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ORIGINAL ARTICLES.

VENTRAL SUSPENSION AND VENTRAL FIXATION FOR PROLAPSE OF THE BLADDER WITH THE UTERUS.

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Summary.—For the worst cases of procidentia where a large portion of the bladder and of the uterus hangs outside of the vulva, plastic operations will not suffice. High attachment to the abdominal wall is required to effect a permanent cure. When the base of the bladder has become elongated, or has slid away from its attachment to the cervix, and cannot be lifted, it should be freed from the cervix, slipped upward and made fast, to prevent a later cystocele. The procedure necessary during child-bearing activity is suspension; after the menopause, fixation to the naked muscle.

This paper deals with the worst cases of prolapse. Pessaries will hold some uteri and the edema will then disappear. Massage has helped a few. Minor degrees of falling with little or no retroversion of the uterus may be curable by repair of a torn cervix, or amputation of an elongated one, together with removal of any slack in the anterior vaginal wall, followed by reconstruction of the torn pelvic floor. Most uteri, however, which are low enough to show the cervix at the vulva on coughing or in the upright posture exhibit a backward-tilted fundus, and an increase in size. Therefore nearly every case of prolapse calls for attachment of the fundus to the rear surface of the abdominal wall. Thus the wedge is prevented from reopening the vulva, by being laid across the gap. The thrust from above comes upon the back of the uterus instead of the front.

Suspension in the child-bearing woman, fixation in the woman past the menopause—this is the rule. In the first class, the fundus is sutured with ten-day or forty-day gut to the parietal peritoneum alone. The slender ligament that forms will hold the organ in normal anteversion, yet will let go as pregnancy advances. In the second class, the fundus is sewed directly to naked muscle and fascia. A solid union results, which entails abortion or dangerous labor, but gives a permanent hold. Therefore, in the worst cases of prolapse in women who should have no children, and for women past the climacteric, fixation is the satisfactory method. It is necessary to fix, solidly, in women past child-bearing, because, with such, all the lower supports one can build are apt to yield. The scar tissue of the down-hill slope of life stretches with discouraging promptness under steady strain. Thus, unless the bladder be fastened above, the cystocele returns.

Küstner in 1897 reported 90 cases of fixation of the uterus with two failures. He passed silkworm through the fascia, muscle and peritoneum, and through the uterus, bringing peritoneum to peritoneum.

Removal of the uterus for prolapse has proven a failure. To remove a replaceable and healthy organ because it protrudes through a hernial opening is not good surgery. Morover, it fails to prevent subsequent return of prolapse of the bladder, only relieving that part of the difficulty which is most easily cured—namely, the uterine displacement. I believe even its inventor, Fritsch, has abandoned it. Shortening of the round ligaments has shown many failures as treatment for prolapse. It can only be permitted for patients very desirous of children (its results in labor being perfect, and therefore better than those following suspension) in young patients with muscular unshrunken pelvic floors, out of which nearly normal structure can be rebuilt by operation.

Of amputation of the cervix we shall hear less and less. The enormous thickening is only edema, so also is the elongation. It is not true hypertrophy. So the microscope says, and so says this experiment, which has been often repeated. A uterus one-third beyond the normal length with its cervix hanging well without, pushed back and held by glycerine tampons for two or three treatments will be found to shrink to nearly normal size. My most striking case showed a shrinkage

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in total length of uterine canal from 4¾ inches to 2⅝ inches.

The very long, thin cervix needs some shortening. Taking off half the excessive length always suffices.

Varying Relation of Bladder to Cervix in Prolapse.—It is the behavior and distortion of the bladder in all large protruding masses that constitutes the least studied problem, and the one most difficult of permanent correction. Not only is there a sharp difference of opinion as to the stability of union between bladder and cervix in the normal individual, not only do these fallen bladders offer a variety of findings, but some slide out again after operation while others do not. The variations are worthy of a study to which

