donald made the denudation of the anterior vaginal wall with a wide diamond-shaped incision; later, W. E. Fothergill modified this by making it triangular in shape, with a wide base near the cervix, and by a circular incision around the cervix he combined the amputation of this organ with the anterior colporrhaphy. The result of this modification was the wider exposure of the tissues of the broad ligaments on each side of the cervix which permitted better and stronger apposition of these structures in front of the cervix.

ROLE OF THE CARDINAL LIGAMENTS IN UTERINE SUPPORT

Numerous anatomic studies have shown that the cardinal ligaments, also known as the ligaments of Mackenrodt, and the parametria play an important role in maintaining the uterus at the proper station in the pelvis. This may be proved in the performance of an abdominal panhysterectomy. If a tenaculum is placed on the uterine fundus and traction exerted upward, the uterus is not raised appreciably when the infundibulopelvic and round ligaments are cut, but practically always it can be raised to the abdominal incision or close to it when the cardinal ligaments are severed. Therefore, if the cardinal ligaments are well developed and

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not too attenuated, it is of considerable advantage to use them when operating for uterine prolapse. In proposing his operation for colporrhaphy Donald understood this principle and followed it.

W. F. Shaw¹ states that since the establishment of this operation by A. Donald in 1888, it was performed upon all patients, irrespective of age, parity and social standing, by the Manchester group of gynecologists and by the staff of St. Mary's Hospital, with the exception of two during the forty-five years that followed. In 549 cases reported by Shaw¹ in the paper that he read before the American Gynecological Society, Washington, D.C., May 8 to 10, 1933, he resorted to an abdominal fixation of the uterus in addition to the Manchester operation on only two patients in this series, and this because of the fact that practically no muscular tissue was found in the pelvic floor. Elsewhere in this same paper he reported having the records of 2,152 women upon whom he had operated by this method during a period of twenty-six years, with nine deaths or 0.37 per cent mortality.

The Manchester group of gynecologists who perform this operation, including amputation of the cervix during the child-bearing age, allow their patients to go into labor, if pregnancy ensues, and deliver themselves through the birth canal. They show a recurrence ranging from 18.5 to 25 per cent in this group of cases. I personally believe that if a patient has had an amputation of the cervix to an extensive degree, she should not be permitted to deliver herself through the pelvis because of the ever present danger of rupture of the uterus. For this reason I reserve the Manchester operation largely for patients who have reached or passed the menopause. The ages of the patients reported by Shaw in his paper ranged from sixteen to seventy-five years. The oldest patient upon whom I did this operation was eighty years.

In the preparation of the patient for a vaginal operation for prolapse it is essential that two preoperative complications be overcome. All patients should have cystoscopy performed and pyclograms, direct or indirect, should be obtained to determine the course and the condition of the ureters. If upper urinary tract pathologic disorder is observed, it should receive appropriate treatment. In the presence of cystitis it is imperative that it be healed before the operation is performed to prevent ascending

infection into the urinary tract and to eliminate one source of postoperative sepsis. At the present time it is not too difficult to heal a cystitis preoperatively because of the availability of the antibiotics and the sulfa group of drugs; attention to this will save a number of hospital days postoperatively. Secondly, the presence of decubitus ulcers on the cervix or on the vaginal walls may mitigate against the healing of the incisions and result in an operative failure. These ulcers may be readily healed by keeping the patient in bed to allow the prolapsed mass to remain within the vagina. This, together with a mild antiseptic and astringent douche daily, will lead to rapid healing.

TECHNIC OF OPERATION

The cervix is dilated and the uterine cavity is curetted. A transverse incision is made in the anterior vaginal wall where it joins the cervix. The superior edge of the incision is made taut with Allis forceps. The anterior vaginal wall is separated from the bladder with curved, sharply pointed scissors, the points of the scissors being directed against the anterior vaginal wall. (Fig. 1A.) The anterior vaginal wall is incised in the median line to a point $1\frac{1}{2}$ cm. below the urinary meatus. (Fig. 1B.) The bladder is separated from the vagina on each side, it is then raised by an Allis forceps and the uterovesical ligament is cut with scissors. Thus the bladder is freed from all of its attachments. (Fig. 1C.) By separating the bladder from the vagina and the cervix the bases of the broad ligaments (parametria) are exposed. Three sutures of No. 1 chromic catgut are introduced in the bases of the broad ligaments and left untied. (Fig. 2A.) The posterior vaginal wall is dissected from the cervix and the cervix is amputated below the lower suture in the broad ligaments. (Fig. 2B.) The posterior vaginal wall is attached to the cervical canal by three or four sutures of No. 1 chromic catgut. (Fig. 2C.) The sutures attaching the posterior vaginal wall to the cervical canal are tied and cut. Three sutures of No. 1 chromic catgut attach the lateral vaginal walls to the anterior lip of the cervix and these sutures are left untied. (Fig. 3A.) The three sutures in the broad ligaments are tied and cut. Interrupted sutures of No. 0 chromic catgut are placed in the musculofascial tissues on the sides of the bladder. (Fig. 3B.) The sutures in the musculo-

