# Out-Come Of Manchester/ Fothergill Repair

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**Abstract**

*During the last twelve years more than 100 cases of Manchester repair have been performed with a success rate of 80%. But here a view of only 50 cases of Manchester repair is presented, performed during the years, 1985-89, because these cases were followed regularly and thoroughly.*

*The results of these cases are very encouraging specially regarding relief of symptoms, subsequent conception and parturition and very low recurrence rate. Manchester repair is not liked by many young Gynaecologists because of certain disadvantages and difficult technique. Therefore, it is not done so frequently now a days, as it was done previously; but I have found it very advantageous in selected cases.*

## Basic Principle of Manchester Repair

The primary features of Manchester operation consist of anterior colporrhaphy, amputation of the cervix, shortening and stitching of Mackenrodt's ligaments to the front of the cervix and colpoperineorrhaphy. A dilatation and curettage is done preceding the operation to detect unsuspected uterine disease and facilitate approximation of the vaginal mucosa to the amputated cervix.

The whole principle depends on the preservation of the uterus so that its main supports, namely Mackenrodt's ligaments, can be shortened

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and stitched to the front of the cervix, with the result that besides keeping the uterus in the upper part of the vagina, the cervix is kept anteverted and the body of the uterus anteflexed.

**History of Manchester/Fothergill Repair**

Archibald Donald of Manchester, England in 1888 was the first to combine the components of this operation for the treatment of genital prolopse. It is true that parts of the operation had been used separately before Donald combined them into a single procedure. Donald performed his first three cases in 1888 by this combined technique of amputation of the cervix, with anterior and posterior colporrhaphy, with special emphasis upon the suturing of deep tissues as the most important step in the operation.

In Manchester city there was a high percentage of female labour, hence different degree of prolapse was very common among the community. Unfortunately Donald did little writing, so this technique could not get popularity throughout the world.

The popularity and usefulness of this operation was spread by Fothergill, a voluble student of Donald. In 1907 Fothergill made some modification in the Manchester repair; in this way Manchester Gynaecologists began to speak of Fothergill's modification of Donald's operation and soon the name of the original operator was displaced by one who had merely modified the operation.

Donald's denudation on the anterior vaginal wall was diamond shaped. Fothergill made it in a triangular form, apex below the urinary meatus and base near the cervix by a circular incision around the cervix; he combined the amputation of cervix with anterior colporrhaphy. This produced a wide explosure of the bases of the broad ligaments on each side of the cervix permitting better and stronger apposition of these structures in front of the cervix.

Since Manchester, England, was the location of the women's clinic where these Gynaecologists worked, the name of this city had been advocated as a name for the operation by Sir William Shaw in 1933.

William Shaw has described the operative technique in detail in American Journal of Obstetrics and Gynaecology in 1933, and since then the same basic steps of operation are followed throughout the world.

**Advantages**

Following are the advantages of Manchester repair:

1. Being an entirely extraperitioneal procedure, there is no danger of intraperitoneal infection and postoperative complications are rare than in vaginal hysterectomy. Hence it is easier, shorter and safer than vaginal hysterectomy.

2. In young women during child bearing age, Manchester repair is the treatment of choice. One should consider the psychological aspects of the presence or absence of uterus in young women. In women after menopause, the uterus is of little importance; but in younger women, the question merits attention, even if further pregnancies are not required.

We do not fully realize the impact on the body and mind, of removal of the uterus. A sense of frustration, restlessness, agitation and preoccupation with depressive thoughts may result and vagaries of human nature are such that another child may be wanted at a later date.

3. In this technique amputation of the cervix seems to give complete protection against future cervical malignancy.

4. William Shaw in his paper, published in 1954 in American Journal of Obstetrics and Gynaecology has written, "no operation has rewarded me so well and so consistently as has the Manchester operation for genital prolapse. No conservative operation for any condition can give a hundred percent of cure, but in my experience this operation comes as near perfection as any treatment for any condition to which human flesh is heir".