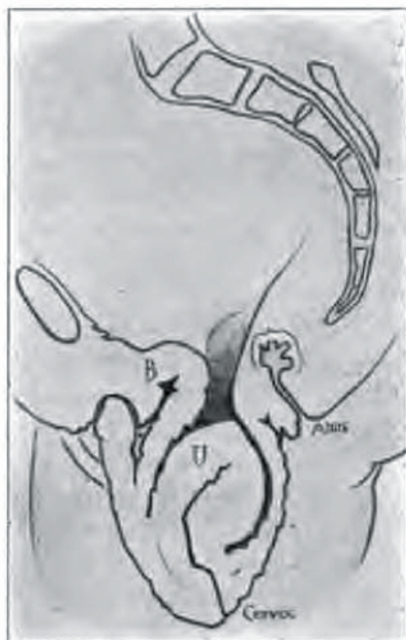

Fig. 1.—Section of complete prolapse of uterus and bladder with little change in anterior vaginal wall or bladder wall. Here no ventro-fixation of the bladder is called for. Saalberg, Over prolapsus uteri; Leyden, 1859.

this paper is only an introduction. If one can determine what conditions threaten relapse, the remedy may be devised.

The Elongated Bladder.—The most frequent explanation of the distortion, as shown by the frozen sections and by dissections, is that the lower bladder wall elongates or becomes edematous. Long protrusion brings this about. Even in a muscular woman of thirty-five, a year of uninterrupted protrusion sufficed to produce a development of large size. As thickening often takes place, actual increase in area will vary.

The ureteral openings are outside the patient's body in some instances. The ureter is dragged

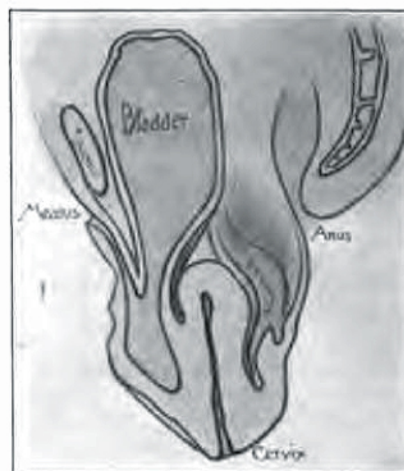

Fig. 2.—Section of prolapsed uterus and bladder with shortened utero-vesical pouch, and anterior vaginal wall nearly doubled in length; to prevent cystocele after bladder fixation, the bladder should be loosed from the uterus. (Barnes Dis.-Women, 1878, 628, Fig. 112.)

far downward without appearance of being stretched.

Whether the junction between cervix and bladder was originally defective or not, cannot be told from a study of old cases of prolapse, because edema and hyperplasia have bound the two together in a new relation. In none of my cases of elongated bladder-base was there such play as to permit the bladder to be slid upward past the cervix. This point is of practical importance, for,

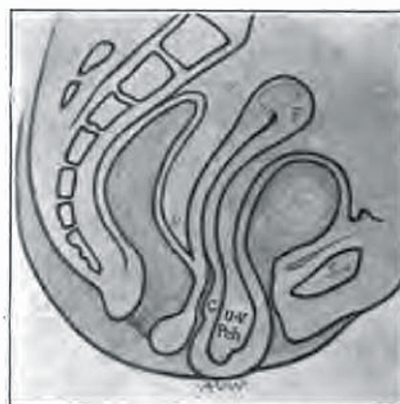

Fig. 3.—Section of elongation of uterus, the fundus remaining in place; separation of cervix and bladder, by hernia (Einstulpung) of the utero-vesical pouch. Here high ventral fixation of uterus and bladder is called for, after anterior colporraphy. (A. Martin, Hand-Atlas d. Geb. u. Gyn.; 1878, T. 48, Fig. 5.)

unless this sliding can be done, there will be such redundance in length (as well as in breadth) of the anterior vaginal wall that support from below,

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sufficiently effectual to prevent relapse, is impossible. The bladder must be dissected free from the cervix both in the median line, and a certain distance to each side of the cervix, and its raw, rear surface slipped upward at least to the fundus. Where the utero-vesical pouch dips low, this is easy. Where a long cervix has to be shortened, it is but a step further.

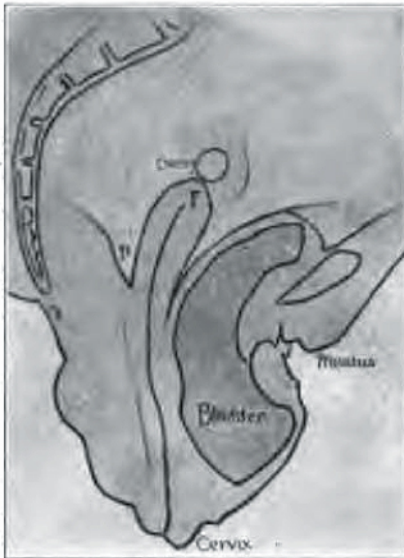

Fig. 4.—Elongation of the uterus, prolapse of the bladder, anterior and posterior vaginal walls: amputation of the cervix, plastic operations on the anterior and posterior walls: separation of bladder and cervix with the double fixation is desirable. (Froriep, Fig. 417.)

