Original Communications.

A CONTRIBUTION TO THE TREATMENT OF RETROVERSION OF THE UTERUS.

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For a period of more than two years, a case of retroversion of the uterus annoyed me exceedingly. The patient was a married lady, about 40 years of age, native of Maine, mother of seven children, and occupying a position in the middle class of society. She complained of disturbance of the nervous system—sometimes approaching insanity. There were great prostration, irritability and uneasiness; at times, numbness of the extremities and limbs; bearing-down pains in the back; dysmenorrhoea; inability to walk, to lift weights, and to go up stairs without increasing the difficulty.

A physical examination, obtained after much urging and delay, showed the uterus to be completely retroverted. A Simpson's sound could be introduced into the womb completely only when its concavity looked backward and the handle was brought forward towards the pubis. The length of the uterus was normal. The os was rather rugose and patulous. There was no flexion. The treatment consisted in replacing the womb with the sound, and in endeavoring to keep it *in situ* by pessaries of various shapes and materials, which were changed as often as they failed. When I had exhausted all the resources that I was acquainted with, and when the patient was just on the point of giving up all treatment in sorrow and despair, a contrivance was hit upon, which is here exhibited, and which has kept the uterus in place ever since, with exceptions which will be mentioned. The success in this and other cases induces the writer to bring the instrument forward to notice, in the hope that it may prove as efficient in other hands.

The principle of pessaries in uterine displacements has long been announced (Anatomical plates by Jones, Quain, and E. J. Wilson, edited by J. Pancoast, Philadel-
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phia, 1843, Part, The Viscera, p. 55, note) to be an extension of the vagina in its long axis, by restoring the tone and tension of the tube transversely, to prevent the uterus from falling down. It is not part of the principle to distend the vagina transversely, as is done by most internal pessaries. This distention rather weakens the tone of the vagina, by putting it constantly on the stretch. Indeed, in the case of retroversion quoted, the indications of treatment were—

1st, To replace the womb by the sound. This was done by putting the patient on her hands and knees, the head depressed and the hips elevated; then, introducing the sound, concavity backward, to move the handle backward, at the same time rotating it upon its long axis until the concavity looked forward, and the longitudinal axis of the sound corresponded with that of the vagina.

2d, To keep the uterus *in situ naturali* by introducing the pessary shown in Fig. 1 (next page), which, by its peculiar form, extends the vagina in the direction of its long axis, without distending in the direction of its transverse axis, and also without resting upon any point within the vagina, but upon an elastic support, thus imitating the natural guys of the uterus.

This pessary is made of hard rubber, curved antero-posteriorly, to correspond with the curved axis of the vagina. The uterine extremity is a loop, bent backward just enough to receive the convexity of the posterior surface of the neck of the womb, and accurately fit the posterior vaginal cul de sac. Towards the other end of the pessary, the sides of the loop become fused into one piece, which extends out of the vulva and bends directly backwards into a hook, thus embracing the posterior fourchette and the perinæum. To the free extremity of the hook is attached a piece of India-rubber tubing, about six inches in length and one quarter of an inch in diameter. This tubing lies in the furrow between the buttocks, and is provided at its free extremity with a loop, to which is attached either a tape or band, which surrounds the

[WHOLE No. 2091.]

pelvis of the patient and completes the apparatus. The features peculiar to myself are:

The single posterior support of an elastic India-rubber tube, the hooked termination, and the full antero-posterior curve.

The remaining features of this pessary have been made known to the profession by Professor Storer, Jr., introduced by him

from London. This pessary is supported by two parallel bands extending from the pubis in front to the sacrum behind. Thus this pessary has two points of support. My modification consists essentially in reducing the points of support to *one only*, and that *from behind solely*.

FIGURE 1.

Section of female pelvis. Beginning on the right hand, we have the mons veneris, the os pubis, the urinary bladder, the uterus (side view), the vagina contracted about the pessary, the rectum, the sacrum, the natal furrow, the posterior suspensory tubing, the right buttock.