5. Moreover it is proved that vaginal function is satisfactory after Manchester repair.

**Disadvantages**

1. In recent years there has been a lot of criticism about amputation of the cervix in young women, if more child bearing is anticipated, because the amputated cervix predisposes to sterility, abortion, prematurity and cervical dystocia. But William Shaw has not reported a single case of dystocia in his series.

2. Abortion and premature labours are more frequently observed in cases of high amputation. To encounter these drawbacks it is suggested to remove a smaller possible piece of cervix.

3. Cervical amputation often results in marked stenosis causing severe dysparunia.

4. Moreover a large heavy retroverted uterus will not relieve patient's symptoms if retained.

5. After Manchester repair uterus remains a potential source of neoplasm, benign or malignant, both in young and old women. Therefore, the operation should always be preceded by a curettage.

6. It should not be done on a patient with a history of functional bleeding.

**Review of the Cases**

Here a review of 50 cases performed during the years 1985-89 (both inclusive) is presented. All these cases were performed in Gynae "A" unit, Department of Gynaecology and Obstetrics, Postgraduate Medical Institute, Lady Reading Hospital, Peshawar.

Incidence of uterovaginal prolapse is quite common in our province specially in communities where large families are traditional, and they deliver their children at home either unattended or by mother-in-laws.

Moreover these housewives do not get proper rest, nutrition and exercise during puerpurium and within a few days after delivery they start doing heavy work. Other causes of genital prolapse are repeated deliveries of big babies, instrumental deliveries, unattended and unhealed cervical, vaginal and perineal tears. While aggravating factors are obesity, ascites, chronic bronchitis and huge pelvic tumours.

Following are the common types of uterovaginal prolapse:-

1. First degree prolapse. Here the cervix descends to the level of ischial spine, with cystocele and rectocele.

2. In second degree prolapse the cervix reaches up to the introitus, with cystocele and rectocele.

3. In third degree prolapse the cervix comes out of the vulva, with cystocele and rectocele.

4. In fourth degree prolapse the whole uterus is palpable outside the vulva, with cystocele and rectocele.

**Material**

A detailed present, past and obstetric history of these patients was recorded along with their chief complaints and pelvic examination findings. Table-I indicates the number of Fothergill operations performed each year.

**TABLE - I**

**No. OF OPERATIONS PERFORMED EACH YEAR**

| Year | Total No. of Major Operations | Manchester Repair | Percentage |
|---|---|---|---|
| 1985 | 624 | 10 | 1.6% |
| 1986 | 733 | 12 | 1.6% |
| 1987 | 896 | 10 | 1.1% |
| 1988 | 828 | 7 | 0.8% |
| 1989 | 1032 | 11 | 1.06% |

**TABLE - II**

**SYMPTOMATOLOGY OF PATIENTS**

| Symptoms | No. of Patients | Percentage |
|---|---|---|
| Pressure perineum | 39 | 78% |
| Feeling of mass | 12 | 24% |
| Dysuria | 13 | 26% |
| Freuency of micturition | 15 | 30% |
| Stress incontinance | 6 | 12% |
| Backache | 25 | 50% |
| Dysparunia | 4 | 8% |
| Difficulty in defecation | 2 | 4% |

The symptomatology of the patients to be operated for Manchester repair was carefully evaluated from the clinical record, as shown in Table-II. The most constant significant symptom was the presence of a bulging mass at the introitus or sensation of something coming out. Majority of such patients were quite young and started having such complaints immediately after their first delivery, specially those women who delivered their first child at home.

Urinary symptoms such as frequency, dysuria and stress incontinence were also very common symptoms. On pelvic examination majority of the patients had the triad of cystocele, rectoele and cervical/uterine descent of first, second or third degree. Few patients had local infection in the form of vaginitis, cervicitis, cervical erosion and Nabothian follicles.

Table-III shows different degrees of uterovaginal prolapse in this series.