The bladder cannot be pulled up into place through the abdominal incision in these distorted cases, unless it has been freed from below. The finger finds, in the worst cases, between uterus and bladder, a pouch running to the vulvar opening, even though the empty organ be drawn to its highest possible position.

In the instance here reported (Fig. 9), though the top of the bladder could readily be drawn to the cartilage of the eighth rib, the pocket behind it reached over four inches below the pelvic brim.

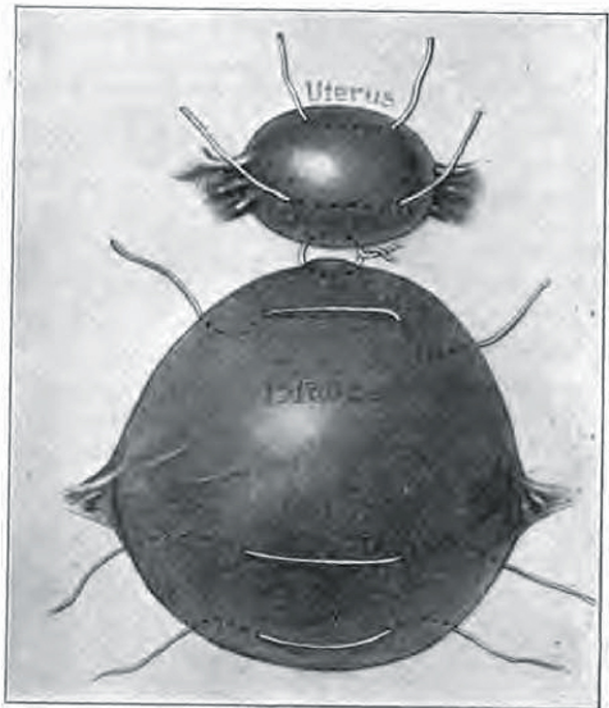

Fig. 6.—The fixation sutures in the fundus of the uterus and bladder, seen from above. Thus the bladder will be infolded.

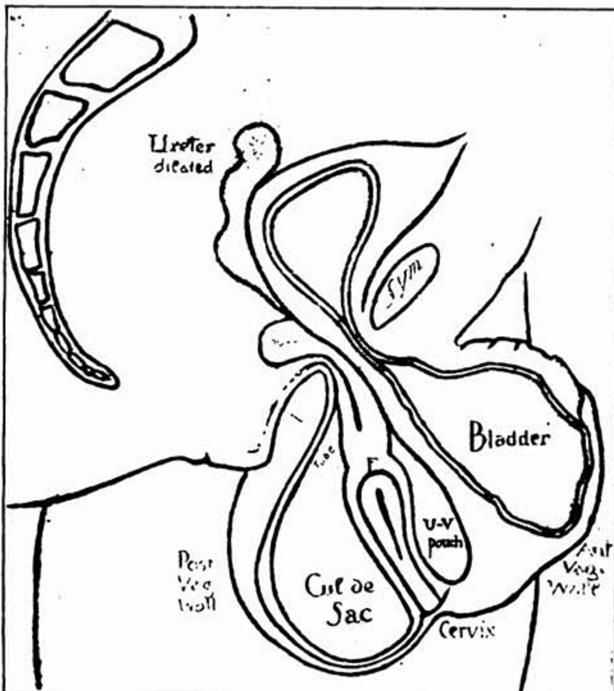

Fig. 5.—Prolapse of bladder and uterus with hernia of cul de sac and utero-vesical pouch, and great elongation of both vaginal walls: after perineal repair and anterior colporraphy, both rectum and bladder must be fixed to abdominal wall, the bladder having been freed from the cervix. (Froriep, Chirurgische Kupfertafeln, 416; Martin's Hand-Atlas 48, 4.

Behavior of the Utero-vesical Pouch.—In most cases of prolapse the lowest dip of the peritoneum between uterus and bladder retains its relation to the fundus of both organs, and to the pelvic brim. This is shown in the specimen from Froriep (Fig. 4).

In two-thirds of the cases operated on by me the pouch kept the normal relations to the fundus and pelvis.