The pessary is seen behind the neck of the womb, in the posterior vaginal cul de sac. It extends in the direction of the longitudinal axis of the vagina. At the posterior fourchette it takes a short turn backward, and is attached to India-rubber tubing which lies in the natal furrow, and is fastened to the pelvic belt, which is not represented in the cut. At the posterior fourchette is seen a joint, and the dotted lines represent the hamular process and the tubing turned forward on the joint, to escape the anus during defecation.

The advantage of the modification will be apparent when it is considered that the apparatus is simple, and that when once introduced and properly fitted, it cannot easily become deranged. The furrow between the buttocks prevents the lateral motion of the tube of support. The attachment to the pelvic band prevents all downward displacement, except that which is immediately restored by the contractility of the suspending medium. The only point of pressure contact within the vagina being at the posterior vaginal cul de sac, the con-

cave surface of the smooth hamular process fits the perinæum without chafing, and the hook simply lies in the vaginal orifice. If it presses upon the posterior fourchette so as to imbed itself, the instrument is not a fit, and the suspending cord should be loosened or a new instrument procured. If it impinges too forcibly upon the urethra, the cord should be tightened. When properly adjusted, the pessary cannot tip backward, as it will come in contact with the promontory of the sacrum. It cannot go forwards, as it is held by the uterus. Indeed, with-

out being rigid and vice-like, it holds the vagina in its natural axis and curve, and (another most important feature) allows of the normal contraction of the transverse fibres of the vagina. The single attachment of the support behind enables the patient to micturite without disturbing the apparatus, which cannot be done with the double attachment. When it is remembered that frequent micturition is an almost constant accompaniment of uterine disease, performed very much oftener than the function of defæcation—this posterior suspension acquires an increased importance.

Furthermore, the point of suspension is on a good foundation. The posterior surface of the pelvis, made of bone superficially covered with integument, is smooth and fixed. It is not like the changeable surface of the anterior portion of the abdominal trunk, which is made up mainly of soft tissues on a base of yielding intestines that have a peristaltic motion, besides a continual change of contents in character, quantity and quality. Whenever the supporter does move, it is downward, away from the perinæum.

During defæcation, the pelvic tape is untied, the India-rubber tubing is brought forward between the thighs in front, and the pessary also is brought forward so as to clear the anus, and is held by the hand. It should be held firmly, as the bearing-down efforts sometimes tip the uterus over again, as was done twice in the case related—only twice in eight weeks.

Since the above was written, influenced by the fact of displacement occurring occasionally during defæcation, and also by the opinion of a distinguished specialist that this disadvantage operated against the perfect working of the instrument, I contrived a joint in the hook, in such a manner as to allow the extremity to rotate in a circle, the circumference of which is described by the end of the hook, and the centre of which is the axis of the middle of the hook. The joint is so compact as to present no re-entering angle into which the tissues may be buried or caught, and yet at the same time admits of an easy movement. The *modus operandi* of this joint is simply this. The pelvic band may be loosed, not withdrawn. The hook, with the attached rubber tube, is drawn forward either half or a quarter of a circle, and held there until the act of defæcation is accomplished. It will be seen (Fig. 1, dotted lines) that when the hook is turned forward the length of the pessary is increased by the length of the rotating portion of the hook. The centre

of the joint being at the posterior fourchette, the extremity will come in the neighborhood of the pubis, and will be far enough removed from the anus to be out of the way. At the same time, it affords a handle which is easily held.

This joint modification has worked very well practically. Indeed, in the case adduced, the uterus has kept its place since the modified instrument has been employed. At the suggestion of another medical friend (*ut supra*), I have also adopted, in place of the pelvic tape, a broad band of webbing, fastened with a buckle in front. This completes the instrument, and also is preferred by patients. There are three sizes of instruments—4½ inches, 5 inches, and 6 inches in length, the curves and length being graduated to different-sized and shaped vaginæ.

The period of time they can be worn is a matter to be decided by experience. The present patient has worn them for more than nine months. The effect of the instruments has been to restore normal nerve-sensations, to give vigor and strength, so that the patient can engage in heavy housework, and maintain her position as the mother of the family. She refuses to go without the pessary. I have encouraged her in this idea, as the long time in which the uterus had lain retroverted seemed to have essentially impaired the tonicity of the transverse vaginal fibres.

