ABDOMINAL COLPORRHAPHY

BY

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Where severe prolapse is associated with any condition of the uterus that calls for removal of that organ, vaginal hysterectomy with vaginal plastic has become the operation of choice. There are, however, occasions when vaginal hysterectomy is impossible, either because the uterus is too big or because of adhesions from some organic disease in the pelvis e.g. tubo-ovarian masses, (the inflammation starting some time after the occurrence of prolapse), or there may be some other condition for which laparotomy is essential. In these cases it is usual to perform subtotal hysterectomy along with other necessary procedures by the abdominal route and to deal with the cystocele and the rectocele by a separate vaginal operation. But, where total hysterectomy is indicated the situation is different. Performance of anterior colporrhaphy after abdominal total hysterectomy is technically difficult as the dissection has to be done from below upwards and the anterior vaginal wall cannot be made tense enough; it has another drawback as during this operation one has to pull down on the anterior vaginal wall and this considerably weakens the support of the vaginal vault. Risk of vesical injury also is not insignificant.

To overcome these difficulties the author treated eight cases during the last four years by abdominal total hysterectomy followed by abdominal anterior colporrhaphy, and then posterior colpoperineorrhaphy vaginally.

Anatomical Considerations. Each Mackenrodt's ligament is attached medially to the lateral aspect of the supravaginal cervix and the entire lateral border of the vagina above the levator ani. From its medial attachment the ligament extends laterally and slightly backwards to the postero-lateral wall of the pelvis. This can be well verified during the performance of Wertheim's operation for carcinoma of the cervix.

Dissection of specimens of uterus and vagina, either removed by Wertheim's operation or obtained from autopsy material, shows that the pubocervical fascia, which lies between the anterior vaginal wall and the bladder, which it supports, is continuous laterally with Mackenrodt's ligaments (Fig. 1). Operative experience and anatomical dissections show that the pubocervical fascia is attached posteriorly to the front of the supravaginal cervix and anteriorly to the pubic bones. In fact, the pubocervical fascia contains two

sets of fibres, superficial and deep. The former stretch between the supravaginal cervix and the pubic bones, whereas the latter pass laterally and backwards and blend with the anterior aspect of the Mackenrodt's ligaments (Fig. 2). It follows from this that any transverse shortening of the upper part of the anterior vaginal wall will draw up and tighten the ligaments of Mackenrodt, which will fix the vault of the vagina. It will also shorten the pubocervical fascia in a transverse direction and cure cystocele.

Operation. The operation of total hysterectomy is begun in the usual way, but the bladder is separated from the vagina to a further extent than usual till the urethra is reached. The pubocervical fascia is left attached to the vagina. After removal of the uterus vessels are tied and the angles of the vagina are ligated with sutures left long to suspend the vagina during the subsequent steps of the operation.

A triangular segment of the anterior vaginal wall with its overlying fascia and having its base uppermost and its apex near the upper end of the urethra is removed (Fig. 3). Usually a few small bleeding points are encountered and they are temporarily clamped with pressure forceps. The vaginal edges are then approximated by two layers of continuous or interrupted catgut sutures. For the first layer the needle is passed through the vaginal mucosa, out through the vaginal wall and the pubocervical fascia, and then in through the pubocervical fascia and the vaginal mucosa of the opposite side, so that the knots are placed within the vagina. The second layer picks up the pubocervical fascia only in a continuous Lembert suture. The operation is thus exactly similar to that of anterior colporrhaphy as usually performed by the vaginal route.

On completion of suturing of the anterior vaginal wall it is found that the original lateral angles of the vagina, marked by suspension sutures, have moved medially and lie in the anterior wall of the reconstructed vaginal vault. The suspension sutures are cut. The lateral angles of the vaginal vault are then held with tissue forceps and the vagina is closed transversely. A suture is then passed through a selected point of the right round ligament, the right corner of the vaginal vault and a selected point of the right uterosacral ligament and tied, so that the ligaments are just tense enough to support the vaginal vault. The medial portions of the ligaments are sutured to the top of the vagina. Any excess of the round ligaments, if there be, is excised. The same procedure is done on the opposite side (Fig. 4).

Peritonealisation, closure of the abdomen and posterior colpoperineorrhaphy are done in the usual way.

Discussion. MacLeod, in 1951, described a similar operation and stated that the immediate and the fairly remote results were good. He removes a triangular segment of the anterior vaginal wall and sutures the cut edges. He believes that the transverse shortening of the anterior vaginal wall thus produced tightens the Mackenrodt's ligaments and thus

the vaginal vault is supported, and that cystocele is cured by the transverse shortening of the pubocervical fascia and the anterior vaginal wall. In the operation just described the round and the uterosacral ligaments are utilised for supporting the vaginal vault in addition. As adjusted lengths of the round and the uterosacral ligaments are used, no alteration in the direction of the vagina takes place as it does happen when only the round ligaments are used.

Since February 1952 till the time of reporting, only eight such operations have been done. Their indications, period of supervision and results have been given in Table 1. The results appear to be excellent. Seven of them have been examined for follow-up quite recently. Six had no symptoms and no sagging of the vaginal walls. One patient complained of a "feeling" of something coming down per vaginam on straining, but there was no evidence of any sagging down of the vaginal walls on straining, on repeated examination in different postures. One patient could not come for examination; she informed that she was free of symptoms. However, she was seen seven months ago and the result was very good.

Sufficient time has not yet elapsed since this type of operation was started. Time only will decide whether the ultimate result will be as satisfactory as the immediate and whether this operation will stand or fall.