fascial tissues on the sides of the bladder are tied and cut. (Fig. 3c.) The cystocele has been corrected. The excess of the vaginal wall on each side is resected, care being taken not to remove too much, so that the edges of the

ending at the upper angle of the vaginal incision below the urinary meatus. (Fig. 4B.) The pelvic floor is repaired. Figure 4c shows the finished operation. Some of the sutures in the anterior vaginal wall show above the repaired perineum.

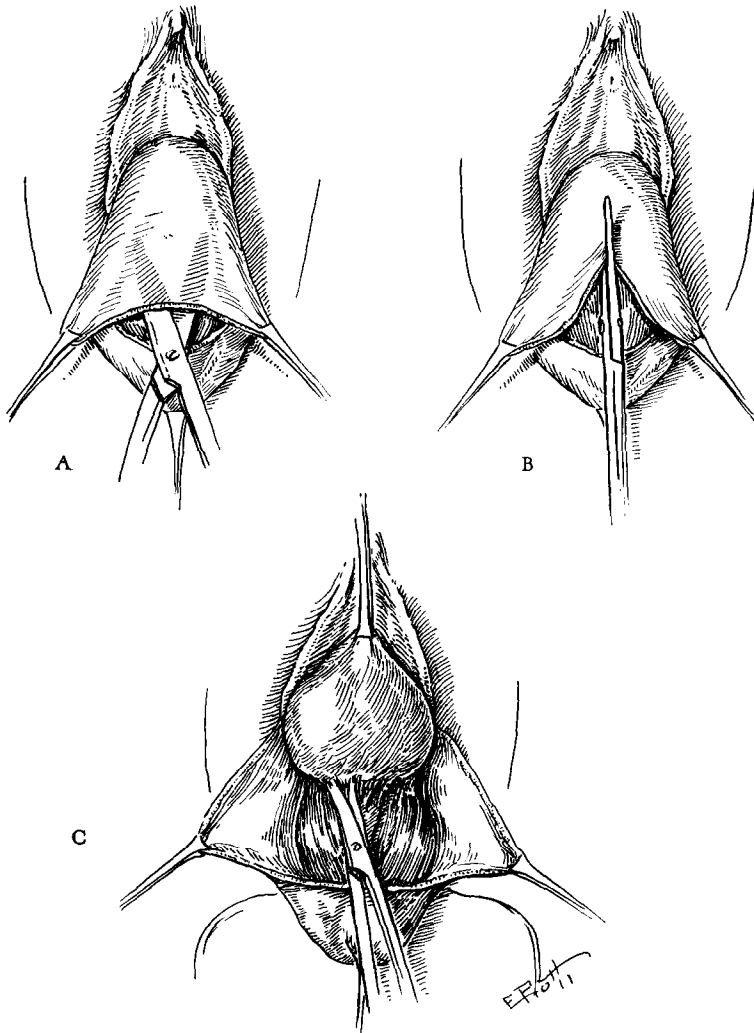


FIG. 1. A, a transverse incision is made in the anterior vaginal wall where it joins the cervix; the superior edge of the incision is made taut with Allis forceps; the anterior vaginal wall is separated from the bladder with curved sharply pointed uterine scissors; the points of the scissors are directed against the anterior vaginal wall. B, the anterior vaginal wall is incised in the median line to a point $1\frac{1}{2}$ cm. below the urinary meatus; C, the bladder has been separated from the vagina on each side; the bladder has been raised by an Allis forceps; the uteros vesical ligament is being cut.

vaginal wall will not be brought together under tension. (Fig. 4A.) The sutures approximating the vaginal wall to the anterior lip of the cervix are tied and cut. The anterior vaginal wall is closed by means of interrupted sutures of No. 0 chromic catgut, starting at the cervix and

STATISTICS

A study of my personal records shows that from January 1, 1933, to January 9, 1951, a period of approximately eighteen years, I have performed the Manchester operation on 126