**TABLE - III**
**DEGREE OF UTEROVAGINAL PROLAPSE**

| Degree Prolapse | No. of Patients | Percentage |
|---|---|---|
| First | 11 | 22% |
| Second | 31 | 62% |
| Third | 6 | 12% |
| Fourth | 2 | 4% |

**Selection of Patients**

All the cases selected for Manchester repair had the following criteria:-

1. Young women having only one or two children with first or second degree uterovaginal prolapse.

2. Patients having long and hypertrophied cervix.

3. Women having first, second or third degree uterovaginal prolapse.

4. Those elderly women who refused removal of uterus.

5. Those elderly women who desired that functional capacity of the vagina should be maintained.

**Preoperative Preparation**

A detailed counselling of both husband and wife was done prior to operation. Anatomical defect was explained to them as well as the type of operation.

One should be very cautious in promising improvement by repair because in certain cases the symptoms may aggravate after repair as in stress incontinence.

General condition of the patients was fully assessed. Before operation any systemic disease, if present, was treated first; physician and anaesthetist opinion was taken for the high risk patients.

Routine preoperative investigations including blood complete examination, urine complete examination, BT, CT, blood urea and sugar were done; X-ray chest and E.C.G. were done for those patients who were above 40 years of age and had chest problem; IVP and KUB were done for those patients suffering from chronic pyelitis and severe urinary symptoms.

As a principle, urinary and vaginal infection should be controlled before surgery, and cancer should be excluded by cytology. Anaemia, hormone imbalance and vitamin deficiencies which are very common in our community should be recognised and treated before and after operation to promote better healing. As long as these rules are followed, good operation results will be high, mortality will remain low and death will be avoided.

All these cases were performed under general anaesthesia and that operative procedure was followed which is universally accepted.

The average age at the time of operation was 30 years. Table-IV shows age group at the time of operation. The greatest number of patients was between 20-30 years. Between 30-40 years there were 17 cases and between 40-50 years there were 2 cases. The number of patients in relation to parity at the time of operation is shown in Table-V; the greatest number operated on were women who had 2-3 children.

**TABLE - IV**

**AGE AT TIME OF OPERATION**

| Age in Years | No. of Patients | Percentage |
|---|---|---|
| 21 - 30 | 31 | 62% |
| 31 - 40 | 17 | 34% |
| 41 - 50 | 2 | 4% |
| 51 - 60 | None | 0% |

**TABLE - V**

**PARITY AT TIME OF OPERATION**

| No. of Children | No. of Women | Percentage |
|---|---|---|
| 2 | 16 | 32% |
| 3 | 18 | 36% |
| 4 | 8 | 16% |
| 5 | 6 | 12% |
| More than 5 | 2 | 4% |

**Operative Complications**

The average duration of operation was sixty minutes and the average blood loss was more than the amount lost during vaginal hysterectomy. Therefore, blood transfusion was given to every patient during operation. No death occurred during or after operation.

Major surgical complication such as bowel, bladder or visceral or ureteric injury was not encountered during operation.

**Postoperative Care**

All patients were allowed up on the day after operation. Chest physiotherapy was given as routine. Vaginal pack and Folley's self-retaining catheter was kept for 36 hours in all patients. Patients were allowed fluid diet after 12 hours and solid diet after 24 hours. Kleen enema was given as routine on third day. The average stay in hospital was six days and maximum ten days.

**Postoperative follow up**

All these cases were followed regularly and thoroughly. These patients were asked to come for first follow up 4 weeks after being discharged from the hospital and for second visit, four weeks after the first visit.

At each follow up visit these patients were interviewed and examined; and effort was made to ascertain the symptoms which were still present and to compare these with symptoms present before the operation: hence failure rate was calculated. Patients chief complaints were noted, pelvic examination performed to check wound healing and to exclude any recurrence or failure of operation.

Minor and major postoperative problems in this series are shown in Table-VI.

**Postoperative Complications**

Majority of patients suffered from mild to moderate pyrexia and vaginal bleeding. These patients improved with broad sepectrum antibiotics and vaginal packing.

**Haemorrhage**

The most frequent, postoperative complication was late secondary haemorrhage. This occurred in three patients. The earliest occurred on fifth and sixth day and the latest on 19th day The later patient required readmission to hospital, examination under anaesthesia revealed some disruption of the upper end of the anterior vaginal suture line and cervical stump. Hence resutureing was performed. In other two cases of secondary haemorrhage, perineal wash was down; vaginal packing and blood transfusion was the treatment of choice.