This operation is anatomically sound. The vaginal vault is supported by the tightened

TABLE 1

Indication	Number	Date of		Last	Result	
Prolapse with		operation	Last visit	information	Symptomatic	Anatomic
		B.R. 2-2-52	8- 9-55	9-10-55	Good	Good
		G.H. 9-2-52	1-10-55	1-10-55	„	„
fibroid	5	S.R. 23-5-55	15-10-55	15-10-55	„	„
		S.M. 15-7-55	5-10-55	5-10-55	„	„
		K.D. 30-7-55	10-10-55	10-10-55	„	„
		K.G. 6-7-53	3-10-55	3-10-55	Bad	„
ovarian cyst and menorrhagia	2	B.S. 8-10-54	15- 4-55	10-10-55	Good	„
T. O. masses	1	L.B. 9-4-55	27- 9-55	27- 9-55	Good	„

Mackenrodt's ligaments from the sides, and shortened round and uterosacral ligaments from the front and the back respectively. With the vaginal vault well supported, cystocele is cured by tightening of the pubocervical fascia and the anterior vaginal wall. Posterior colpoperineorrhaphy reduces the size of the hiatus urogenitalis. These principles are fundamentally the same as those so well established in the vaginal operation for prolapse. So it is expected that the ultimate results will be as satisfactory as the immediate; but more time and study must elapse to prove that this enthusiasm is justified.

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References

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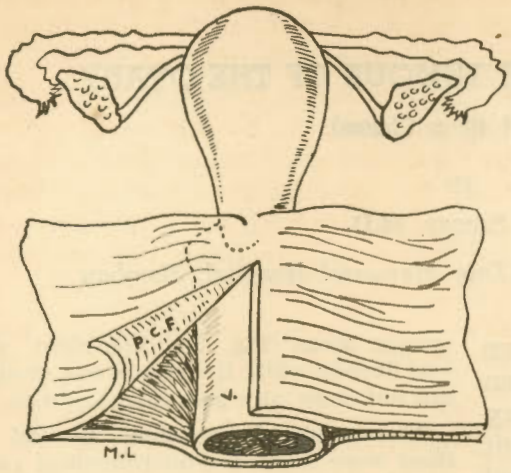

Fig. 1.

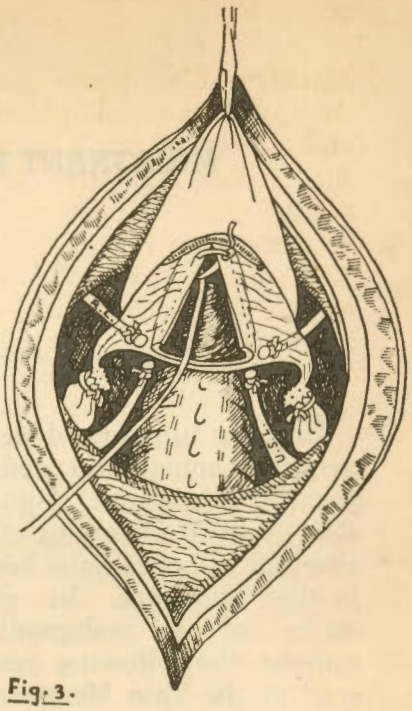

Fig. 3.

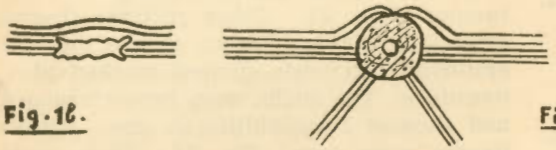

Fig. 1b. Fig. 1a.

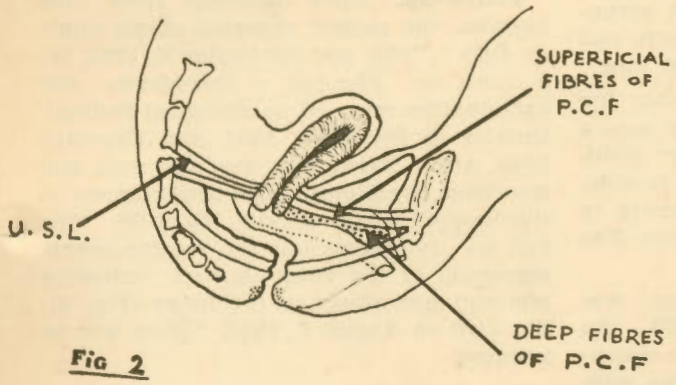

Fig 2

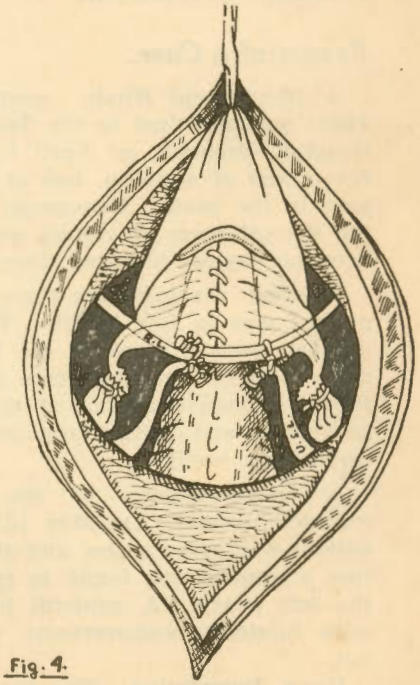

Fig. 4.

Fig. 1. Diagram of specimen of uterus with tubes, ovaries and vagina showing blending of the pubocervical fascia with the Mackenrodt's ligaments.
Fig. 2. Sagittal section of pelvis showing arrangement of the fibres of the pubocervical fascia.
Fig. 3. Triangular segment from anterior vaginal wall excised and commencement of suturing of cut edges.
Fig. 4. Abdominal colporrhaphy completed. Round and uterosacral ligaments anchored to the vaginal vault.