A second case in which this pessary was used was a bed-ridden one, in which retroversion had probably existed for fifteen years continuously, inducing nervous symptoms of a peculiar character, especially an inability to hold the head upright when sitting or standing, and an exceedingly irritable condition of the sympathetic nervous system. During the treatment, an obovoid body, of a dirty-green hue, made up of concentric laminæ of a somewhat tough consistence, about an inch and a half in length and half an inch in width, was discharged from the uterus. Since the pessary described has been used, and *during* its use, the retroverted organ has been easily and perfectly maintained in its natural position. The re-placement, however, did not relieve the patient, and the case still remains an *opprobrium medicorum*.

CASE III.—Mrs. T. M., born in Ireland, 20 years of age, nervous temperament, with no previous births or miscarriages, was delivered, April 29th, 1867, of a female child, well formed, and weighing 7 pounds. The waters were broken artificially, and there was some forcible dilatation of the os uteri. The child subsequently sickened

and died, at the age of two months, afflicted with an eczematous eruption which covered the whole body, and which was suspected to be specific. During the fall months of the present year, my attention was called to Mrs. M. She was complaining of symptoms that I thought justified a diagnosis of mild typhoid fever. She was treated accordingly, without being confined to her bed, and she afterwards resumed full duties in keeping her house. One day, while at work, she felt a pain in her back, and fell insensible. It appeared that the time had come for a full and thorough examination of the case. It was found impossible to introduce the uterine sound any other way than with the convexity backward. The length of the uterine cavity was normal. The uterus was felt between the sound and the finger. The patient was put on her hands and knees, hips up, and the uterus replaced by means of the sound. A pessary of the smallest size was then introduced, the distal-looped extremity put into the posterior vaginal cul de sac, the pelvic band secured, and the patient resumed the vertical position. About three weeks afterwards (the patient being kept under notice, and the uterus examined at intervals of three or four days with the sound, so as to be sure of its being in place), the family moved to another residence, the patient doing the cleaning-up work and a good deal of the lifting. On visiting her in her new home, I found the pessary had come out from the vagina, although the pelvic band had not been removed, but had become loosed. Her version of the affair was a humorous one. She stated that the premises were infested with rats, and that they invaded the bed-room during the night, and frightened her exceedingly. On awaking in the morning, she felt a cold touch on her person. Supposing it to be one of the vermin in the bed, she made those motions and demonstrations which would be natural to a female in similar circumstances, and discovered the object of her terror to be—her pessary! When I came in, she was on her knees, scrubbing a very dirty floor, the legacy of a former tenant, and after her recital, although she said she had not felt so well for a long time, I supposed of course that the uterus was misplaced again by her unusual exertions. The sound, however, showed it to be *in situ naturali*, and the case was left without the supporter—to be watched.

In this instance, the short duration of the displacement had not destroyed the vaginal tonicity, and the successful employment of

the instrument seems to indicate that if these retroversions are detected early and the supporter timely used, the results of this method of treatment may be as satisfactory as other methods have hitherto been unsatisfactory.

CASE IV.—Mrs. B., native of New England, bilious temperament, married lady, 28 years of age; mother of one child, 7 years of age. Mostly engaged in household work. Since her child was born, if not before, she has been troubled with nervous symptoms, with numbness of limbs, headache, frequent micturition, bearing-down pains in back, peculiar feelings in the abdomen, especially when pressed upon, inability to endure fatigue or prolonged exertions—pastimes becoming burdens—&c. On examination, the lateral diameter of the vagina was found greater than the longitudinal. The finger came directly in contact with the posterior surface of the uterus. It could be passed behind the fundus. There was no posterior vaginal cul de sac. The same features were presented by a rectal examination. While endeavoring to pass in the sound, the uterus would rise in the pelvic cavity, preserving the horizontality of the longitudinal axis, and the vagina would become enormously distended into a cavity in which the finger could move without obstruction—the walls being smooth and tense, as if stretched out like a tent. This occurred especially when the patient was put upon her hands and knees. The uterus would be so lifted out of reach as to oblige the patient to lie upon the side again before the sound could be introduced. The uterine cavity was three inches in length; the sound moved freely within it. The os was congested. The uterus being replaced by the sound, and the sound withdrawn before the supporter could be put in place, the uterus would slip back. By retaining the sound within the uterus, and passing in the pessary by its side, I was enabled to introduce the instrument properly. On subsequent visits, the pessary was found to be well borne, and the patient was feeling better. Still, it was mortifying to find the uterus balanced by its middle over the end of the pessary, as it were, like a saddle over a horse's back. There being absolutely no posterior vaginal cul de sac as ordinarily found here, it is a case which does not present the feature which is indispensable to the instrument. However, to meet the indications in this, I contrived an intra-uterine pessary, which has the same principle of external support as the one just described. This is represented in Fig. 2. Except during a

