

OPERATIONS FOR PROCIDENTIA UTERI

by

K. N. KULSHRESHTHA*, M.D. (Bom.), F.R.C.S. (Edin.)

In 1944 I began employing a modification of the Mayo technique for cases of extensive degrees of prolapse of the uterus. Before that I employed the standard Mayo technique for all procidentia cases. Out of the 15 cases treated by the Mayo technique, 3 cases had already recurred by 1944 and 2 more cases were seen to have partially recurred at a later date. Of the 26 cases operated by my modified technique between 1944 and 1947 there was no case of recurrence. Even after that I have not seen any case of recurrence, but it is possible that out of the latter group of cases a stray case might have gone elsewhere for a recurrence.

In this part of India an extensive degree of prolapse of the uterus is not a common condition. For the milder degrees of prolapse I have always employed other techniques. Anterior and posterior colporrhaphy with perineorrhaphy is indicated in those cases where the child-bearing function must be preserved. In a case with a greater degree of prolapse, with an elongation of the cervix, Manchester operation is indicated. In this operation the child-bearing function is preserved and only the excess of the length of the cervix is removed. When there is a large cystocele with a moderate degree of true descent of the uterus, Watkins transposition operation is

most satisfactory but here the child-bearing function has to be sacrificed. If there is an elongation of the cervix it should be dealt with at the same time. I do not consider the Manchester or the Watkins operation suitable for dealing with cases of procidentia uteri. In the Clinics where they have been used with success in such cases it is due to a very high amputation of the cervix that is practised as a part of these operations. Te Linde says about Watkins operation, "We have routinely amputated the cervix even though it has not appeared elongated." High amputation of the cervix may give good results with Watkins operation in those cases where there is only a moderate degree of real descent of the uterus but it will not be effective in many cases of procidentia uteri. When a very high amputation of the cervix is practised as a part of the Manchester operation it is definitely objectionable. The great attraction of the Manchester operation is the preservation of the child-bearing function. In any case fundectomy or cornuectomy is not done as a part of this operation. Under these conditions to remove the greater part of the cervix is to subject the patient to the risk of repeated premature deliveries or even miscarriages.

Technique

1. The first steps of this operation are the same as those of the standard

*Gynaecologist & Obstetrician, Maharani Shantadevi Nursing Home, Baroda.

Mayo technique. A circular incision is made completely around the cervix at a point just below the lowest limits of the urinary bladder. At the commencement anteriorly it is necessary to keep closely to the cervix and lift off the whole thickness of the vaginal mucosa with the bladder from the cervix. Once the loose connective tissue between the cervix and the bladder is reached the separation becomes easier and at that stage there is no longer any need to dissect close to the cervix. The bladder is gently wiped off the cervix with the finger in the line of least resistance and thus the utero-vesical fold of peritoneum is reached, identified, and freely opened transversely. Similarly the pouch of Douglas is opened posteriorly.

2. Fundus of the uterus is then delivered through the anterior opening. The whole of the uterus thus lies exposed in the field of the operation, the cervix being held by a vulsellum and the fundus of the uterus by a figure-of-eight loop of traction suture.

3. Incisions are then made on each side of the uterus beginning from the fundus and going down to the level of the supra-vaginal part of the cervix (Fig. 1). These incisions leave a slice of the muscular wall of the uterus on each side attached to the broad ligament. The greater part of the body of the uterus and of the supra-vaginal part of the cervix and the whole of the portio vaginalis is removed together with the whole of the endometrium. The incisions proceed gradually from above downwards, first on one side and then on the other, and any bleeding encountered is controlled with figure-of-eight sutures.