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women. As previously stated, the oldest woman in this group was eighty years of age. There was no mortality in the series. The results were very satisfactory. The first operation performed was a failure. The technic described by W. E. Fothergill in Eden and Lockyer,² New System

me the lesson that the deep tissues should be approximated independently of the vaginal walls. In a few of the earlier cases there was a lax posterior fornix postoperatively but the results were considered to be satisfactory because there was no protrusion outside of the

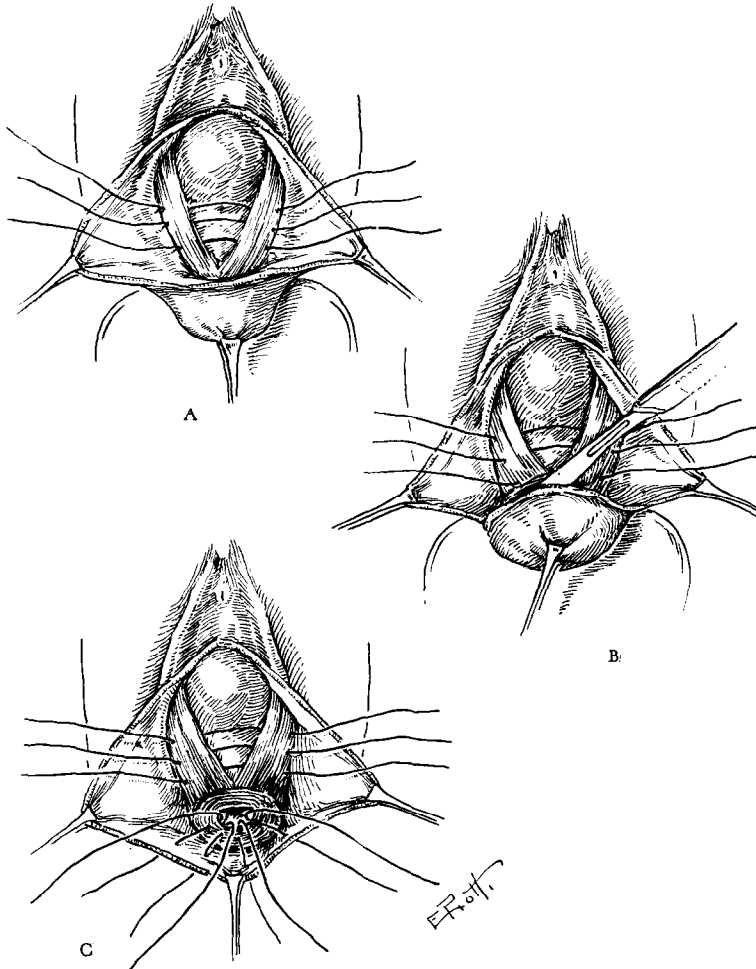


FIG. 2. A, the bladder has been separated from the vagina and cervix; the bases of the broad ligaments (parametria) have been exposed; three sutures of No. 1 chromic catgut have been introduced in the broad ligaments and left untied. B, the posterior vaginal wall has been dissected from the cervix; the cervix is amputated below the lower suture in the broad ligaments. C, the posterior vaginal wall is attached to the cervical canal by three or four sutures of No. 1 chromic catgut.

of Gynecology, was followed. The operation consisted of an anterior and a posterior colporrhaphy and amputation of the cervix, the deep structures were not approximated and the incisions were closed in a single layer with interrupted catgut sutures. The recurrence which occurred shortly afterwards was in the form of a medium-sized cystocele. This taught

vulva and the patient had no symptoms. It was discovered that by going higher on the posterior vaginal wall close to the cervix this lax condition of the posterior fornix could be avoided in practically all instances.

POSTOPERATIVE COMPLICATIONS

The postoperative complications which may occur consequent to the performance of the

Manchester operation are those which may be found after any extensive vaginal operation for uterine prolapse, namely, retention of urine, secondary hemorrhage from the cervix, occlusion of the cervix, vaginal adhesions and excessive narrowing of the vagina.

bladder drainage gantrisin is prescribed as a urinary antiseptic. After seven days when the catheter is removed, the patient usually voids normally; a few may have to be catheterized for a day or two. This method of constant bladder drainage seems to be better tolerated