menstrual period, this has been well borne. It is to be distinctly understood, however, that the pessary here brought forward is introduced for no other displacement than retroversion. I have but little experience in its use in other displacements, and do not particularly recommend it for them. However, in Fig. 3 is represented a pessary for prolapsus, which embraces the principles of the retroversion pessary modified.

FIG. 2.

Intra-uterine pessary on a posterior elastic external suspension.

FIG. 3.

The pelvic band, the India-rubber tube, the jointed hook are the same, but the ring and the single columnar support constitute the modifications. It is not recommended, but suggested, as I have not had a suitable opportunity for its trial.

Both these pessaries can be obtained of Codman & Shurtleff, 13 and 15 Tremont St., Boston. They are made under the supervision of the writer, and are reliable in workmanship and material.

In conclusion, the writer admits that *all* pessaries are an evil; but how can mechanical supports be dispensed with in relieving such a purely mechanical displacement as retroversion of the womb?

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RUPTURE OF THE SCLEROTIC;

WITH A CASE IN WHICH THE LENS AND THE WHOLE OF THE IRIS ESCAPED THROUGH THE WOUND, YET THE PATIENT RETAINED VISION OF ONE THIRD, WITH AN APPROPRIATE GLASS.

Read before the Boston Society for Medical Observation, by O. F. WADSWORTH, M.D.

RUPTURE of the sclerotic is placed by writers on ophthalmology among the most fatal in its effects upon vision of the accidents to which the eye is exposed, and this estimate of the severity of the injury is certainly not exaggerated. Though loss of the or-

gan may not be the result, the usual position of the wound must necessarily entail grave lesions.

Unless the blow be inflicted by a sharp body, or one moving with considerable force and rapidity, in which case the part injured is that directly impinged upon, the wound is caused by the *contre-coup*, and is generally at the inner and upper side, and between the insertion of the recti muscles and the cornea, while at the same time it follows more or less exactly the curve of the latter. The anatomical peculiarities of the orbit, and of the sclerotic itself and its appendages, and in this connection the tendons of the muscles may be considered as such, seem to be amply sufficient to account for the general situation and direction of the wound. That the blow generally comes from the outer side, or from below, is accounted for by the protection afforded in other directions by the projection of the eyebrow and nose. The sclerotic, thickest posteriorly, gradually thins as it comes forward, is thinnest near its equator, and is strengthened anteriorly by the insertion of the recti tendons and their expansion, and the tarso-orbital ligament. This thinning behind the insertion of the tendons is, however, more than made good by the support which it there receives from the tendons and the capsule of Tenon, and the mass of fat and cellular tissue which fills the orbit, and in which the globe lies, must also have a protecting influence on the posterior parts of the sclerotic. The direction of its fibres, which chiefly, and especially in its anterior part, are nearly concentric to the circumference of the cornea, seems to determine the direction of the wound. According to Lawson, the sclerotic may also be ruptured by a blow falling upon the cornea, which, being a segment of a smaller sphere, acts like a wedge, and from its great elasticity may itself escape injury.

This situation of the wound, directly over the attachment of the iris, ciliary processes, and lens, must, almost without possible exception, cause laceration and prolapse of the iris, and, generally, laceration of the ciliary processes, and of the suspensory ligament of the lens, with dislocation of the latter, and if not immediate rupture of its capsule, later changes in its substance. Not infrequently the lens, as well as a portion of the iris, is forced out through the wound, and if, as sometimes happens, its capsule, and the conjunctiva above the wound, be not ruptured, may for a long time present the appearance of a subconjunctival cystic tumor. Always there is