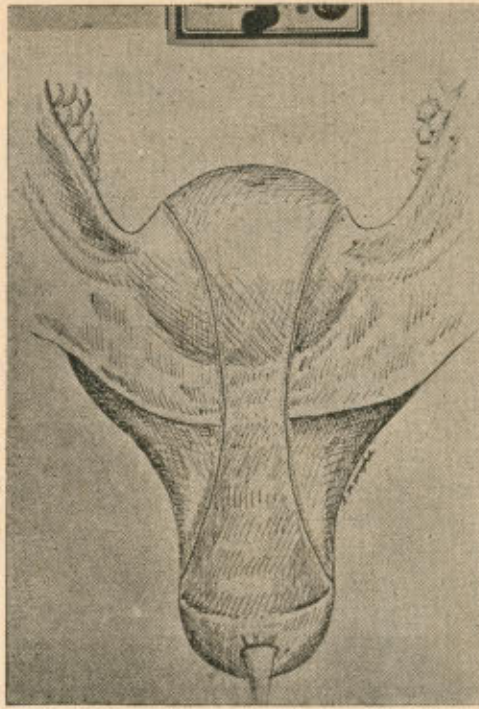


Fig. 1—The lines of incision along the sides of the uterus are shown.

4. The lower part of the slice of uterine muscle on either side is now folded over so that the part derived from the sides of the supra-vaginal part of the cervix is raised to the level of the part derived from the fundus of the uterus and is joined to it. Two sutures are used for this on either side (Fig. 2). The sutures enter from the posterior aspect of the cut surfaces and thus evert the cut edges while folding them over. As a result of this step, the part of the muscular strip on each side which was in the middle becomes the lowest part of the lateral mass formed by the folding over of the strips (Fig. 3).

5. The two lateral masses are now joined together. The first suture unites the part lying lowest and it

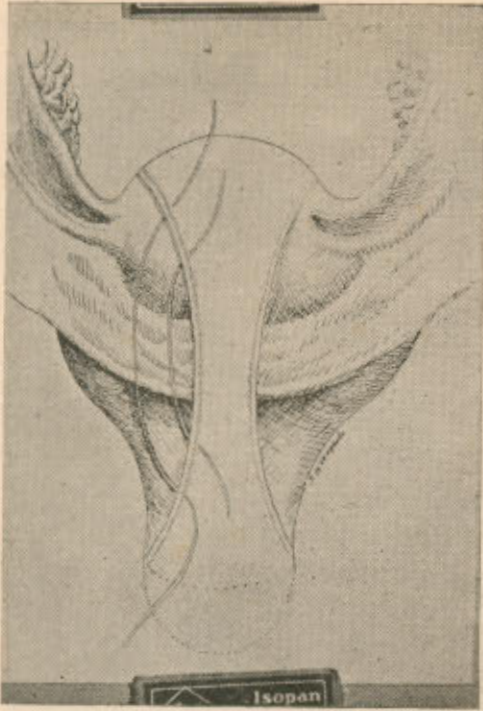


Fig. 2—The position of the sutures used for folding over the strips of muscular tissue from the sides of the uterus is indicated.

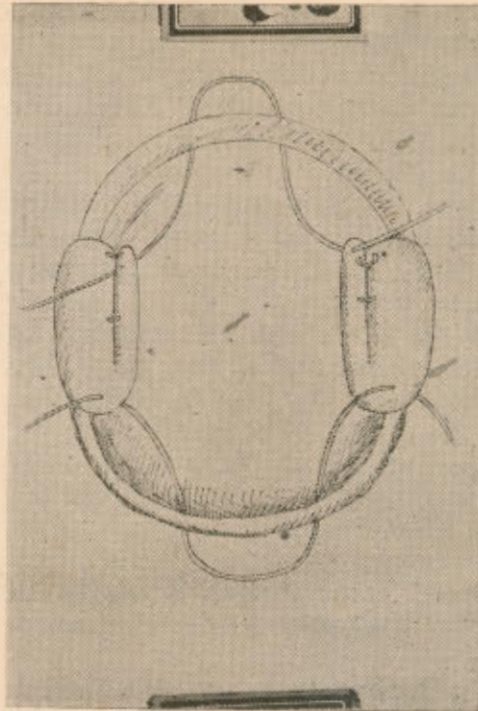


Fig. 3—Indicates the way in which the cut edges of the utero-vesical peritoneal pouch and of the Douglas' pouch are joined to the mass formed from the lateral strips of uterine muscular tissue that have already been folded over and are to be joined together.

picks up the cut edge of the pouch of Douglas posteriorly. Two more sutures are used to join the two sides firmly together. Next the cut edge of the uterovesical fold of peritoneum is fixed to the part of the joint mass nearest the pubic arch (Fig. 3).