**TABLE - VI**

**POSTOPERATIVE COMPLICATIONS**

| Complaints | No. of Patients | Percentage |
|---|---|---|
| Pyrexia | 10 | 20% |
| Urinary tract infection | 5 | 10% |
| Respiratory tract infection | 3 | 6% |
| Wound sepsis | 3 | 6% |
| Deep vein thrombosis | None | 0% |
| Retention urine | 2 | 4% |
| Secondary haemorrhage | 3 | 6% |
| Stress incontinence | 5 | 10% |
| Profuse and persistant vaginal discharge | 12 | 24% |
| Hematoma formation | 4 | 8% |

**Retention of Urine**

Another common postoperative complication was inability to void urine after removal of retention catheter. This condition was treated by keeping Folley's catheter for another one week and also by bladder drill.

**Infection**

Five patients had urinary tract infection diagnosed and confirmed by urine examination and culture. All such cases were treated by urinary antiseptic and appropriate antibiotics.

Three patients had vaginal wound sepsis diagnosed by high vaginal swab and treated by antibiotics according to sensitivity report.

**Vaginal Discharge**

Persistent and profuse vaginal discharge was a common complaint postoperatively. This was due to local infection, formation of granulation tissue, hematoma formation and delayed healing by secondary tension. The vagina is often inhabited by pathogenic bacteria and first intention healing does not always take place.

**Stress Incontinence**

Five cases presented with stress incontinence. Four were treated by pelvic exercises, clearance of local infection and UTI. But in one case Kelley's stitch was applied for her persistent complaint of stress incontinence and she was relieved.

**Urge Incontinence and Frequency of Micturition**

Many patients had these problems immediately after operation but later on they were relieved. A repair may improve these symptoms if they are due to chronic cervicitis or urinary stasis.

**Bowel Symptoms**

No patient complained of bowel symptoms after operation except constipation which was a usual complaint.

**Dysparunia**

10 % of the patients complained of severe dysparunia on their second follow-up visit, but they got relieved gradually when local infection was cleared by systemic and local antibiotic. In all those patients, who complained of occasional or slight dysparunia, no anatomical narrowing or shortening of vagina could be demonstrated except in one patient who had a constriction ring in the middle third of vagina; division of the constriction ring under general anaesthesia followed by repeated dilatation of vagina cured her complaint.

**Menstrual Disturbances**

A few patients complained of menstrual disturbance as shown in Table-VII. In two patients dilatation of the cervix and curettage under general anaesthesia was done and these patients later on improved.

**TABLE - VII**

**MENSTRUAL DISTURBANCES**

| Problem | No. of patients | Percentage |
|---|---|---|
| Oligomennorhoea | 3 | 6% |
| Frequent spotting | 2 | 4% |
| Post-coital bleeding | 3 | 6% |
| Dysmennorhoea | 5 | 10% |
| No. menstrual problem | 37 | 74% |

**Mortality**

Since prolapse is not a fatal condition so operative repair should have a very low mortality. There was no death during operation or in the postoperative period.

**Results**

Symptomatic relief is most important following any operation specially in a condition like uterovaginal prolapse. The results two years after operation were better than after one year, suggesting that the symptoms gradually subside.

In this series 40 women were cured completely, while in 8 women the symptoms were not relieved completely. In 2 women the results were unsatisfactory. These results are shown in Table-VII and VIII.

**Marital Relations**

The pleasure of sexual intercourse was unchanged by the operation in 33 cases and was not so satisfactory in 4 cases. No improvement was noted in two cases and eleven cases had slight discomfort.

**TABLE - VIII**

**MARITAL RELATIONS AFTER OPERATION**

| Symptoms | No. of patients | Percentage |
|---|---|---|
| Operation made no improvement | 2 | 4% |
| Deap seated dysparunia | 4 | 8% |
| Slight discomfort | 11 | 22% |

**TABLE - IX**

**CONDITION ON EXAMINATION AFTER OPERATION**

| On pelvic examination | No. of patients | Percentage |
|---|---|---|
| No abnormality seen | 44 | 88% |
| Small cystocele | 3 | 6% |
| Rectocele | 2 | 4% |
| Narrow vagina | 1 | 2% |

**Pregnancy and Labour**

Forty two patients conceived after operation. The details of pregnancy and labour are shown in Table-X.