In some instances the utero-vesical pouch drops with cervix and bladder wall, and it may dip to the lowest portion of the hernia. This was true

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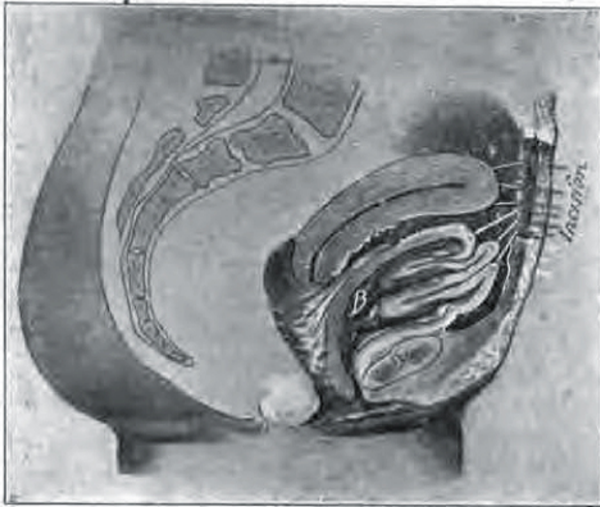

Fig. 7.—Ventral fixation of uterus and bladder. The bladder has been freed from the cervix in order that its elongated lower wall (B) may be lifted toward the abdominal wall. The sutures throw the bladder into folds. For fixation, the stitches pass by the peritoneum and enter the muscle of the anterior abdominal wall.

in three of my cases, and is seen in the sections of elongation of uterus (Fig. 3), and prolapse of bladder and uterus, etc. (Fig. 5), and prolapse of bladder (Fig. 9).

Operation to Free and Fix the Prolapsed Bladder.—Whenever the prolapsed anterior vaginal wall is greatly elongated, or a very large portion of the bladder hangs out, the following technique is desirable:

1. Curetting.
2. Repair of cervix if badly torn (but not for simple eversion); amputation of cervix if the elongation is great (entire canal 5 inches or over), but not for breadth alone.

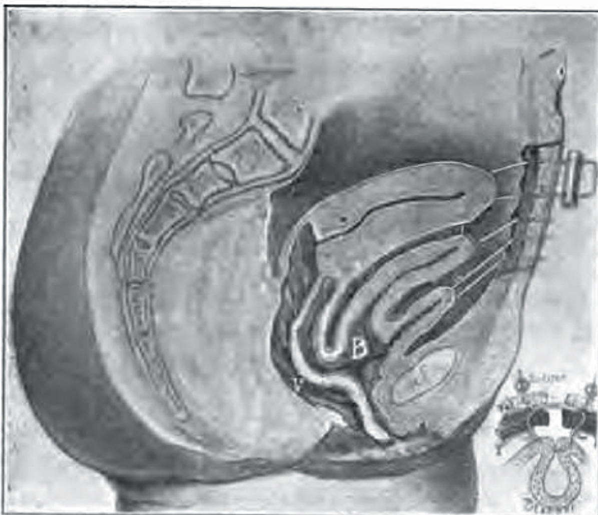

Fig. 8.—In ventral fixation of the bladder the posterior wall cannot be sufficiently drawn upward to prevent the sagging at B, which will produce a cystocele within two years. The figure of eight sutures, over bolsters, is shown in the lower diagram, as well as the folded bladder wall and the sero-muscular apposition.

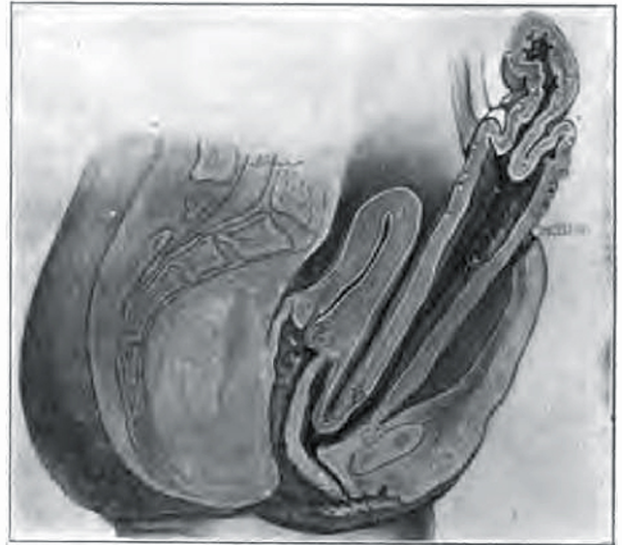

Fig. 9.—This bladder, when drawn upward to the highest possible position yet showed a dip of the vesico-uterine pouch running down nearly to the subpubic arch.