6. The lateral strips of muscular tissue derived from the sides of the uterus which have been folded over and joined together now form an elongated firm central mass. This mass is a little less in length and in breadth than the normal uterus. It is now fixed under the pubic arch with a suture on either side, taking care that enough space is left for the urethra in the middle to avoid any undue pressure on it.

7. After this, anterior colporrhaphy is done removing excess of the mucous membrane of the anterior vaginal wall. One or two sutures fix the vault of the vagina to the most posterior part of the mass formed by the uterine muscular strips. Posterior colporrhaphy and perineorrhaphy are then done. The first suture in the levatores ani is placed at such a level as to leave the introitus admitting two fingers. The vagina is not at all shortened after this operation. The tissues derived from the sides of the uterus which now form a single central mass of tissue have been transposed between the bladder and the vagina. The mass

then lies close to the vagina and above it, extending from the pubic arch to which it is fixed backwards parallel to the vagina towards the hollow of the sacrum (Fig. 4).



Fig. 4—Diagrammatic sagittal section of the pelvis showing the position of the muscular mass formed from the strips of muscular tissue from the sides of the uterus which have been folded over, joined together and fixed under the pubic arch. It is clearly seen here that the limb of intra-abdominal pressure directed towards the pelvic outlet meets with the resistance of this mass.

Comment

The most important element in a prolapse case that has to be carefully assessed for the proper treatment of prolapse by operation is the degree of true descent of the uterus that is present in the case. In some cases we see a cystocele with or without an elongation of the cervix. In some of those cases the cystocele is very large and there is an appearance of a marked degree of prolapse due to an elongation of the cervix whereas in reality very little true descent of the uterus is present. Here the primary trauma which caused the prolapse is the devitalisation of the tissues lying between the bladder and the vagina during a prolonged or difficult labour. The cystocele that results due to the

weakness caused by this devitalisation begins exerting a slow but steady traction on the cervix and this traction is markedly increased on straining or coughing. If the supports of the uterus constituted by the pelvic fascia and especially by the parts of the fascia named the utero-sacral and the cardinal ligaments resist this traction, an elongation of the cervix results. If they fail to resist the traction due to some inherent weakness or as the result of over-stretching in the first stage of labour caused by the premature and uncalled for bearing down efforts by the woman in labour, a true descent of the uterus results varying in degree with the degree of weakness of the supporting structures. Any gynaecologist can recall cases of complete tears of the perineum of long standing with little or no true descent of the uterus. In some of these cases there is also present retroversion of the uterus which is assigned by some gynaecologists an important role in the causation of prolapse of the uterus. In contrast to such cases one sees cases of procidentia uteri in nulliparae. The most important etiological factor in the causation of procidentia uteri is the weakness of the pelvic fascia and particularly of the parts of this fascia which have been named the cardinal and the utero-sacral ligaments. Berglas and Rubin say, "the assumption that the pelvic connective tissue has the function of a supportive structure for the pelvic organs has been based on the supposed presence of band-like condensations of pelvic connective tissue, their fixation to the pelvic walls and their attachment to the pelvic viscera by sheath-like condensations called

visceral fasciae." They were able to demonstrate that the structures named the utero-sacral, the cardinal and the pubo-vesico-uterine ligaments consist mainly of plexuses of blood vessels embedded in loose areolar connective tissue and that there was no evidence of any attachment of this tissue to the pelvic walls. In spite of these observations there can be no dispute regarding the fact that the pelvic organs are embedded in and are surrounded by pelvic connective tissue which fills up all the space between them and the lateral walls of the pelvis at the level of the supra-vaginal part of the cervix and between the peritoneal floor of the pelvis and the pelvic diaphragm constituted by the muscles of the pelvic floor. Whatever its histological structure this tissue undoubtedly offers resistance to the descent of the pelvic organs when intra-abdominal pressure increases. The descent of the uterus that occurs in nulliparae as a result of severe coughing for a long period is due to the failure or the overcoming of this resistance. Mengert demonstrated in his experiments upon the fresh cadaver that the resistance offered to traction applied to the cervix was mainly by the lateral endopelvic ligaments and that in this context the role of the muscular supports was negligible. Any operation for the treatment of procidentia uteri that depends on the inherently weak and over-stretched structures is likely to prove unsatisfactory. Intra-abdominal pressure in the region of the pelvis is directed partly downwards towards the pelvic outlet and partly towards the hollow of the sacrum. It is the limb of this force that is directed downwards to-