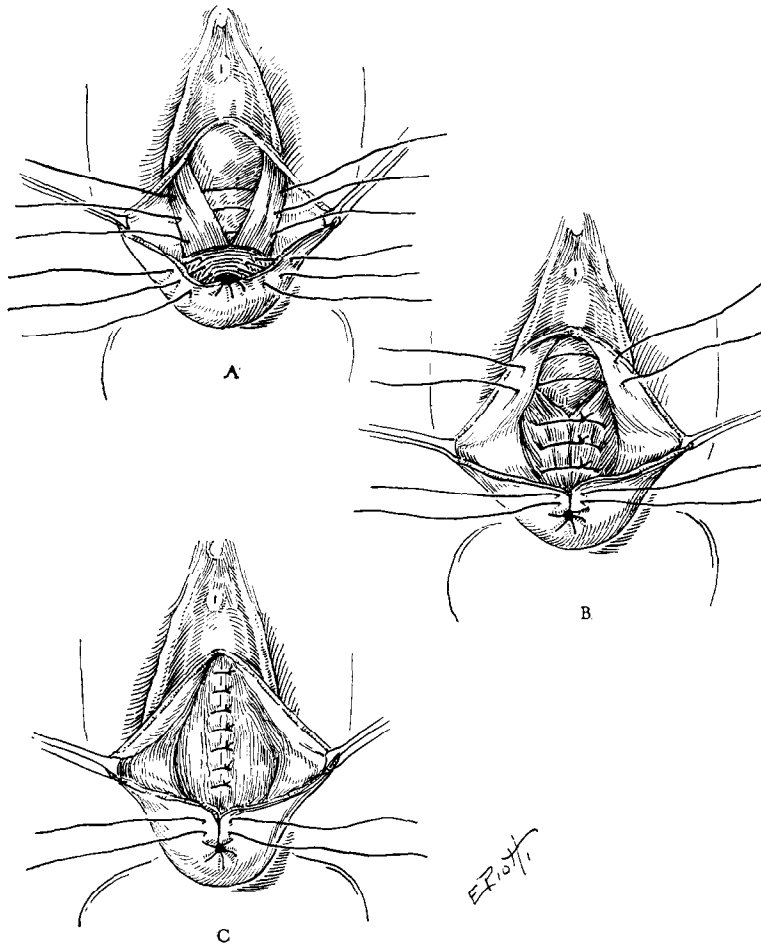


FIG. 3. A, the sutures attaching the posterior vaginal wall to the cervical canal have been tied and cut; three sutures of No. 1 chromic catgut attach the lateral vaginal walls to the anterior lip of the cervix, B, the three sutures in the broad ligaments have been tied and cut; interrupted sutures of No. 0 chromic catgut are being placed in the musculofascial tissues on the sides of the bladder; the lowest suture on the anterior lip of the cervix has been tied and cut, the two remaining sutures are held untied. C, the sutures in the musculofascial tissues on the sides of the bladder have been tied and cut, the cystocele has been corrected.

Retention of Urine. This can be avoided in practically all cases by following a routine procedure established on my service many years ago. At the end of the operation constant bladder drainage is established by a Malecot self-retaining catheter and this is maintained for seven days. During the period of constant

by the patient than does catheterization at frequent intervals.

Secondary Hemorrhage from the Cervix. In my experience this has occurred but rarely. It is usually due to the premature absorption of the catgut sutures which attach the vaginal mucosa to the cervical canal in reconstructing

the cervix. The use of No. 1 forty-day chromic catgut for these sutures has almost entirely eliminated these secondary hemorrhages which usually occur around the tenth postoperative day.

Vaginal Adhesions. In my experience this has been a rare complication. It occurs when the vaginal flaps have been too widely resected, thus bringing the edges together under tension, causing sloughing of the edges which leads to