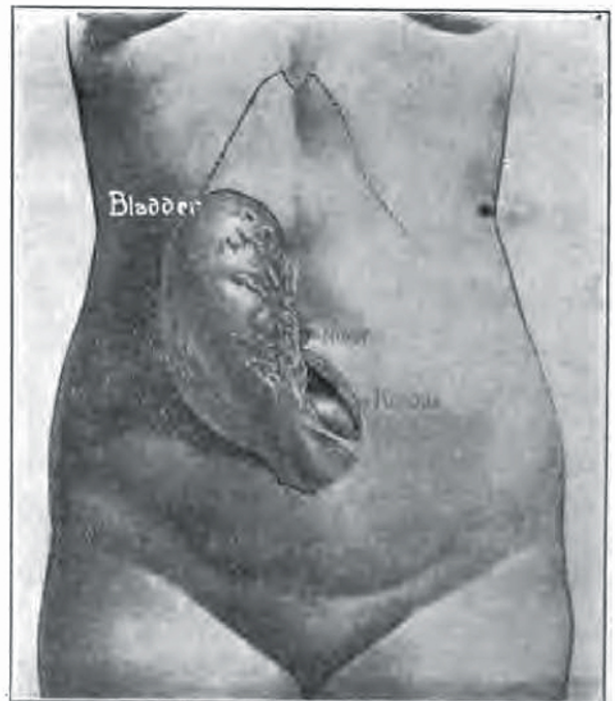

Fig. 10.—A hypertrophied bladder drawn through the abdominal incision. Large varicose veins cover it. The fundus could be raised nearly to the ensiform. The two finger incision is pictured too large.

3. Dissection of bladder from cervix, with removal of redundant anterior vaginal wall, in most cases: suture with 10-day gut.

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4. Repair of perineum (and of posterior vaginal wall in case of rectocele).

5. Abdominal incision beneath navel; examination of prevesical and utero-vesical pouches; and either

(*a*) Suspension of bladder and uterus to parietal peritoneum with 40-day gut (in women still menstruating); or,

(*b*) Fixation of bladder and uterus directly to naked muscle and fascia with silkworm sutures over bolsters (in patients past the menopause).

The third step is necessary in this particular class of troublesome cases because it is the only means whereby the bladder can be sufficiently elevated to prevent subsequent cystocele, so long is the anterior vaginal wall. Tissue may be removed, both longitudinally in the median line and also near the cervix in the anterior fornix, and the upper edge of the trimmed vagina may be hitched to the front of the body of the uterus as is done in vaginal fixation of the uterus, thus laying a transverse fold in the bladder wall. But while an ordinary oval anterior colporraphy is of undoubted value, time is saved by omitting denudation or suturing of the vaginal wall near the cervix. The end is accomplished after the abdomen is opened, by the fixation sutures, which bring the raw rear bladder wall into contact with the front aspect of the uterus.

The abdomen is incised, not near the symphysis but below the navel, or half way between the two, and the peritoneum is opened for two fingers. Bladder and uterus are drawn up. The utero-vesical pouch is palpated if it has not been previously opened, in order to determine its depth, for the main difficulty lies in lifting this portion of the bladder high enough. The stitches are placed in the bladder in such fashion as to pull the slack of anterior, lateral and posterior walls well up to the wound. The fundus of the bladder becomes inverted.

The after-history of the patients is very satisfactory. The bladder never resents sutures thus placed, and empties itself spontaneously. No irritability or evidences of traction ever develop.

In the choice of procedure to relieve prolapse, it goes without saying that the condition of the individual decides. The healthy young woman who must work hard and presents a considerable procidentia demands full surgical relief. Among old women are two classes, the hale and the frail. The active, wiry woman whose ancestors have all lived long, and who has a large prolapse, thanks the surgeon for many happy unburdened years. But the elderly patient with lowered resistance should be warned away from the risk. These are they of the sluggish kidney, the hard artery, the flabby fat. The woman of wealth may spend much time on her couch or on the gynecologist's table, rather than hazard operation, and the minor degrees of displacement are responsive to lesser measures, or made comfortable by well adjusted support.

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