wards the pelvic outlet that has to be met by a resistance from firm tissues with an assured blood supply and these tissues can act effectively only if they are firmly anchored. The satisfactory results of Watkins operation in suitable cases are due to the interposition of a firm body—the uterus—lying transversely in the line of the force of intra-abdominal pressure directed to the pelvic outlet and the uterus is firmly anchored to an unyielding structure—the pubic arch (Fig. 5). The reason why Watkins



Fig. 5—Diagrammatic sagittal section of the pelvis showing the position of the uterus after Watkins transposition operation.

operation often fails to cure cases of procidentia uteri is that in many cases of procidentia uteri the uterus is very long and the lateral and posterior parts of the pelvic fascia round the cervix are markedly elongated through over-stretching. In such cases intra-abdominal pressure is able to force the cervix out in an arc based on the pubic arch as a fulcrum. When a very high amputation of the cervix is done with this operation and the degree of true descent of the uterus is not very great, the utero-sacral and the cardinal ligaments are pushed up to the level of the midcavity of the

pelvis and at that level they stretch from the now elevated cervix to the hollow of the sacrum and the sides of the pelvis. Under these circumstances the limb of the intra-abdominal pressure that these ligaments have to meet is directed towards the hollow of the sacrum. In my modification of the Mayo technique the same conditions are created even in a case of a severe degree of true prolapse. It combines the most favourable features of the original Mayo technique and of Watkins transposition operation. Fig. 6 is a photo-

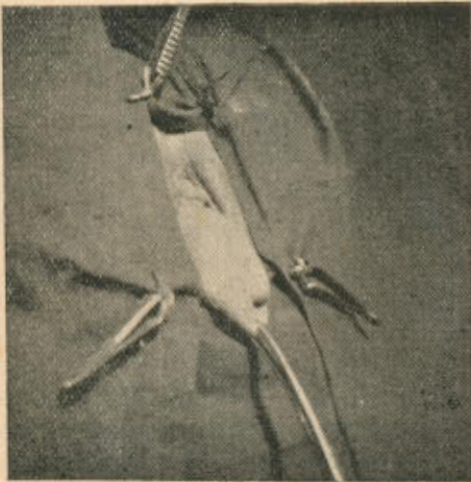


Fig. 6—Photograph of the field of operation at the beginning of the operation.

graph showing the type of case in which this technique is used and Fig. 7 is a photograph from the same case showing the part of the uterus that was removed. In Richardson Composite Operation the retained portion of the cervix is supported only by the weakened pubo-cervical fascia anteriorly and the force that has to be resisted in this region is directed towards the pelvic outlet.

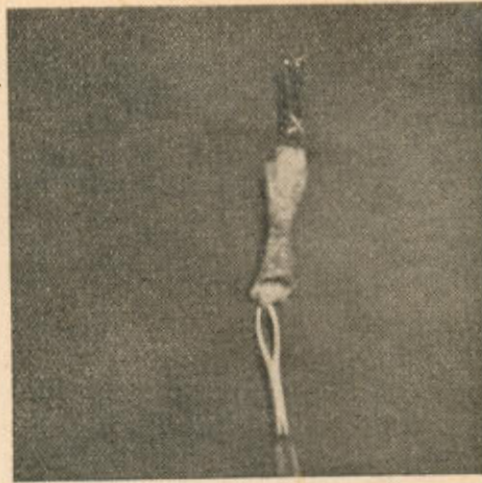


Fig. 7—Photograph of the part of the uterus that has been removed.

Summary

1. A modification of the Mayo technique of hysterectomy for cases of severe degrees of uterine prolapse is described.
2. It utilises strips of muscular tissue from the sides of the uterus which are folded over and joined together and then fixed under the pubic arch.
3. After this operation the vagina remains of normal length and till now no case of recurrence has been seen.

References

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