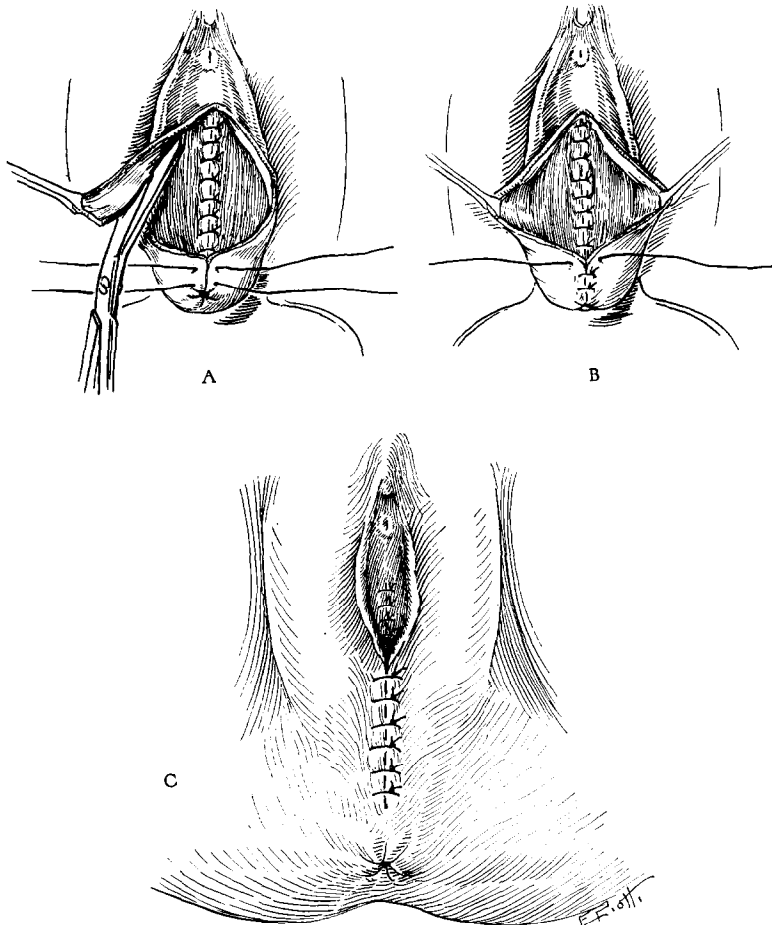


FIG. 4. A, the excess of the anterior vaginal wall on each side is resected. B, the two remaining sutures approximating the vaginal wall to the cervix are being tied and cut; the anterior vaginal wall is closed by interrupted sutures of No. 0 chromic catgut, starting at the cervix and ending at the upper angle of the vaginal incision below the urinary meatus. C, the pelvic floor has been repaired; some of the sutures in the anterior vaginal wall show above the repaired perineum.

Occlusion of the Cervix. This troublesome complication may be prevented by a thorough dilatation of the cervix by means of graduated dilators before reconstructing this organ. If at the end of the operation on the cervix there is any doubt about its patency or about a potential occlusion later, the introduction of a glass or hard rubber stem pessary, to be worn for ten or twelve days during the convalescence, will act as a prophylactic measure against this condition.

adhesions. This complication may be avoided by resecting the vaginal flaps so that they will come together without tension or strangulation. It is for this reason that I prefer to resect the flaps after approximation of the deep tissues when I perform colporrhaphy, anterior or posterior, because by so doing I get a better idea of how much should be removed. Following vaginal plastic operations all patients are examined on the twelfth postoperative day; the examining finger is well lubricated with Irish

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moss jelly; if adhesions are found at that time, they are thin and superficial and may be broken up easily. Packing the vagina lightly with vaseline gauze for forty-eight hours usually prevents their recurrence. If this condition occurs, the patient should be examined weekly during the first four to six weeks postoperatively.

Excessive Narrowing of the Vagina. The success of vaginal plastic operations depends upon the knowledge, acquired only by experience, of how much of the flaps should be resected. If the resection is too extensive, it will result in the narrowing of the vagina. As a general principle it is always better to leave the vaginal walls slightly lax and not too tight. It is the deep structures by their approximation that furnish the support; the resected vaginal walls merely act as a covering for these structures. A properly resected vaginal wall will leave a smooth elastic vagina; a vaginal wall that has been resected too extensively will leave a tense, scarred and painful surface.

ANESTHESIA

All forms of anesthesia from general to local infiltration have been used in this group of patients. My preference, however, is spinal anesthesia supplemented with intravenous sodium pentothal® anesthesia (1 gm. of sodium pentothal® in 500 cc. of normal saline solution) given slowly by the drop method. By this practice the relaxation of the spinal anesthesia is obtained, together with the benefit of a light slumber, an ideal combination in the nervous patient.

CONCLUSIONS

1. The Manchester (Donald-Fothergill-Shaw) operation is an excellent procedure in the treatment of uterine prolapse.
2. The operation, while performed on all patients irrespective of age, parity and social standing by the Manchester group of gynecologists, finds its greatest field of usefulness in the management of prolapse in those who have passed the menopause.
3. The cervix, whenever elongated, lacerated or irritated, is amputated in connection with this operation.
4. A high posterior colporrhaphy and perineorrhaphy are complements to this method.
5. The technic of this operation as I perform it is illustrated by means of artist's drawings.
6. A personal series of 126 women operated upon by this procedure without mortality is reported.

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