**TABLE - X**
**NO. OF PATIENTS WHO CONCEIVED AFTER REPAIR AND THEIR END-RESULT**

| Pregnancy and labour | | No. of patients | Percentage |
|---|---|---|---|
| Conception | | 42 | 84.0% |
| Outcome of Pregnancy | Abortion | 3 | 7.1% |
| | Premature labour | 2 | 4.7% |
| | Dystocia | 2 | 4.7% |
| | Instrumental delivery | 3 | 7.1% |
| | Normal term delivery | 30 | 71.0% |
| | Lower segment caesarean section | 2 | 4.7 |

Almost 42 cases conceived after operation, 6 women conceived within six months after operation, rest of the cases conceived one year after operation.

Out of these 42 patients, two women aborted in their first conception preceding repair operation, but later on second and third conception ended up in normal vaginal delivery.

Another patient had one normal vaginal delivery after repair operation but her second conception ended up in abortion at 10th week; this indicates that abortion was not due to cervical incompetence as it is usually thought.

Two patients went into premature labour: one at 32nd week and other at 34th week. Baby of the first case expired in nursery on third day; while baby of the second case survived. Bilateral cervical tears occurred in one case who had precipitate labour. Duration of labour in all these cases was not more than 12 hours.

Two cases developed cervical dystocia at 5 cm dilatation, both these cases ended up in lower segment caesarean section. Out-let forceps were applied in three cases and rest of the patients had normal vaginal delivery. Elective episiotomy was given in all cases except one patient who delivered at home and had very bad vaginal, perineal and para-urethral tears, which were sutured in hospital.

**Recurrence**

To avoid recurrence of prolapse each patient was given special instructions to avoid heavy work, chest infection and conception for at least one year.

Recurrence was noted in those women whose postoperative period was complicated by sepsis, wound dehiscence, haemorrhage, or those women who conceived within 3-6 months after operation or who delivered at home.

In this series two patients had fourth degree of uterovaginal prolapse. They were not good candidate for Fothergill repair, but they insisted to retain their uteri, because they wanted more children specially male child, although both of them had 3-4 children respectively. Both these women showed recurrence later on.

One patient had a recurrence of cystocele after a subsequent confinement at home, resulting in very bad vaginal and perineal tears which were sutured in hospital on third post-nantal day.

The amputated cervix and endometrial curettings were always submitted for histopathological examination. The usual reports were chronic cervicitis, chronic endometritis or Nabothian cyst etc in all patients except one case in which pre-invasive carcinoma was detected. Uptil three years after operation she was very regularly and thoroughly followed but there were no signs or symptoms of carcinoma cervix. She conceived one year after operation; upto report she had delivered two children. But since last one year she has not turned up for check up.

**Conclusions**

1. This is not a large series of patients but it has the advantage that it represents the work of a single operator using a standard technique with very encouraging results.

2. In this series postoperative complications were minimal with no mortality and a recurrence rate of 4%.

3. In may opinion, Manchester/Fothergill repair is the best currently used conservative vaginal operation for certain degrees of uterovaginal prolapse.

4. The choice of operation for correction of genital prolapse in young and elderly patients should be based upon a through evaluation of age, parity, symptomatology, patient's physical and functional state and the degree of prolapse.

5. From the view point of later pregnancies, the Fothergill operation offers definite and appreciable advantages over other techniques.

6. No conservative operation for any condition can give a hundred percent of cure, but in our experience this operation comes as near perfection as any treatment for any condition.

Postoperative complications were minimal due to adoption of a practice of early ambulation in all cases.

7. Manchester repair is an excellent operation in selected cases but it does not fit the need in all cases of prolapse.

8. Manchester operation has no place in the treatment of complete procidentia.

9. The operation does not preclude future pregnancy and labour.

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